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Mothers' Power Assertion; Children's Negative, Adversarial Orientation; and Future Behavior Problems in Low-Income Families: Early Maternal Responsiveness as a Moderator of the Developmental Cascade

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Parental power assertion, a key dimension of family environment, generally sets in motion detrimental developmental cascades; however, evidence suggests that other qualities of parenting, such as responsiveness, can significantly moderate those processes. Mechanisms that account for such moderating effects are not fully understood. We propose a conceptual model of processes linking parental power assertion, parental responsiveness, children's negative, adversarial, rejecting orientation toward the parent, and behavior problems. We test that model in a short-term longitudinal design involving 186 low-income, ethnically diverse mothers and their toddlers. When children were 30 months, the dyads were observed in multiple, lengthy, naturalistic laboratory interactions to assess behaviorally mothers' responsiveness and their power-assertive control style. At 33 months, we observed behavioral indicators of children's negative, adversarial, rejecting orientation toward the mothers in several naturalistic and standardized paradigms. At 40 months, mothers rated children's behavior problems. The proposed moderated mediation sequence, tested using a new approach, PROCESS (Hayes, 2013), was supported. The indirect effect from maternal power assertion to children's negative, adversarial orientation to future behavior problems was present when mothers' responsiveness was either low or average but absent when mothers were highly responsive. This study elucidates a potential process that may link parental power assertion with behavior problems and highlights how positive aspects of parenting can moderate this process and defuse maladaptive developmental cascades. It also suggests possible targets for parenting intervention and prevention efforts.

Keywords: mother–child parenting, responsiveness, power assertion, behavior problems

Few issues in research on family processes, socialization, and developmental psychopathology have been studied more extensively than parental control style, and particularly, power assertion. And yet, gaps remain in our understanding of developmental implications of power assertion for young children's social-emotional outcomes, including behavior problems.

The very term "power assertion" is extremely broad and used to denote a wide and very heterogeneous scope of parental practices. An enormous literature, longitudinal and experimental, has consistently demonstrated detrimental short- and long-term effects of parents' heavy-handed, power-assertive discipline practices, especially those involving physical forms of control (Dodge, Coie, & Lynam, 2006; Gershoff, 2002; Hinshaw et al., 2000; McCord, 1997; Patterson, 1982, 1995). Beyond doubt, very strong forms of power assertion that involve physical abuse are uniformly harmful. But there is a broad variation in forms, types, quality, and intensity of power-assertive discipline strategies that fall below that threshold (Baumrind, Larzelere, & Owens, 2010; Grolnick & Pomerantz, 2009); for those, developmental implications are far less clear, and a lot remains to be learned.

Those complexities have been long recognized in family research. For example, growing evidence has shown that effects of power assertion may vary across different cultural family ecologies of development. Although detrimental in White families, power-assertive parenting may not have negative implications in Asian or African American families (Chao, 1994; Deater-Deckard & Dodge, 1997a, 1997b; Deater-Deckard, Dodge, Bates, & Pettit, 1996; Stacks, Oshio, Gerard, & Roe, 2009). Lansford, Deater-Deckard, Dodge, Bates, and Pettit (2004) found that experience of physical discipline in children followed from age 5 to 16 was related to higher levels of subsequent externalizing behaviors for European American adolescents but to lower levels of such behaviors for African American adolescents.

But perhaps the most compelling and significant for family research is the substantial moderating role of the emotional quality

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of the parent–child relationship context in which power assertion is applied, consistent with Darling and Steinberg's (1993) general socialization model. Already a classic learning study demonstrated that punishment by a warm, nurturant agent was more effective than punishment by an aloof agent (Parke, 1969). Parenting researchers have long argued that parental power is only detrimental in the context of a rejecting, aloof parent–child relationship; however, combined with warmth and nurturance, firm control is part of authoritative parenting, the optimal child-rearing pattern. Several more recent studies with broadly ranging populations have generally supported the existence of deleterious effects of harsh discipline on children's outcomes only in the absence of parental warmth, emotional support, or involvement (Campbell, 1990; Deater-Deckard and Dodge, 1997a, 1997b, Deater-Deckard, Ivy, & Petrill, 2006; Germán, Gonzales, Bonds McClain, Dumka, & Millsap, 2013; McLoyd & Smith, 2002; Towe-Goodman & Teti, 2008). Berlin and colleagues (Berlin et al., 2009) found that mothers' verbal punishment in the context of high emotional responsiveness could even have *positive effects* on child outcomes in a large sample of low-income, ethnically diverse toddlers.

