The Role of Parental Personality Traits in Differential Parenting

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Significant relationships have been demonstrated between parental personality and parenting toward individual children, but there is little research exploring the relationship between parental personality and differential parenting (DP). The present study examined the relationship between the Big Five personality dimensions and differential positivity and negativity in parenting (observed and self-report measures). The analyses are based on a sample of 867 children nested within 381 families. Using multilevel modeling and controlling for child age, gender, birth order, behavior, and family socioeconomic status analyses revealed that maternal and paternal agreeableness were inversely related to reports of differential positivity. Agreeableness predicted observed differential negativity, and the relationship was curvilinear (at both high and low levels of agreeableness, differential negativity was higher). Finally, mothers with the most openness to experience exhibited the highest levels of reported differential negativity. The findings suggest that parental personality is a modest yet important influence to consider when conceptualizing the sources of DP.

Keywords: differential parenting, personality, positivity, negativity, agreeableness

Shared environments describe the developmental contexts and experience that siblings share, whereas nonshared environments reflect those that are unique to individual children (Plomin & Daniels, 1987). The distinction between shared and nonshared environments has prompted an interest in differential parenting (DP), which describes the way in which parents treat two or more children within the same family differently (Turkheimer & Waldron, 2000). *Differential positivity* refers to a particular child receiving more warmth and affection compared to other siblings, whereas *differential negativity* refers to a particular child experiencing more parental hostility and negative affectivity compared to other siblings. Although some aspects of DP are benign (reflecting,

for instance, age differences between children or expected differential treatment of a disabled sibling; McHale & Pawletko, 1992), some of it appears to be deleterious. DP for disfavored children has been shown to predict increased psychopathology over time (Burt, McGue, Iacono, & Krueger, 2006; Caspi et al., 2004) and to have a negative impact on sibling relationships (Stocker, Dunn, & Plomin, 1989). Such findings suggest that it is an important family process to understand.

As siblings raised in the same environment have been found to be more dissimilar than similar on personality and psychopathology, once genetic effects have been controlled, it has been suggested that nonshared environmental risks are more important in development than shared environmental risks (Harris, 1998). Some have suggested, however, that these two levels of risk may not be independent of one another (Jenkins & Bisceglia, 2011) and that shared environmental risk may increase the occurrence of nonshared environmental risk (Henderson, Hetherington, Mekos, & Reiss, 1996). Indeed, when mothers live in more disadvantaged socioeconomic circumstances, they are more likely to parent their children differently (Atzaba-Poria & Pike, 2008; Jenkins, Rasbash, & O'Connor, 2003). This pattern, whereby the effects of shared risk are indirectly operating through increased nonshared risk, could possibly explain previous findings citing the unimportance of shared environments. Parental personality is another aspect of siblings' shared experience that might be expected to influence children's exposure to nonshared risks such as DP. However, to date there has been only one study examining the relationship between maternal personality and differential treatment (Dunn & Plomin, 1986). It is important to continue to uncover the relationships between shared and nonshared sources of influence on child development. This is because shared risks have

been historically excused as less important, though they may actually be driving child development by increasing within-family variation in developmental contexts.

Henderson, Hetherington, Mekos, and Reiss (1996) argued that parents have a limited amount of resources (i.e., "time, attention, patience and support" p. 47) to allocate across all of their children. These factors are further limited when parents are forced to cope with other problems, including psychological distress and interpersonal conflict. Consequently, such parents may lack the resources to intentionally raise their multiple children with equity and equality, and will be more driven by child idiosyncrasies or preferences (Henderson et al., 1996). Below we will review literature indicating that personality is linked with a variety of psychological and interpersonal stressors, and that these stressors necessarily limit the resources parents have to equitably divide among their multiple children. Subsequently we will empirically evaluate the relationship between parental personality and DP, expecting to observe higher rates of DP among parents with maladjusted personality patterns. Indeed, Atzaba-Poria and Pike (2008) found that mothers with the lowest levels of self-reported anger and malaise exhibited the lowest levels of DP. These investigators concluded that this was due to the capacity for well-adjusted mothers, in terms of temperament and mental health, to run less stressful households, thereby conserving psychological resources that could be allocated to just and equitable parenting. Conversely, mothers who have poorly adjusted cognitive and emotional patterns were more likely to exhibit higher levels of DP, irrespective of sibling differences. The current study will extend such findings and examine the relationship between Big Five personality traits and differential parenting for both mothers and fathers.

Parental Personality and Differential Parenting as Objective Environments

The descriptions of shared and nonshared environments in the current study refer to the *objective* environment versus the *effective* environment (Goldsmith, 1993; Turkheimer & Waldron, 2000). The objective environment describes the uniformity versus dissimilarity in environmental *risk exposure* across siblings within a particular family. It refers to whether or not siblings are exposed to the same (shared) or different (nonshared) risks, regardless of outcome. Conversely, the effective environment describes the uniformity versus dissimilarity in the *consequences of environments* across siblings within a particular family, regardless of exposure. That is, they describe how siblings respond to their environments. To illustrate, consider the risk factor of parental divorce. This would describe an objective shared environment, since multiple siblings within a family are exposed to an identical event or risk. However, this may also have an effective nonshared component since a certain sibling will react differently to the event, relative to his or her siblings, causing them to develop differently.

Similar to divorce, parental personality is an objective shared environment since each parent has one personality, and multiple siblings have the same parent (i.e., it is the "same" personality for each child in the family, regardless of its impact on children). Similarly, DP (defined as the amount of positivity or negativity a specific child receives relative to the family average) is an objective nonshared environment. Turkheimer and Waldron (2000) note

that events that occur between families, such as divorce, can have both shared and nonshared *effective* components since children will react differently. However, the scope of this article concerns how the objective shared environment of parental personality impacts the objective nonshared environment of DP. For simplicity, we are referring to objective environments for the remainder of this article.

Genetic influences, such as gene-environment correlations (rGE), may also be implicated in the connection between objective shared environments and differential parenting (Horwitz & Neiderhiser, 2011; McGue, Elkins, Walden, & Iacono, 2005; Plomin, McClearn, Pederson, Nesselroade, & Bergeman, 1989). Many aspects of children's experience, which we have thought of as "environmental," are at least in part genetically influenced. One could argue that the hypothesized relationship between difficult parental personality and DP is attributable to difficult child behavior, which is influenced by the genetic endowment from parents. This would represent an evocative rGE if we suggest that a difficult child is eliciting harsh or less positive parenting relative to siblings. This could also reflect a passive rGE if we suggest that certain children are born into homes that are more conducive to DP (i.e., low SES, single parent), and these "environmental" processes are genetically informed. In the current study, this issue is partially addressed by accounting for child and context effects in our models. However, these measured variables do not account for all the possible rGE's that exist (see Horwitz & Neiderhiser, 2011; Jaffee & Price, 2007 for reviews). The implication of this is that, although we define parental personality as a shared environmental influence, some of the associations we discuss below may be genetic in nature.

The Five Factor Model of Personality, Parenting, and DP

Parental personality is thought to be one of the most important determinants of parenting behavior (Belsky, 1984). The Five Factor Model of Personality (which includes the dimensions of Emotional Stability, Extraversion, Agreeableness, Openness, and Conscientiousness) is the most widely accepted framework for the study of personality (McCrae & Costa, 2008). In Five Factor Theory (FFT), the Big Five dimensions represent latent psychobiological traits that comprise the foundation of the personality system. These traits are only knowable through their characteristic adaptations, which represent the concrete and tangible ways in which they manifest throughout day-to-day life (McCrae & Costa, 2008). The characteristic adaptations of the personality system are largely concerned with patterns of cognition (e.g., attribution making) and affectivity (e.g., emotional responses to stimuli; McCrae & Costa, 2008).

Extensive reviews on parental personality and parenting have been conducted elsewhere (see Belsky & Barends, 2002; Belsky & Jaffee, 2006). Mothers and fathers low in emotional stability show greater harshness and less sensitivity to children (Smith, 2010), in addition to higher levels of power assertion (Clark, Kochanska, & Ready, 2000). Agreeableness has been linked to lower levels of power assertion and control and higher levels of support and sensitive responding (Losoya, Callor, Rowe, & Goldsmith, 1997). Mothers high in extraversion tend to be more sensitive, responsive, and emotionally engaged with their children (Belsky, Crnic, &

Woodsworth, 1995). Finally, studies citing effects of conscientiousness and openness to experience are relatively limited. Thus, parents that provide the most positive and least negative rearing environments are likely to be high on the dimensions of extraversion, agreeableness, and emotional stability (Belsky & Barends, 2002; Belsky & Jaffee, 2006), without clear indications of directions of effect for conscientiousness and openness.

There has only been one previous study on the relationship between parental personality and DP (Dunn & Plomin, 1986). This study suggested that the amount of DP to which siblings are exposed is influenced by parental factors, such as maternal personality, and child characteristics, such as temperament and the biological relatedness of siblings. Dunn and Plomin (1986) found that (a) neuroticism and emotionality (fear) were associated with more differential affection and control, (b) impulsivity was associated with more differential control, and (c) extraversion and sociability were associated with less differential affection. However, as this study utilized a small (N = 88) and unusual sample (half adopted), and included only two children per family, we undertook further examination of this issue.

The Current Study

Since individuals low in agreeableness, extraversion, emotional stability, and conscientiousness tend to have higher levels of distress (Bagby, Quilty, & Ryder, 2008; Finch & Graziano, 2001), we expected parents low in these personality dimensions to exhibit higher levels of DP (positivity and negativity). This is because coping with psychological distress and conflict will tax the resources required for equitable treatment. Both self-reported and observational measures will be used, as the latter provide concrete, objective and reliable measures of the actual behaviors under study, free of rating idiosyncrasies, which may systematically vary with the actual constructs in question (Gardner, 2000). Different facets of openness have been found to be associated with maternal mood in different directions (Carrillo, Rojo, Sanchez-Bernardos, & Avia, 2001). Therefore, we did not make a prediction about the pattern of association that we expected for openness and DP. This is the first study to examine the role of the Big Five personality constructs in DP, to examine this in up to four children per family and to include both mothers and fathers.

Method

Participants

All of the women giving birth to infants in the cities of Toronto and Hamilton, Ontario, Canada between February 2006 and February 2008 were considered for participation. Families were recruited through a program called *Healthy Babies Healthy Children*, run by Toronto and Hamilton Public Health Units, which contacts the parents of all newborn babies within several days of the newborn's birth. Families were informed of the study and those who consented were contacted for enrolment. Approval for all components of this research was obtained by an institutional ethical review board. Inclusion criteria for participating in the Intensive component of the Kids, Families and Places (IKFP) study (which involved collection of observational and biological data) included an English-speaking mother, a newborn > 1,500 g

(subsequently called the target child), two or more children less than 4 years, and parents agreeing to be videotaped. Thirty-four percent of families approached in Toronto agreed to take part. At Time 1 (infants were 2 months old), 501 families took part in the intensive sample data collection and these families were followed up at Time 2, 18 months later. At Time 2, 397 families participated. We compared the IKFP sample with the general population of Toronto and Hamilton using 2006 Canada Census Data, on five demographic indicators: immigrant status, number of persons in the household, family type, mother's personal income and education. Our sample was similar to the general population on number of persons in the household and personal income. The IKFP included a lower proportion of nonintact families, fewer immigrants and more educated mothers than the general population. Although 397 families took part at Time 2, the current investigation is based on 381 families due to missing data. Sample size and missing data are further discussed in the missing data section below.

On average, mothers were $M = 34.56$ ($SD = 4.59$) years old, and partners were 37.67 (5.04). Sibling 1 was 1.60 (0.15) years, while sibling 2–4 was 4.76 (1.83) years of age. A within-family standard deviation was calculated in order to estimate the age range, which was 2.02 (0.88). Mothers had an average of 15.59 (2.59) years of education, excluding kindergarten, and partners had an average of 15.63 (2.65) years excluding kindergarten. Household income was measured using response categories. The 25th percentile was CDN \$45,000−\$54,999, the median was CDN \$75,000−\$84,999, and the 75th percentile was CDN \$105,000 or more. Among all families, $n = 160$ (42%) had mothers who were immigrants. In terms of ethnicity, 230 (60.4%) were of European descent, 100 (26.2%) were Asian, 23 (6%) were Black, and 28 (7.3%) were classified in a residual category. Regarding the sibships, 73 (19.2%) were all female, 86 (22.6%) were all male, 222 (58.3%) were mixed gender. The overwhelming majority were full biological siblings, 367 (96.3%). There were 286 (75.1%) families with two siblings, 80 (21.0%) with three siblings, and 12 (3.1%) with four or more. Moreover, there were 341 (89.5%) intact families, 16 (0.4%) step families, 21 (5.5%) single parent families, and three (0.8%) families classified as other. Among partners, 101 (40.7%) were immigrants. In terms of ethnicity, 163 (65.7%) were European, 65 (26.2%) were Asian, 11 (4.4%) were Black, and nine (3.6%) were classified in a residual category.