Several studies have focused on parental power assertion in the context of insecure and secure attachment. Research on implications of power assertion in the context of early secure versus insecure attachment in two large longitudinal studies of community families has yielded findings consistent across the studies, several ages, multiple types of assessments, and mother–child and father–child relationships (Kochanska, Barry, Stellern, & O'Bleness, 2009; Kochanska & Kim, 2012). Parental power assertion predicted children's resentment, opposition, and ultimately, antisocial behavior problems in parent–child dyads that had been insecure in infancy. In dyads that had been secure, however, such detrimental effects of power assertion were absent.

Consequently, although exceptions have been reported (e.g., Stacks et al., 2009), an impressive body of evidence consistently shows that the emotional dimensions of the parent–child relationship, such as responsiveness, warmth, nurturance, or security significantly moderate the impact of parental power assertion on children's development. Although that evidence is impressive and broadly accepted by family scholars, important gaps remain: What mechanism or mechanisms link parental power assertion with future behavior problems in parent–child relationship contexts that lack parental warmth, responsiveness, or nurturance? And why does parental responsive parenting defuse the deleterious effects of power assertion?

We propose that heavy-handed, power-assertive discipline sets in motion a maladaptive cascade leading to behavior problems because it engenders *an adversarial, angry, resentful orientation or stance in the child*; the child, feeling disconnected and alienated from the parent, resents and rejects parental socialization agenda. That orientation, in turn, leads to broadly ranging externalizing behavior problems, and it may also lead to anxious arousal, fear, distress, depression, or helplessness, and other internalizing problems (see review by Gershoff, 2002; also Hoffman, 1983; McKee et al., 2007). Furthermore, we propose that parental responsiveness, a key aspect of the parent–child relationship, may moderate this process at two possible points (see Figure 1): one, it may moderate the link between parental power and the child's negative orientation toward the parent, and two, it may moderate the link between negative orientation and behavior problems. The conceptual model is presented in Figure 1.

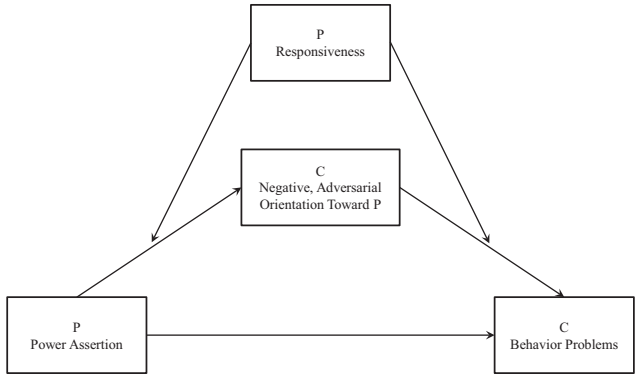

Figure 1. A conceptual model of the process linking parental power assertion, the child's negative, adversarial orientation toward the parent, and children's behavior problems, and the moderating effects of the parent's responsiveness. P = parent; C = child.

We believe that the view of the child's negative, adversarial, rejecting orientation as a mediator linking maternal power assertion and the child's future behavior problems in unresponsive mother–child relationships is consistent with research on children's perception of the parent and of parental discipline. Attachment theory has emphasized that children of unresponsive or unavailable parents form their implicit representations of the parents as untrustworthy, aloof, or unpredictable (Bretherton, Ridgeway, & Cassidy, 1990; Main, Kaplan, & Cassidy, 1985; Sroufe, Carlson, Levy, & Egeland, 1999). Consequently, as they get older, those children may perceive the parent's use of power-assertive discipline as hostile, unfair, and mean-spirited. By contrast, children of responsive parents are likely to come to see it as well-intentioned, legitimate, and benevolent. Generally, such a model dovetails with research on children's perceptions of discipline in the parenting literature (Bugental & Grusec, 2006; Dodge, Bates, & Pettit, 1990; Gershoff, 2002; Grusec & Goodnow, 1994; Holden, 2002; Vittrup & Holden, 2010).

Of course, a direct assessment of toddlers' perceptions and attributions with regard to parental control is difficult. However, it is possible to obtain behavioral measures of young children's overall "attitude," "orientation," or "stance" toward the parent's influence. We have repeatedly done so in other studies. For example, we have discussed toddlers' positive, receptive, willing stance (Kochanska, Kim, & Boldt, 2013; Kochanska, Koenig, Barry, Kim, & Yoon, 2010), as well as adversarial, resentful, rejecting stance (Kochanska et al., 2009). Those constructs have been accepted by many developmental scholars (Kuczynski & DeMol, in press; Thompson, in press).

In this article, we again employ behavioral measures that reflect children's presumed general negative, rejecting orientation toward parental socialization: anger, defiance, resentment, and rejection of maternal cues, overtures, messages, and requests.

We further propose that maternal responsiveness may moderate the link between children's thus assessed negative, rejecting orientation and behavior problems. A rapidly growing literature has demonstrated that whereas children's difficulty (anger, defiance, opposition) in the context of suboptimal parenting typically leads

to poor outcomes, such risks are considerably reduced or even eliminated in the context of parental warm, responsive parenting (Belsky & Pluess, 2009; Bradley & Corwyn, 2008; Kim & Kochanska, 2012; Mesman et al., 2009; Stright, Gallagher, & Kelley, 2008).

In sum, we propose a *moderated mediation* model: In mother–child dyads in which mothers are unresponsive, maternal power assertion predicts the child's negative, adversarial, rejecting orientation toward the mother, and that orientation, in turn, predicts a broad range of behavior problems. By contrast, in dyads with responsive mothers, such maladaptive cascade would be defused or absent.

We tested such moderated mediation using a newly developed statistical modeling tool, called PROCESS (Hayes, 2013). PROCESS is a versatile, comprehensive computational tool that can examine various analytic issues regarding mediation, moderation, and the concurrent combination of mediation and moderation. Surpassing the limitations of other specialized modeling tools such as SOBEL (Preacher & Hayes, 2004), MBESS (Kelley, 2007), and PRODCLIN (MacKinnon, Fritz, Williams, & Lockwood, 2007), PROCESS considerably expands the number of analytic models that can be tested and includes multiple mediators, moderators, and control variables (Hayes, 2013).

Maternal power assertion and responsiveness, and children's negative, adversarial orientation were all assessed using observations in naturalistic lengthy contexts. Children's behavior problems were assessed broadly using two well-established maternal report instruments. In a short-term longitudinal design, we assessed mothers' power assertion and responsiveness when children were on average 30 months (ranging in age from 2 to 3 1/2), children's negative orientation three months later, and children's outcomes 10 months after the initial assessment.

As indicated by the earlier review, parental power-assertive style may take a great variety of forms, ranging in intensity and modality—physical abuse, harsh discipline, forceful confrontation, critical and negative control, coercion, prevailing over the child's wishes, insistence on the child's compliance, enforcement of the parent's agenda, strictness, pressure, firmness, or robust "structuring"—to mention just a few (Grolnick & Pomerantz, 2009; Kuczynski & De Mol, in press). Power assertion is extremely challenging to study using observational methods. It requires researchers to set up a control context "saturated" with demands typical for the studied age, which may elicit a conflict between the parent and the child (such as prohibitions), and, given parents' understandable reluctance to resort to power assertion when observed, to sample a large amount of behavioral interaction to assure sufficiently robust coding. Even so, typically observed power assertion in the laboratory is very infrequent. In this study, we observed mothers' style of control *within* episodes of discipline focused on maternal enforcement of a prohibition. We defined power assertion as the amount of maternal pressure, and coded every 30-s segment using overall ratings and microscopic codes of physical influence tactics.

Most of the extant evidence on interactions between power assertion and the quality of the mother–child relationship has been obtained from community samples that have included all socioeconomic strata (except Berlin et al., 2009, where participants came from Early Head Start National Research and Evaluation Project, and Germán et al., 2013, where families were generally low-income Latino). Economic disadvantage, financial strain, and chaotic or substandard living conditions are often seen as risk factors in early development due to associated parental stress and increased poor parenting (Belsky, 1984; Bornstein & Bradley, 2003; Duncan, Brooks-Gunn, & Klebanov, 1994; McLoyd, 1998). Consequently, extending research from community samples to higher-risk samples to understand factors that determine adaptive or maladaptive implications of power assertion is a valuable goal for family research. Toward that end, this study involved exclusively low-income, relatively ethnically diverse mothers.

Method

Participants

Flyers about the study were distributed broadly in local communities, targeting particularly venues frequented by low-income families, such as Women, Infants, and Children nutritional program offices, thrift stores, Head Start locations, mobile homes parks, subsidized housing areas, and so forth. To qualify, the mother had to receive or be eligible for aid from a federal, state, or faith-based agency, or for Earned Income Tax Credit, the child had to be free of major health problems, and the mother had to be able to speak English while observed.

A total of 186 mothers of children aged from 24 to 44 months entered the study (90 girls). 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, and 45% had an associate, BA, or technical degree. The sample was relatively diverse: 11% Hispanic (of whom 40% also considered themselves White), 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 with a partner, 6% were divorced, 25% were single, and 2% were in other arrangements. Most (58%) did not have a paid job outside the home; 22% worked full time, and 20% worked part time. The study was approved by the local Institutional Review Board. Mothers signed informed consents before they began to participate.