Procedure

Cross-sectional data from the second wave of data collection were used in the present investigation for two reasons. At Time 1, the youngest sibling was too young for meaningful measurement on the parenting measures, and personality data were only collected at Time 2 to minimize response burden on parents. For mothers, questionnaire information was collected during home visits, while packages were left at the home for fathers who mailed back completed questionnaires. During the visits, interactions with mothers were videotaped and subsequently coded by trained research assistants. Different research assistants were responsible for the home visits and coding. Unlike self-report measures of parenting which were collected on up to four children per family for mothers and fathers, observed measures of parenting were only collected for mothers on the target child and the closest older

sibling. This decision was made due to the cost of collecting and coding observational data, the measurement burden on mothers, and the unavailability of fathers during home visits. Mothers interacted with each child separately, and there were other activities (e.g., completing questionnaires) between the interactions. Interactions were kept sufficiently short (15 minutes per child), relative to the typical demands of parenting, so as not to overly burden mothers. Observational data were gathered in the home using three tasks, each lasting 5 minutes: (a) free play with no toys, (b) structured play with the mother teaching the child during an activity, and (c) the mother and child reading a wordless picture-book together.

With respect to the structured play task, mothers were given a peg board with circles and squares of different colors, and a picture to copy. They were asked to help their child construct the pattern seen in the picture. The pattern to copy was beyond the children's developmental level in order to elicit teaching from the mother toward the child. The wordless book was intended to elicit mental state talk and emotions (for other purposes in the IKFP study), and represent a familiar focused activity. The books were appropriate to the developmental level of the child. The goal was to elicit the mother's capacity to engage the child positively on a common task in early childhood, to challenge the child's attention and to elicit talk of emotions and other internal states.

Measures

Demographic covariates. Child gender (Female = 1, Male = 0), age in years, and birth order (Oldest = 1 and Middle = 1 vs. Youngest = 0) were collected from mothers, in addition to a variety of other basic questionnaire information.

Socioeconomic status (SES). SES was measured as a composite variable. Parents responded to the following questions: "How many rooms do you have in your house"; "Do you own or co-own this home/apartment/unit, even if still making payments: yes = 1, no = 2"; "Do you own or co-own a car, even if still making payments: yes = 1, no = 2". These questions, in addition to a question pertaining to annual income, were standardized and coded so that all variables were going in the same direction, where higher scores were indicative of higher SES. Items had an internal consistency of $\alpha = .79$.

Positive and negative parenting-self report. Mother and father perceptions of their own positive and negative behaviors directed toward each child was assessed using two scales from the National Longitudinal Survey of Children and Youth (Statistics Canada, 2008) that were adapted from Strayhorn and Weidman's (1988) Parent Practices Scale. The original scale showed good reliability and validity. The adapted version has been shown to be associated with child- and parent-report of expected child outcomes, as well as contextual factors (Ho, Sand, & Jenkins, 2008; Peters et al., 2010; Sprott, Jenkins, & Doob, 2005). In previous studies these scales have provided valid measurement of DP (Jenkins et al., 2003; Boyle et al., 2004). Each parent rated five items for positivity and five items for negativity, for each child, on a 5-point scale ranging from *never* (1) to *almost always* (5). The mean across items were taken. In the current study, internal consistencies for mother and father positivity and negativity were between $\alpha = .82$ and .84.

Observed negativity. Observational ratings were provided separately on three observational tasks using a Likert scale ranging from 1 to 7. Two aspects of negativity in parenting were coded based on social learning theory: expressed negative affect and negative control (Granic & Patterson, 2006). The negative affect scale from the Coding of Attachment-Related Parenting (CARP; Matias, Scott, & O'Connor, 2006) coded facial expressions, voice tone and behavior indicative of anger, criticism, threats and sarcasm. The negative control scale of the Parent-Child Interaction System (PARCHISY; Deater-Deckard, 2000; Deater-Deckard, Pylas, & Petrill, 1997) captured the mother's style of controlling the child when the child did something disliked by mothers. This involved the use of physical means of having the child comply, pulling or grabbing the child, and criticism and shaming. An *observed negativity* composite was constructed by taking the mean of negative affect and negative control across each of the observational tasks. Internal consistency for the scale was $\alpha = .76$ and interrater reliability, assessed by double coding 10% of tapes (throughout coding period), was .92.

Observed positivity. Positivity was assessed using the sensitive responding and mutuality scales of the CARP (Matias, Scott, & O'Connor, 2006) as well as the positive control scale of the PARCHISY (Deater-Deckard et al., 1997). The CARP provides a measure of sensitive responding (following Kochanska & Murray, 2000) and mutuality (Bowlby's description of the goal corrected partnership, Bowlby, 1982). Sensitive responding measures the degree to which the mother displays awareness of the child's needs and shows sensitivity to his or her signals, supports the child's autonomy, and demonstrates an ability to see things from the child's point of view. Mutuality is a dyadic code indexed by reciprocity in conversation, affect sharing, joint engagement in task, and open body posture. The positive control scale of the PARCHISY (Deater-Deckard, 2000; Deater-Deckard et al., 1997) captured the positive aspects of the mother's style of directing or influencing the child's behavior, including actions like praise and open-ended questions. A composite was constructed by taking the mean of sensitive responding, mutuality and positive control across all tasks. Internal consistency was $\alpha = .85$ and interrater reliability was .94.