Overview of Design

Mothers and children were first observed in the laboratory when children were on average 30 months (M = 30.33, SD = 5.40, range = 24–44); 168 dyads (81 girls) returned approximately 3 months later, when children were on average at 33 months (M = 33.34, SD = 5.48, range = 26–47) for another laboratory session. The laboratory includes a naturalistically furnished living room and a sparsely furnished play room. The living room contains a low shelf with extremely attractive toys and objects that are designated as off-limits to the child upon the entry to the room; the mother was asked to keep the child from touching them throughout the session. Both sessions were conducted by a female visit coordinator and videotaped through a one-way mirror. The study involved a parenting intervention (after the first laboratory session, mothers were randomized into two groups, child-oriented play vs. play-as-usual, and the intervention was implemented for approximately 10–12 weeks, followed by the session at 33 months). Maternal ratings of children's problems were collected approxi-

mately 6 months after the second session, when children were on average 40 months ($M = 39.98$, $SD = 5.56$, range = 32–58). We therefore refer to the assessments at 30, 33, and 40 months. Because there were no differences between the groups that were attributable to the intervention in the measures reported here, the findings are presented for the entire sample (note that all analyses covaried the effects of the group assignment).

Separate coding teams coded the studied behavioral constructs from digital recordings. At least 15–20% of cases were used for reliability. The coders realigned periodically to prevent drift. All behavioral measures have been refined over several decades of research with multiple samples.

Measure of Maternal Responsiveness to the Child, 30 Months

Maternal responsiveness was coded in seven naturalistic contexts in the laboratory for the total of 62 min (introduction to the laboratory, 5 min; mother busy, 10 min; snack, 12 min; play, 10 min; toy cleanup, 10 min; free time, 10 min; and gift, 5 min).

Coders rated the mother's responsiveness from 1 (*highly unresponsive*) to 7 (*highly responsive*) for each of the seven contexts. The code integrated the classic dimensions (Ainsworth, Bell, & Stayton, 1971): sensitivity-insensitivity to the child's cues and signals, cooperation-interference, or support for the child's autonomy, and acceptance-rejection, or affection and enjoyment of the interaction. Reliability among the coders (intraclass correlations, ICCs), ranged from .81 to .93.

The scores cohered across the observed contexts, Cronbach's alpha = .89. Thus, the scores were averaged across all contexts into the mother's *overall responsiveness score toward the child*.

Measure of the Mother's Power-Assertive Control Style, 30 Months

Mothers' power-assertive control style was observed for 45 min, in several contexts in the living room that took place in the immediate proximity of the prohibited toys (e.g., snack, free time). We coded all control encounters revolving around the prohibition. First, coders identified all episodes of control (starting when the child's attention turned to the prohibited toys, until the child shifted away from them; reliability for this episodic coding, ICCs, were .85 to .99). Then, another coding team coded every 30-s segment within those episodes.

For each 30-s segment, the coders rated the mother's global influence style, from the least to the most power assertive, using one of the mutually exclusive five codes: no interaction, social exchange (no attempt to control behavior), gentle guidance (subtle, gentle control), control (matter-of-fact, assertive control), forceful negative control. Reliability, kappa, was .86.

Additionally, for each segment, the coders recorded the mother's physical power-assertive influence strategies: 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). Both could be given (but each no more than once) in a segment. Reliability, kappas, ranged from .77 to .86.

The following formula was used for data aggregation (as in several previous articles, e.g., Kochanska, Aksan, Penney, & Boldt, 2007): (a) all instances of each global influence style code and each physical power-assertive code were tallied, and each tally was divided by the number of coded segments; (b) those figures were weighted to reflect the amount of maternal power (for the global influence style, no interaction weighted by −2, social exchange by –1, gentle guidance by 1, control by 2, forceful negative control by 3; for the physical power-assertive codes, assertive physical control by 4, and forceful negative physical control by 5); and (c) those weighted figures were summed, to create an overall score of maternal power-assertive style. Higher scores denoted more power-assertive maternal style of enforcing the prohibition.

Measure of the Child's Negative, Adversarial Orientation Toward the Mother, 33 Months

The child's defiant behavior. Children's defiance was coded during the control episodes that involved the prohibited toys (45 min of mother–child interaction in the immediate proximity to the toys). Child behavior was coded for each 30-s segment. Defiance was described as opposition accompanied by poorly controlled anger, temper tantrum, screaming, kicking or throwing toys, hitting mother, whining, or a deliberate misbehavior. Reliability, kappa, was .88. All instances of defiance were tallied and divided by the number of coded segments.

The child's unresponsive behavior. The child's responsiveness to the mother was coded during seven naturalistic contexts (62 min total, e.g., mother busy, snack, play). For each context, the coders rated the child's responsiveness from 1 (*highly unresponsive*), to 2 (*unresponsive*) to 3 (*somewhat unresponsive*), to 5 (*somewhat responsive*), to 6 (*responsive*), to 7 (*highly responsive*; there was no code 4, to help coders avoid the middle scores). The code integrated the child's positive attention and orientation toward the mother, sensitivity to the mother's cues and signals, promptness of the child's response, his or her enjoyment of interaction, and his or her cooperation with the mother's bids. Specific conventions and examples illustrated each code. Reliability (ICCs), ranged from .90 to .92. For each child, we then tallied and summed all the instances of the codes indicating low responsiveness: Codes 1, 2, and 3.

The child's violations of the mother's prohibition. We implemented the paradigm validated in three large earlier longitudinal studies (Kochanska & Aksan, 1995; Kochanska, Coy, & Murray, 2001; Kochanska et al., 2010). At the end of the session, the mother reminded the child about the rule regarding the off-limits toys, and the child was left alone for 8 minutes (a heavy curtain was drawn to separate the section of the room with the toy shelf, where the child remained, from the rest of the room, where the mother stayed). The child was able to return to the mother, although this happened relatively rarely (the mothers were asked to encourage the child to return to the section with the toy shelf).

Child behavior was coded for each 5-s segment (up to total of 96 segments). In this article, we focus on *deviation*—playing with any of the off-limits toys, removing a toy from the table, and so forth. Reliability of coding, kappa, was .88.

All instances of deviation were tallied and divided by the number of segments when the child remained in the same section of the room as the toy shelf. The occasional segments when the

child went to the mother's section of the room were not included ($M = 9.55$, $SD = 15.11$).

Overall Measure of the Child's Negative, Adversarial Orientation Toward the Mother. The child's defiance, unresponsive behavior, and violations of the mother's prohibition correlated (*r*s ranged from .35 to .51, all *p*s $< .001$). They were all standardized and aggregated into the child's adversarial, rejecting stance toward the mother.

Measure of the Child's Behavior Problems, 40 Months

Mothers completed two very well-established instruments, both broadly used in developmental psychopathology: Infant–Toddler Social and Emotional Assessment (ITSEA; Carter, Briggs-Gowan, Jones, & Little, 2003) and Early Childhood Inventory (ECI-4; Gadow & Sprafkin, 1997, 2000).

ITSEA. Mothers rated each item as 0 (*not true/rarely*), 1 (*somewhat true/sometimes*), or 2 (*very true/often*). Four composite scores were used (the numbers of items in the parentheses): the overall scores for the *externalizing domain* (24), encompassing the means of the scales of impulsivity, aggression/defiance, and peer aggression; for *internalizing domain* (32), encompassing depression/withdrawal, general anxiety, separation distress, and inhibition to novelty; and for *dysregulation domain* (31), encompassing negative emotionality, sleep problems, eating problems, and sensory sensitivity. We further included the overall score for the items from the *maladaptive item cluster* (13); although rare, those items are associated with psychopathology (e.g., symptoms of posttraumatic stress disorder, toileting issues, sexualized behaviors, etc.).

ECI-4. ECI-4 is a clinical instrument for children aged 3–5 that produces scores for multiple disorders. We used the symptom severity scoring approach (with most items rated as 0 = *never*, 1 = *sometimes*, 2 = *often*, or 3 = *very often*). We then created *externalizing behavior problems score* (the sum of items targeting oppositional defiant disorder and conduct disorder, 18 items) and *internalizing behavior problems* score (the sum of items targeting separation anxiety, specific phobia, obsessive-compulsive disorder, tics disorder, general anxiety disorder, depression, adjustment disorder, social phobia, and posttraumatic stress disorder, 39 items, with several items that are counted toward more than one disorder counted only once).

Overall Composite Measure of the Child's Behavior Problems. Because PROCESS accepts only observed variables, for the analyses, we created the overall composite measure of behavior problems by standardizing and averaging the six scores. Note that our model assumed that the studied paths from maternal power assertion to the child's adversarial stance to behavior problems (and the moderating effects of maternal responsiveness) would apply to both externalizing and internalizing problems. Additionally, confirmatory factor analysis (CFA) supported a view of the six scores as reflecting one latent behavior problem construct (as well, all six scores were interrelated, Cronbach's alpha, .82). All descriptive statistics are in Table 1.