Parental personality. The personality traits of mothers and fathers were assessed using the Mini-Markers (Saucier, 1994), which are an abbreviated version of Goldberg's (1992) 100-adjective inventory of the Big Five. The Mini-Markers were developed to provide a brief, user-friendly and psychometrically sound alternative when measuring the Big Five in demanding assessment situations. Participants are instructed to respond to 40 unipolar items on a 9-point Likert scale. Items are in the form of positively and negatively worded adjectives. Example items and internal consistencies for mothers and fathers are provided, respectively: Extraversion ("talkative", "bashful", $\alpha = .79$, $\alpha = .81$), Agreeableness ("kind", "unsympathetic", $\alpha = .73$, $\alpha = .78$), Conscientiousness ("organized", "inefficient", $\alpha = .74$, $\alpha = .85$), Emotional Stability ("relaxed", "envious", $\alpha = .74$, $\alpha = .75$), and Openness to Experience ("philosophical", "uncreative", $\alpha = .74$, $\alpha = .72$). In comparison to longer personality assessments, the Mini Markers have fewer difficult items and lower interscale correlations (i.e., greater orthogonality). Negatively worded items were reverse scored and the mean of all appropriate items was

calculated, creating a range of possible scores for each dimension ranging from 1 to 9.

Child aggression, attention and emotional problems. Child aggression, attention and emotional problems were each assessed using well established scales used in previous population studies, including the Ontario Child Health Study (Boyle et al., 1993) and the National Longitudinal Survey of Children and Youth (Statistics Canada, 2008). Mothers and fathers responded to items on a 3-point scale ranging from *never/not true* to *sometimes/somewhat true* to *often/very true*. Example items and internal consistencies for mothers and fathers are in parentheses, respectively. Aggression was measured with six items (e.g., "this child is physically aggressive", $\alpha = .74$, $\alpha = .72$). Emotional problems were measured with 7 items (e.g., "this child seems to be unhappy, sad or depressed" $\alpha = .66$, $\alpha = .68$). Attention problems were measured with six items ("this child is easily distracted, has trouble sticking to any task", $\alpha = .76$, $\alpha = .77$). For each scale, a mean score was taking where higher scores indicate more symptomatology. Mother and father correlations within composites were $r = .45$, $p < .001$ for aggression, $r = .35$, $p < .001$ for attention and $r = .51$, $p < .001$ for emotional problems. Scores were standardized and a mother-father composite was created for each area of child functioning by taking the average rating of both parents.

Analysis

Multilevel modeling (MLM) was used for hypothesis testing because the data were nested (i.e., children nested within families). MLM allows for the partitioning of variance in an outcome into Level 2 (between-family or shared) and Level 1 (within-family or non-shared) components (Jenkins et al., 2009). When parenting is the outcome of interest, within-family variance provides an estimate of DP, where greater Level 1 variance is indicative of greater discrepancies in the parenting shown to children in the same family. MLM simultaneously allows for the estimation of fixed and random effects. Fixed effects can be interpreted like regression coefficients in a standard OLS regression model. Random effects refer to variance estimates, where the between- and within-family variance components are estimated for the entire sample. Additionally, these components can be allowed to vary as a function of another variable. By allowing parental personality to vary randomly at Level 1, we can determine if the amount of within-family variance differs across families as a function of the personality trait in question. For example, we may ask: Is there greater within-family variance (more DP) in families with highly extraverted mothers? This statistical model, whereby within-family variance is modeled as a function of a level 2 variable, was initially described by Jenkins and colleagues (2003; footnote 7). Consistent with Belsky's model of the determinants of parenting (1984), it is important to control for aspects of the environment (e.g., SES) and child (e.g., child age, gender, birth order, child aggression, inattention and emotional problems) that have been found to influence parenting. As SES has also been found to be associated with higher levels of differential parenting (Jenkins et al., 2003) it was important to include the Level 1 random effect for SES along with other covariates.

The analysis took place in three steps. First, bivariate correlations between all variables are described. Second, we examined associations between each single personality dimension and differential parenting, while controlling for confounding variables at the child and family level as described above. This was done to understand the simple associations between personality and differential parenting, given that personality dimensions overlap with one another. Third, all personality dimensions that were significant in the second step were included in the final step (including covariates). Nonsignificant parameters were dropped and the final models are presented. Note that all continuous variables were standardized prior to modeling. The coefficients reflect the change in the outcome at the average level of all continuous variables in the model and for the reference category (girls who are youngest children). Data analyses were carried out using SPSS 17, MLwiN 2.10 and Realcom.

Missing Data

For mothers at Time 2, there were self-report parenting measures for 865 children nested within 381 families. For observed parenting (mothers only) there were measures of 716 children nested within 358 families. For fathers, there were parenting measures on 560 children nested within 248 families. The decision was made to include cases with complete outcome measures and only impute missing predictors and covariates. The usefulness of multilevel multiple imputation is well demonstrated for fixed effects. As random effects (i.e., within family variance) were the target of this investigation, heteroskedasity in the random effects was expected (i.e., differential parenting will be higher at higher levels of certain personality dimensions). In simulation studies, Multiple Imputation has been shown to perform poorly under these conditions (Büttner & Rässler, 2008). Thus, we decided only to impute predictors and covariates.

Of the participating mothers and fathers, 69 (18.1%) mothers and 32 fathers (12.9%) had incomplete personality measures or missing covariates. These missing data were dealt with using the Multiple Imputation package in Realcom. This program takes into account the multilevel clustering of data when calculating imputation sets. For mothers (self-report and observed) and fathers, 10 complete data sets were constructed. The imputation models included the measures of parenting and personality in addition to the covariates, operating as auxiliary variables. Analyses were conducted on the 10 data sets and results were pooled in MLwiN.

Results

Descriptive statistics and intercorrelations for study variables are presented for mothers and fathers in Tables 1 and 2. For both mothers and fathers, there was an inverse relationship between self-reported positivity and negativity, with the same true for maternal observations. Self-reported maternal and paternal positivity was directly related to all personality dimensions, except emotional stability. For mothers, negativity was inversely related to all dimensions except extraversion and openness, and for partners, only extraversion. Self-reported maternal positivity was related to all child behavior composites in expected directions but not SES. The same was true for fathers, though there was no association between partner positivity and child emotional problems. For observed mothering, only positivity was directly associated with agreeableness. Mothers observed to be more positive had higher SES and children with lower levels of inattention, whereas mothers observed to be more negative had lower SES and children with more inattention.