Table 1
Descriptive Data for All Measures

Measure	*M*	*SD*	Range
Measures at 30 months			
M responsiveness	4.55	1.07	1.43–6.29
M power assertion	.11	.77	−1.18–3.16
Measures at 33 months			
C defiant behavior toward M	.03	.06	.00–.42
C unresponsive behavior toward M	1.75	1.83	.00–7.00
C violations of M prohibition	.32	.32	.00–.97
C negative, adversarial orientation toward M[a]	.00	.78	−.81–3.47
Measures at 40 months			
C externalizing, ITSEA	.54	.27	.08–1.33
C internalizing, ITSEA	.48	.23	.03–1.22
C dysregulation, ITSEA	.48	.27	.08–1.67
C maladaptive, ITSEA	.09	.14	.00–.83
C externalizing, ECI-4	6.39	5.82	.00–34
C internalizing, ECI-4	10.98	8.55	2.50–59.50
C total behavior problems[a]	.00	.73	−1.19–2.71

Note. M = mother; C = child; ITSEA = Infant–Toddler Social and Emotional Assessment; ECI-4 = Early Childhood Inventory.
[a] Mean of standardized constituent scores.

Results

Preliminary Correlations Among the Measures

We first examined the correlations among the studied constructs. Maternal responsiveness at 30 months was negatively associated with maternal power assertion at 30 months, $r(184) = -.23$, $p < .01$; children's negative, adversarial orientation toward the mother at 33 months, $r(166) = -.35$, $p < .001$; and children's total behavior problems at 40 months, $r(160) = -.21$, $p < .01$, respectively. Children's negative orientation was positively associated with maternal power assertion, $r(166) = .58$, $p < .001$, and children's behavior problems, $r(160) = .27$, $p < .01$, respectively. Maternal power assertion was not significantly associated with children's behavior problems, $r(160) = .11$, *ns*.

Paths From Mothers' Power Assertion at 30 Months to Children's Total Behavior Problems at 40 Months: Moderated Mediation With Children's Negative, Adversarial Orientation Toward Mothers at 33 Months as the Mediator and Mothers' Responsiveness at 30 Months as the Moderator

We used PROCESS (Hayes, 2013) to test a moderated mediation model. The main focus of that model is to estimate indirect effects of a predictor on a dependent variable through a mediator, depending on various levels of a moderator. To test the estimated indirect effect, PROCESS applies the bootstrapping method (Preacher, Rucker, & Hayes, 2007) where the sampling distribution of the conditional indirect effect is not assumed to be normal.

Before a comprehensive testing of the moderated mediation model in Figure 1, we first tested, using a multiple regression approach, the significance of each of the proposed interaction effects (mothers' responsiveness moderating the effect of mothers' power assertion on children's negative, adversarial orientation and mothers' responsiveness moderating the effect of children's negative orientation on the behavior problems). The covariates were: the child's gender, the mother's intervention group status, and her perceptions of the child's difficult temperament at 33 months, derived from Early Childhood Behavior Questionnaire (ECBQ; Putnam, Gartstein, & Rothbart, 2006), because it could potentially

account for links between maternal power and children's behavior problems. The former interaction effect was not significant, $b = .05$, $SE = .04$, *ns*. However, the latter interaction effect was significant, $b = -.14$, $SE = .06$, $p < .05$.

Consequently, in the final *moderated mediation model*, only the moderation effect of mothers' responsiveness on the link between children's adversarial orientation and the behavior problems was included. The three covariates were retained, and additionally, we controlled for mothers' power assertion at 40 months, concurrent to children's behavior problems, to account for its continuity over time and for its potential impact on concurrent behavior problems (Cole & Maxwell, 2003).

Figure 2 represents the results of the moderated mediation model. The increase of the power assertion led to the increase of the child negative, adversarial orientation, and that orientation, in turn, led to more behavior problems. The latter part of the causal effect was moderated by mothers' responsiveness. The direct effect of power assertion on behavior problems was not significant, implying that the effect of mothers' power assertion on children's behavior problems was fully mediated by children's negative, adversarial orientation. Maternal responsiveness was negatively associated with the negative orientation, but not directly related with the behavior problems. The significant interaction effect strongly suggested that the paths of mediation from the power assertion to adversarial orientation to behavior problems were different depending on maternal responsiveness toward the child.