Table 1
Descriptive Statistics and Correlations for Mothers

	2	3	4	5	6	7	8	9	10	11	12	13	*M*	*SD*
Parenting														
1. Mom pos.	**−.24**	.02	.00	**.19**	**.13**	**.12**	.05	**.09**	−.02	**−.17**	**−.09**	**−.14**	4.55	0.48
2. Mom neg.		.05	−.02	−.03	**−.23**	**−.16**	**−.29**	−.05	−.02	**.27**	**.21**	**.36**	2.64	0.62
3. Observed pos.			**−.45**	.04	**.08**	.02	.07	.04	**.33**	**−.15**	−.03	−.05	3.74	0.84
4. Observed neg.				.00	−.03	−.03	−.04	−.07	**−.23**	**.17**	.05	.05	1.50	0.56
Mom Personality														
5. Extraversion					**.19**	**.29**	**.17**	**.23**	**.15**	**−.12**	**−.15**	−.05	6.28	1.24
6. Agreeableness						**.39**	**.39**	**.25**	**.14**	**−.20**	**−.24**	**−.19**	7.50	0.91
7. Conscientiousness							**.26**	**.14**	.09	**−.19**	**−.14**	**−.22**	7.05	0.98
8. Emo. stability								−.02	**.12**	**−.17**	**−.18**	**−.24**	5.81	1.20
9. Openness									.10	**−.11**	**−.11**	−.03	6.29	1.04
Other														
10. SES										**−.19**	**−.20**	−.04	0.00	0.82
11. Child inattention											**.24**	**.49**	0.00	0.90
12. Child emotion												**.21**	0.00	0.92
13. Child conduct													0.00	0.91

Note. Significant effects at $p < .05$ in bold. Pos. = positivity; Neg. = negativity; Emo. = Emotional; SES = Socioeconomic Status.

There was moderate convergence among the Big Five composites, more so with mothers than fathers. Also among mothers, SES was positively correlated with extraversion, agreeableness and emotional stability, but unrelated to conscientiousness and openness. SES was unrelated to personality among fathers. All dimensions of maternal personality were inversely related to all measures of child behavior with the exception of conduct with extraversion and openness. Similar patterns were found among fathers, but paternal extraversion did not predict any child behavior outcomes.

Maternal Positivity Report

Preliminary analyses showed that mothers' agreeableness and extraversion were associated with differential positivity (see Table 3). Less agreeable and less extraverted mothers exhibited higher levels of within-family variance in self-reported positivity (i.e., more DP). For the final model, agreeableness was entered first as the largest effect. Once agreeableness was in the equation, extraversion was no longer

significantly associated with DP and was dropped from the model. The effect of agreeableness was significant, where more agreeable mothers exhibited lower differential positivity. There was no fixed effect of agreeableness. Results of the final analysis can be seen in Table 4, Column "Maternal positivity report.'"

Child age, birth order, and conduct problems were significantly associated with maternal positivity. The younger children are in age, the more positivity they experience. Oldest siblings experience more positivity than youngest siblings, controlling for age, though middle siblings do not differ. Children who exhibit more conduct problems experience less positivity, as well. There was a random effect of SES, where mothers in families with higher SES exhibited significantly lower levels of differential positivity. All covariates explained 20% of the within family variance in positivity report (not shown in Table 4. This calculation was done examining the reduction in within-family variance when these variables were not in the model and when they were in the model).

Table 2
Descriptive Statistics and Correlations for Partners

	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
Parenting												
1. Dad pos.	**−.20**	**.24**	**.36**	**.13**	.08	**.17**	.02	**−.20**	−.07	**−.16**	4.19	0.53
2. Dad neg.		−.04	**−.10**	−.09	**−.32**	−.13	.06	**.19**	**.13**	**.30**	2.58	0.58
Dad Personality												
3. Extraversion			**.13**	**.17**	.08	**.15**	−.01	−.09	−.07	−.06	5.76	1.33
4. Agreeableness				**.16**	**.36**	**.19**	−.12	**−.15**	−.11	**−.16**	7.21	0.95
5. Conscientiousness					**.22**	.09	.02	**−.14**	−.09	**−.20**	7.00	1.12
6. Emo. stability						.00	.05	**−.14**	**−.20**	**−.16**	5.96	1.25
7. Openness							−.06	**−.11**	−.06	−.03	6.64	0.96
Other												
8. SES								—[a]	—	—	—	—
9. Child inattention									—	—	—	—
10. Child emotion										—	—	—
11. Child conduct											—	—

Note. Significant effects at $p < .05$ in bold. Pos. = positivity; Neg. = negativity; Emo. = Emotional; SES = Socioeconomic Status.
[a] Correlations, means and standard deviations for these variables were already presented in Table 1.

Table 3

Associations Between Parenting and Personality Using Random Effects and Controlling for Covariates

	Maternal positivity report	Paternal positivity report	Maternal negativity report	Maternal negativity observed
Extraversion	**−.006 (.003)**	.001 (.019)	−.004 (.005)	−.009 (.006)
Conscientiousness	−.005 (.003)	.001 (.004)	.000 (.005)	.006 (.006)
Emo. stability	−.003 (.003)	**−.008 (.004)**	−.004 (.005)	.007 (.006)
Openness	−.004 (.003)	−.004 (.005)	**.011 (.005)**	−.005 (.007)
Agreeableness	**−.008 (.003)**	**−.013 (.005)**	−.004 (.005)	**.028 (.008)**[a]
Agreeableness[2]				.017 (.010)[a]

Note. Standard errors are reported in parentheses. All bolded terms are significant at the $p < .05$ level.
[a] The model containing the effect of agreeableness on observed maternal negativity would only converge if a quadratic term was entered. The combined effect of both parameters was significant using the Wald Test $\chi^2 (2) = 9.16$, $p = .01$.