An additional advantage of PROCESS is allowing researchers to make inferences about the level of the moderator variable below and above which the indirect effect of interest is present or absent. For example, we can examine the presence or absence of the indirect effect of power assertion on child behavior problems using the conventional points of +/–1 *SD*. Note that PROCESS does not generate traditional significance levels (*p* values), and the inference about the presence of indirect effects is based on confidence intervals. If zero does not fall within the confidence interval, one can conclude that an indirect effect is different from zero.

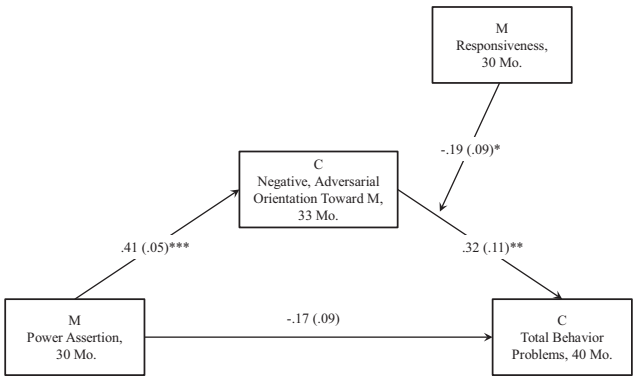

Figure 2. Moderated mediation model of the path from mothers' power assertion at 30 months (the predictor) to children's negative, adversarial orientation toward mothers at 33 months (the mediator) to children's total behavior problems at 40 months (the dependent variable). The mother's responsiveness at 30 months is modeled as the moderator. Although not depicted, mothers' power assertion at 40 months and children's mother-rated difficult temperament at 30 months, the child's gender, and the mother's intervention group status are included as covariates. Solid lines represent significant effects and dashed lines represent nonsignificant effects. M = mother; C = child; Mo. = months. * $p < .05$. ** $p < .01$. *** $p < .001$.

Specifically, at the *low level of maternal responsiveness* (−1 *SD* below the mean), the indirect effect of maternal power assertion on child behavior problems, mediated by the negative, adversarial orientation, was $b = .20$, $SE = .08$, and its bias-corrected bootstrap confidence interval, [.06, .37] did not include zero at $\alpha = .05$. This indicates the presence of an indirect effect.

At the *average level of maternal responsiveness*, the indirect effect was $b = .12$, $SE = .05$, and its bias-corrected bootstrap confidence interval, [.03, .24] also did not include zero at $\alpha = .05$. Consequently, we again infer the presence of an indirect effect.

But in contrast, at the *high level of maternal responsiveness* (+1 *SD* above the mean), the indirect effect was $b = .05$, $SE = .06$, and its bias-corrected bootstrap confidence interval, [–.07, .17] did include zero at $\alpha = .05$, and thus failed to show an indirect effect. Consequently, we conclude that the indirect effect of maternal power assertion on the total behavior problems, mediated by the child's negative, adversarial orientation, was present when mothers' responsiveness was either *low* or *average*, but absent when mothers were *highly responsive*.

Discussion

This study contributes to the growing body of research that aims to elucidate complexities involved in a key family process: developmental implications of parental power-assertive discipline for young children. We replicate several studies that have emphasized the key importance of the emotional qualities of the parent–child relationship as the context for discipline, and offer a conceptual model of the mediating and moderating processes involved. It is quite clear, in view of the extant literature, that parental power assertion may have distinctly different effects when applied in the context of maternal responsiveness, warmth, and nurturance than when applied in the context of maternal unresponsiveness and aloofness. In the former context, power does not have detrimental effects. In the latter context, however, power can be quite "toxic," likely contributing to and, over time, exacerbating mutually adversarial and coercive parent–child ambience and increasing the risk of behavior problems (Kochanska & Kim, 2012).

The contributions of this study, however, extend beyond a replication. We propose and test *a mechanism* elucidating the paths from maternal power to children's behavior problems in differing relationship contexts—the child's negative, adversarial, rejecting orientation toward the parent. We supported the presence of the *overall indirect sequence*—from maternal power to child negative orientation to behavior problems—in dyads where mothers' responsiveness was either low or average but not in those where mothers were highly responsive. In particular, when mothers' responsiveness was either low or average, child negative orientation toward the mother predicted problems representing the full spectrum of externalizing, internalizing, dysregulated, and maladaptive symptoms.

Although often implicated, the actual intervening mechanisms that link power-assertive discipline with behavior problems have rarely been studied, particularly using behavioral measures, although notable exceptions exist (e.g., Lorber & Egeland, 2011). It is increasingly recognized that basic research elucidating moderating and mediating processes in developmental cascades is key for designing effective intervention and prevention programs that target specific components

of such cascades (Masten & Cicchetti, 2010). Interventions directed aimed at increasing the mother's responsiveness and other positive behaviors may have far-reaching effects of defusing toxic effects of her power assertion. Even when forceful discipline is used, the "positive capital" of the relationship may reduce the likelihood of the child's adversarial response and of the future behavior problems.