Paternal Positivity Report

Preliminary analyses showed that fathers' agreeableness and emotional stability were associated with differential positivity (see Table 3). More agreeable and emotionally stable fathers showed lower levels of differential positivity. For the final model, agreeableness was entered first as the larger effect. When emotional stability was entered, neither effect was significant, due to the nonindependence between agreeableness and emotional stability ($r = .36$, $p < .05$). The random effect of agreeableness was retained in the final model. There was also a fixed effect of agreeableness, where agreeable fathers showed higher levels of positivity, in general. Results of the final analysis can be seen in Table 4, Column "Paternal positivity report."

Gender, child age, birth order and attention problems were significantly associated with paternal positivity. Positivity is inversely associated with child age. Girls experience more positivity than boys and oldest children experience more positivity than youngest children, but do not differ significantly from middle children. Children with more attention problems experience less positivity, as well. All covariates explained 19% of the within family variance in fathers' report of positivity.

Maternal Negativity Report

Preliminary analyses showed that mothers' openness was significantly associated with differential negativity, where more open mothers had higher levels of differential negativity. No other personality traits were significant predictors of reported differential maternal negativity. Results of the final analysis can be seen in Table 4, Column "Maternal negativity report." Child age, birth order, attention problems, and conduct problems were significantly related to maternal self-reported negativity. Mothers were more negative with boys, children of older age, and the oldest siblings in

Table 4

Final Multilevel Models Examining Relationship Between Personality and Differential Parenting for Mothers and Fathers

Response	Maternal positivity report	Paternal positivity report	Maternal negativity report	Maternal negativity observed
Fixed Part				
Intercept	**4.490 (0.031)**	**4.159 (0.042)**	**2.473 (0.038)**	**1.463 (0.069)**
Male	−0.013 (0.025)	**−0.066 (0.031)**	0.017 (0.032)	0.036 (0.036)
Child age	**−0.180 (0.020)**	**−0.068 (0.025)**	**0.091 (0.026)**	−0.125 (0.071)
Oldest	**0.130 (0.036)**	**0.124 (0.047)**	**0.307 (0.048)**	−0.021 (0.087)
Middle	0.057 (0.039)	0.054 (0.046)	**0.294 (0.052)**	−0.016 (0.090)
SES	−0.035 (0.021)	0.026 (0.037)	0.020 (0.025)	**−0.127 (0.026)**
Child inattention	−0.031 (0.017)	**−0.054 (0.023)**	**0.089 (0.022)**	**0.072 (0.025)**
Child emotion poblems	−0.005 (0.016)	−0.022 (0.021)	0.026 (0.020)	0.016 (0.024)
Child conduct problems	**−0.048 (0.017)**	−0.001 (0.022)	**0.224 (0.022)**	−0.027 (0.025)
Agreeableness	0.039 (0.023)	**0.174 (0.031)**		0.023 (0.025)
Openness			−0.009 (0.026)	
Random Part				
Between Family Variance				
Intercept/intercept	**0.109 (0.011)**	**0.159 (0.018)**	**0.131 (0.015)**	**0.061 (0.013)**
Within Family Variance				
Intercept/intercept	**0.087 (0.006)**	**0.084 (0.007)**	**0.156 (0.010)**	**0.201 (0.018)**
SES/intercept	**−0.007 (0.003)**	−0.004 (0.004)	**−0.010 (0.005)**	**−0.045 (0.009)**
Agreeableness/intercept	**−0.008 (0.003)**	**−0.013 (0.005)**		**0.028 (0.008)**
Agreeableness/agreeableness				0.017 (0.010)[a]
Openness/intercept			**0.011 (0.005)**	

Note. Estimates are presented with standard errors in parentheses. All bolded terms are significant at the $p < .05$ level. SES = socioeconomic status.
[a] The model containing the effect of agreeableness on observed maternal negativity would only converge if a quadratic term was entered. The combined effect of both parameters was significant using the Wald Test $\chi^2 (2) = 9.16$, $p = .01$.

the family. Children who were more inattentive and exhibited more conduct problems experienced more negativity. There was a significant random effect of SES, where there was less differential maternal negativity in higher SES homes. These covariates accounted for 43% of the within family variance in reported maternal negativity.

Observation of Maternal Negativity

Preliminary analyses revealed that agreeableness was associated with observed differential negativity. However, the model would not converge without permitting a curvilinear relationship between maternal agreeableness and observed negativity. These effects can be seen in Table 4 (agreeable/intercept: linear; agreeable/agreeable: quadratic) and Figure 1. Using the Wald Test, the joint chi-square for the linear and quadratic terms with 2 degrees of freedom was significant, $\chi^2(2) = 9.16$, $p = .012$. This model showed that differential negativity was its highest at low levels of agreeableness. At medium levels of agreeableness, differential negativity was at its lowest. However, relative to mothers with medium levels of agreeableness, highly agreeable mothers exhibited slightly higher levels of differential negativity.

There was a significant fixed effect of child inattention, whereby children with higher inattention levels experienced more negativity during observational tasks. Moreover, there was a fixed effect and random effect for SES. There were significantly higher levels of average maternal negativity and differential maternal negativity in low SES homes. These covariates only accounted for 2% of the variance. Note that there were no effects of personality on differential paternal negativity, and on observed maternal positivity. These models are not further presented in tabular form.

Discussion

It was hypothesized that DP among mothers and fathers would be inversely related to parental personality adjustment. This hypothesis received moderate support for parental agreeableness. In the case of observed maternal negativity, low levels of agreeableness were associated with the most differential treatment. Agreeableness refers to a person's "prosocial and communal orientation" (p. 120) and is exhibited through acts of altruism, affection, and trust toward others (John, Naumann, & Soto, 2008). It is also a dimension described by adjectives of cooperation, kindness and warmth at one pole, and quarrelsomeness, unkindness, and fault-finding at the other (John et al., 2008). Previous research has indicated that DP is more likely to occur in stressful situations, which may be partially attributable to parental maladjustment (Atzaba-Poria & Pike, 2008; Jenkins et al., 2003). When parents are cognitively and emotionally exhausted, they are less capable of generating effort, attention and support for their families, and equitably allocating these resources across siblings (Henderson et al., 1996). The agreeableness-DP association likely operates through this mechanism: because agreeable parents are better adapted to their environments, they possess more parenting resources, including the volitional capacity to distribute these resources equitably across their children. Agreeable women have lower levels of depression due to their abilities to obtain a high level of social support and avoid social conflicts (Finch & Graziano, 2001). Agreeable people also possess more ego-strength, hardiness, and general positive adjustment (Bernard, Hutchison, Lavin, & Pennington, 1996). Moreover, agreeable mothers have families with higher levels of parental education and annual household income (Kochanska, Aksan, Penney, & Boldt, 2007), factors that are associated with lower levels of DP (Jenkins et al., 2003).

Interestingly, mothers with very high levels of agreeableness exhibited slightly elevated levels of observed differential negativity relative to moderately agreeable mothers. This resultant "backward-J" curvilinear relationship between agreeableness and observed negativity was unexpected but not inconsistent with other literature. For example, dynamic systems accounts of the development of antisocial behavior indicate that parental hostility is
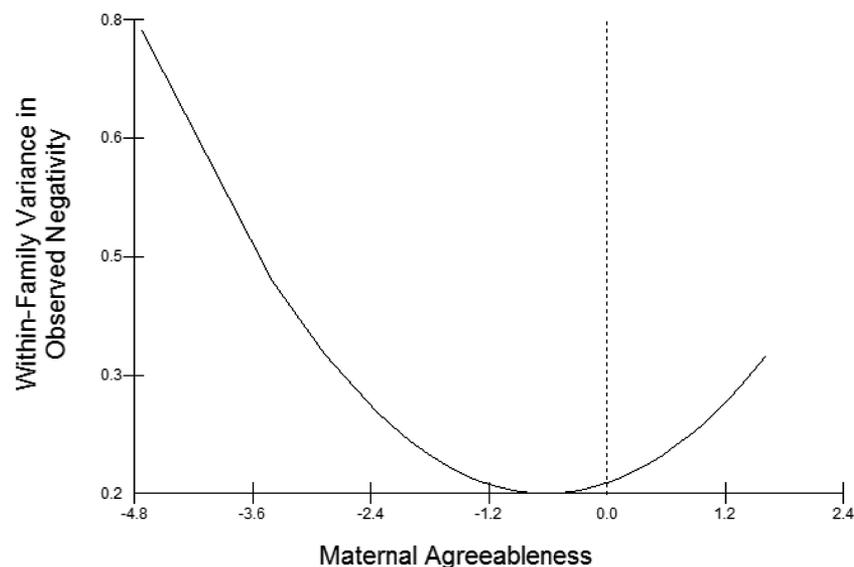

Figure 1. There is a curvilinear effect of maternal agreeableness on within-family variability in observed maternal negativity.

largely regulated by the reinforcement contingencies that are operative in real-time exchanges within parent–child dyads (Granic & Patterson, 2006). Such reciprocal processes are more amenable to measurement in observational settings, as opposed to self-report questionnaires. It is possible that the curvilinear effect was observed because extremely agreeable mothers were allowing their individual children to tailor the progression of their interactions, permitting inherent sibling differences to emerge which were picked up through the patterns of the mothers' responding. The agreeable mothers who are trying to parent in flexible, contingent and child-centered ways (Losoya et al., 1997) may eventually be pushed too far by a difficult child, eliciting more negativity in that dyad and, consequently, more DP.

It is notable that Kochanska and colleagues (2007) found that demographic risk was inversely related to agreeableness (in addition to openness and growing up in a stable home) for mothers but not for fathers. Similarly, in the present study, SES was directly associated with personality (agreeableness, extraversion and emotional stability) for mothers but not for fathers. In a review of the combined effects of SES and family processes on human development, Conger, Conger, and Martin (2010) suggest that women, minorities and single-parents are particularly vulnerable to the effects of sociodemographic risk. These effects are likely to be even more pronounced among multiparous and minority mothers of young children, such as the women enrolled in the Kids, Families & Places Study. Also in the Kochanska study (2007), when controlling for demographic risk, agreeableness was found to be related to absolute level of parenting for fathers but not mothers. We found the same pattern for the relationship between agreeableness and absolute level of parenting, when controlling for other confounding variables in the multilevel models. However, agreeableness was a predictor of DP for both mothers and fathers. This pattern of results suggests that parental agreeableness is important in the prediction of DP for both parents, though it is only important for absolute level of parenting for fathers. This may be attributable to collinearity between maternal agreeableness and SES. It must be noted that not all studies report gender differences in the effects of SES on personality (Jonassaint, Siegler, Barefoot, Edwards, & Williams, 2011). Further investigation in this area is warranted.

The fact that the curvilinear association was uncovered for observed parenting and not for self-report parenting raises measurement issues in the study of parenting and DP. Despite using psychometrically sound scales and established observational procedures, there was limited agreement across measurement modalities. Gardner (2000) suggests that self-report measures are better indicators of "feelings," "thoughts," "attitudes," and "perceptions" of behavior, compared to observational methods, which access complex social processes that unfold over time. Parental reports can also be biased because of social desirability (Feinberg, Neiderhiser, Simmens, Reiss, & Hetherington, 2000). Observational approaches are thought to provide a "less biased" and ecologically valid alternative. However, they suffer from time and context influences, even when tasks to elicit interaction are standardized (Gardner, 2000). For these reasons, observation and self-report measures of parenting cannot be said to measure the same construct (Hawes & Dadds, 2006). Furthermore, studies that have specifically investigated differential parenting through multiple assessment methods have shown very low congruency across reporters across methods (Atzaba-Poria & Pike, 2008). In the

present study, multi-informant, multi-method assessment was used as this allows for the most comprehensive examination of differential parenting. In terms of the curvilinear effect of agreeableness for observed but not self-report parenting, it is possible that highly agreeable mothers do not realize that differential interactions are taking place across siblings (suggested by an anonymous reviewer). Simultaneously, it is possible that agreeable mothers (and fathers) hold global evaluations of their relationships with their children that are relatively homogenous and positive, despite sibling differences, consistent with their prosocial and accepting predispositions.

No hypotheses were made regarding the relationship between openness and differential treatment due to the dearth of literature examining this construct in relationship to parenting. However, the positive association between openness and differential maternal negativity (self-report) can be interpreted with personality research that outlines the complex nature of this trait. The openness to experience dimension has been described using the terms "originality and open-mindedness" (p. 120), referring to the extent to which an individual takes pleasure in new experiences, uses their imagination and participates in a wide range of mental and experiential endeavors (John et al., 2008). It also includes an introspective, intellectual, and philosophical component (McCrae & Costa, 2008).