Future research may further address the characteristics of children's negative, adversarial, resentful orientation that emerges as a result of heavy-handed parental pressure in relationships that lack emotional warmth and responsiveness. Given the children's young age, we necessarily focused on behavioral manifestations of such stance. But in future research with older children, the study of children's perceptions of parental discipline may prove very fruitful.

Children in unresponsive or adversarial family relationships likely perceive their parents as unavailable, untrustworthy, and unresponsive, and interpret parental power assertion as hostile, unfair, and mean-spirited (Bugental & Grusec, 2006; Dodge, Bates, & Pettit, 1990; Gershoff, 2002; Holden, 2002; Rohner, Bourque, & Elordi, 1996; Vittrup & Holden, 2010). By contrast, children in warm, responsive, and positive families may perceive their parents as responsive, trustworthy, and supportive, and their discipline—as legitimate and well-intentioned. Such research may provide compelling and productive new insights (Berlin et al., 2009; Bretherton, Golby, & Cho, 1997; Kochanska & Kim, 2012). According to Vittrup and Holden (2010), however, children younger than 6 years have difficulty expressing their views about discipline, so doing so in the current study was not feasible, and we relied on the behavioral manifestations of children's adversarial orientation toward the mothers (anger, defiance, ignoring maternal overtures, and disregarding her requests). Older children, however, are well capable of reporting on parental discipline, and their reports of negative parenting are associated with externalizing and internalizing behavior problems as well. Therefore, using older children's reports is sometimes better than using parents' reports for the analysis of parenting and behavior problems (Barry, Frick, & Grafeman, 2008). Notably, a study of children's reports has also shown the role of parental warmth as a moderator of the link between harsh discipline and behavior problems (McKee et al., 2007). Consequently, future interventions targeting older children's perceptions of the parent may also have a remedial effect on troubled parent–child dyads.

Another innovative component of this study is the use of PROCESS (Hayes, 2013), a recently developed analytical tool, which has allowed us to elucidate further the nature of the moderating effect of the early mother–child relationship in which power assertion is applied. The fact that the model was supported controlling for the continuity of power assertion and maternal perception of child difficult temperament bolsters our confidence in the findings.

This study may inform the discussion of "good enough parenting" (Scarr, 1992) and family intervention and prevention efforts. The analyses revealed that *only in highly responsive* parenting context (+1 *SD* above the mean), the maladaptive path from maternal early power assertion to the child's adversarial orientation to future behavior problems was "defused." But in families in which mothers were either *poor* (−1 *SD* below the mean) *or even average in responsiveness*, the maladaptive developmental cascade was present. Our findings suggest that average responsiveness may not be good enough or sufficient to offset maladaptive effects of increased power assertion.

This study has several limitations. First and foremost, maternal power assertion was generally infrequent. This issue is well-known, because low levels of power assertion are typical in observational research, and scholars adopt various variable aggregation techniques to handle this problem (see, e.g., Joosena, Mesman, Bakermans-Kranenburg, & van Ijzendoorn, 2012). We believe that our approach has resulted in a reasonable distribution of the power-assertive scores. Our overall weighted power assertion measure that assigns lower weights to mothers' behaviors that use no or little power, and higher weights to more power-assertive behaviors increases the robustness of our assessment of the varying amount of pressure the mother applied during control episodes. Perhaps increasing observation times even further, particularly under conditions of some stress, would allow for a more robust measurement of power assertion. It was notable, however, that the posited indirect effect of power assertion (in less responsive mothers) was supported despite those limitations.

Other mechanisms linking power assertion and behavior problems are certainly possible. In her comprehensive review, Gershoff (2002) outlined several other potential mechanisms, for example, child arousal, observational learning, or external attributions. As well, genetic factors underpin parents' and children's traits, parenting, and behavior problems (Caspi, Roberts, & Shiner, 2005; Maccoby, 2000; Wade & Kendler, 2000). Finally, children's behavior problems were, by and large, in the normative range (Gadow & Sprafkin, 1997). In future studies, selecting children with elevated behavior problems may provide important additional insights.

Developmental psychology has made great strides toward understanding the effects of power-assertive discipline, a key dimension of the family environment, but complex questions still remain. Ultimately, this research will help inform educational programs and interventions that target effective parenting.

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