It has been suggested that Openness may be associated with positive parenting and child rearing environments because having children is a new experience, in and of itself (Belsky & Jaffee, 2006), making this construct necessary for successful transition and adaptation into parenthood. Conversely, other research has indicated that openness is, in fact, a multidimensional construct which may be related to some aspects of maladjustment. For example, Wolfenstein and Trull (1997) found that currently depressed and formerly depressed individuals were higher on dimensions of Openness to Aesthetics and Openness to Feelings compared to nondepressed controls, and that overall openness predicted individuals' depression ratings over and above indices of neuroticism. Other researchers have made similar findings when examining the subcomponents of openness (Carrillo, Rojo, Sanchez-Bernandos, & Avia, 2001). Our findings are consistent with the link between openness and depression, given that depressed mothers exhibit more differential treatment (Atzaba-Poria & Pike, 2008). Future research should examine the multiple subcomponents of the openness dimension and the ways in which they relate to differential and absolute levels of parenting.

Several of the study hypotheses were not supported. It was hypothesized that emotional stability would be related to differential parenting for mother and father positivity and negativity. However, this trait was only related to DP for paternal positivity, and the effect was not independent of agreeableness. Similarly, an effect of extraversion was only observed for self-reported maternal positivity, though this association was also not independent of the effect of agreeableness. One explanation for these null findings may have to do with the multifaceted nature of the personality system, as explicated in Five Factor Theory (McCrae & Costa, 2008). In the current study, the Big Five personality traits were modeled as independent and additive predictors of DP. This approach was taken in order to determine the individual personality dimensions that are most influential in DP. Moreover, this is the strategy most commonly applied when researchers study the ef-

fects of personality on parenting toward individual children (e.g., Kochanska et al., 2007). However, previous research has found that the Big Five also tend to cluster in predictable patterns within individuals, resulting in personality prototypes (Asendorpf, Borkenau, Ostendorf, & Van Aken, 2001). It is possible that effects of extraversion and emotional stability on DP will be contingent upon the levels of other traits within an individual's personality system. For example, the manifestation of low emotional stability will appear very different in a person who is highly extraverted versus introverted. Future researchers should continue to examine the DP-personality association by utilizing prototypes and examining trait-by-trait interactions. The current research represents an important step in this process.

Theoretical Implications

This study sought to examine the associations between dimensions of personality using the Five Factor Model and DP. More broadly, we evaluated the nature in which nonshared family environments can be predicted by shared environmental factors that operate at the level of parental psychological functioning. Research that includes multiple children per family is valuable for disentangling between and within family processes (Furman & Lanthier, 2002). Increasing evidence suggests that these two levels of influence are related (Jenkins & Bisceglia, 2011). That is, *differences* in the rearing environments of siblings can be explained by aspects of the environments that multiple siblings *share*. One such aspect appears to be parental personality. It is important to note that the associations described could be genetically mediated and that there are other risk factors to consider when conceptualizing the foundations of DP. Some of these include SES, marital dissatisfaction and family size (Jenkins et al., 2003).

Limitations and Future Directions

One limitation of the current study is the reliance on cross-sectional data, leading to ambiguity about causal influence. Though personality influences are present before individuals start parenting (and thus, the causal relationship goes from personality to parenting), it is also true that events can influence the characteristic adaptations of one's basic tendencies (McCrae & Costa, 2008). Therefore, it is possible that parental personality patterns could be shaped by their differential experiences with their multiple children. As there is variable stability in personality traits (Bleidorn, Kandler, Reimann, Angleitner, & Spinath, 2009), future studies should consider employing longitudinal designs so that statements surrounding the temporality of the personality-DP relationship can be made. Another limitation concerns the possibility of shared method variance bias. Since mothers and fathers served as respondents for both personality and parenting, there is a possibility that some of the relationships are attributable to correlated error rather than relationships between true scores. Although the patterns found between personality traits and observed parenting add confidence to our findings, these associations appear to be fewer than those with self-report parenting.

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Call for Papers for a Special Section of the *Journal of Family Psychology*: Spirituality and Religion in Family Life

Editors: Annmarie Cano and Annette Mahoney

This special section of the *Journal of Family Psychology* aims to stimulate the breadth and depth of rigorous scientific studies on the interface of faith and family life. Recent reviews demonstrate that spirituality and religion remain relevant to contemporary families, but critical gaps in the research literature compromise a balanced or deep understanding how faith operates in a family context (see Mahoney, Swank & Tarakeshwar, 2001; Mahoney, 2010; Mahoney, in press). For example, repeated studies suggest that higher religious attendance and salience helps to form (e.g., marital unions) and maintain (e.g., lowers divorce risk) traditional family bonds. But scarce research exists on specific positive or negative roles that spirituality and religion may play in families, especially in nontraditional or distressed families. To help address these gaps, we invite papers that address any of the following ways in which specific spiritual cognitions and behaviors centered on family life may:

- help or harm relational and individual adjustment, including, but not limited to, the sanctification of an aspect of family life, prayer for a family member, positive religious\spiritual coping strategies to cope with family issues, spiritual struggles or negative religious\spiritual coping tied to family difficulties, and perceiving negative family events as a sacred loss and\or desecration.
- facilitate or undermine the formation and maintenance of diverse types of families (e.g., cohabiting unions with and without children, same-sex couples with and without children, blended, foster, adoptive, and multi-generational families).
- be part of the problem or solution in coping with family-related distress. This includes, but is not limited to, difficulties in the formation (e.g., unwanted singlehood or cohabitation, unintended pregnancy, infertility) and maintenance (e.g., coping with infidelity, partner or parent-child violence, chronic relational conflict, divorce, or a family member who has medical, mental health, or developmental problems) of family relationships.

Questions about the special section can be addressed to the section editors, Annmarie Cano, Ph.D. (acano@wayne.edu) or Annette Mahoney, PhD. (amahone@bgsu.edu) Submit manuscripts through the *Journal of Family Psychology* portal (http://www.apa.org/pubs/journals/fam) no later than **May 3, 2013** and please note that the submission is for this special section.