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Early Attachment Organization Moderates the Parent-Child Mutually Coercive Pathway to Children's Antisocial Conduct

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Abstract

This multi-method study of 101 mothers, fathers, and children elucidates poorly understood role of children's attachment security as *moderating* a common maladaptive trajectory: from parental power assertion, to child resentful opposition, to child antisocial conduct. Children's security was assessed at 15 months, parents' power assertion observed at 25 and 38 months, children's resentful opposition to parents observed at 52 months, and antisocial conduct rated by parents at 67 months. Moderated mediation analyses indicated that in insecure dyads, parental power assertion predicted children's resentful opposition, which then predicted antisocial conduct. This mechanism was absent in secure dyads. Early insecurity acts as a catalyst for a dyad embarking on mutually adversarial path toward antisocial outcomes, whereas early security defuses this maladaptive trajectory.

Children's disruptive and antisocial behavior problems pose a major burden for individual children, their families, and the society. Consequently, factors that cause children to embark on antisocial developmental trajectories continue to command research attention.

Converging bodies of research have led to a consensus that harsh, power-assertive parental control style is a core mechanism of children's antisocial development. Multiple reviews have supported short-term and long-term links between parental coercive, harsh, heavy-handed, and power-assertive treatment and children's disruptive and antisocial behavior problems (Dodge, Coie, & Lynam, 2006; Gershoff, 2002; McCord, 1997; Patterson, 1982, 1995). Cumulatively, that body of research that encompasses both longitudinal and experimental work (e.g., Hinshaw et al., 2000) indicates that harsh parenting is one of the causal factors that lead to the development of antisocial behavior problems. Those broadly-ranging behavior problems include defiance, noncompliance, disruptive, destructive, and aggressive acts, callous, remorseless, and unempathic conduct, delinquency, and other behaviors that – if sufficiently frequent or severe – meet the clinical criteria for oppositional defiant disorder, ODD, conduct disorder, CD, or, later, antisocial personality disorder, APD (Frick & Morris, 2004; Frick & White, 2008).

Consensus has also been growing about the preventive role of positive parenting in the development of children's antisocial and disruptive behavior. Absent or impoverished parental warmth, positive affect, responsiveness, and nurturance have been associated with increased risk for antisocial outcomes. Warm, responsive, and positive parenting has been seen as an important protective factor, perhaps because children in such positive relationships are receptive to parental socialization messages and eager to embrace parental values and standards of conduct (Criss, Shaw, & Ingoldsby, 2003; Grusec & Goodnow,

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1994; Kochanska, 2002; Kochanska, Barry, Aksan, & Boldt, in press; Laible & Thompson, 2000; Shaw, 2003; Shaw, Owens, Giovannelli, & Winslow, 2001).

One such positive socialization force, secure attachment, has been broadly associated with adaptive development, whereas insecurity has been often seen as a risk factor for antisocial and disruptive behavior problems (Bretherton, Golby, & Cho, 1997; Shaw & Bell, 1993; Shaw & Vondra, 1995; Thompson, 2006; van IJzendoorn, 1997; Waters, Kondo-Ikemura, Posada, & Richters, 1990). Rarely, however, has attachment been considered as a potential substantial *moderator* of the above-described cycle of mutual parent-child coercion that leads to the child's future antisocial outcomes. We propose a model that integrates early attachment, parental assertive discipline, the child's resentful opposition, and antisocial outcomes.

Attachment organization reflects the quality of the parent-child relationship, as that relationship coalesces by the end of the first year. The early relationship quality can then substantially moderate future dynamics of parent-child coercion and the resulting children's antisocial outcomes. We propose a moderated mediation view that assumes *different mechanisms leading to children's antisocial outcomes in dyads that had formed insecure versus secure attachment.*

Specifically, in parent-child dyads that fail to form a secure early attachment by the end of the first year, parental power assertion at toddler age launches a dysfunctional cycle: Children become resentful and oppositional toward the parents at early preschool age, and this resentful opposition, in turn, leads to disruptive, antisocial, callous, and aggressive conduct pattern. An insecure parent-child dyad embarks on a maladaptive reciprocal cycle of parental coercion and child opposition that heightens the risk of child antisocial and disruptive outcomes. Those dynamics are consistent with the established developmental scenario that links coercion, defiance, and antisocial behavior problems.

In contrast, in dyads that have established a secure attachment by the end of the first year, the unfolding developmental dynamics may be different. Secure attachment may serve to buffer, defuse, weaken, or eliminate the links among parental power assertion, the child's resentful opposition, and the child's antisocial outcomes. Because of the child's fundamental trust in the parent and a comfortable reciprocal bond that permeates the relationship, the child does not necessarily view the parent's power assertion as threatening and adversarial. Consequently, he or she does not respond with hostility, resentment, and opposition.

In sum, in this study, we propose that the child's resentful opposition serves as a mechanism, or mediator, that accounts for links between parental power assertion and child future antisocial behavior. We further propose that the early history of the parent-child relationship, reflected in the child's attachment organization, moderates this mediational chain.

Although to our knowledge such a model has not yet been tested, both the mediation and moderation components of the model are consistent with extant theories and evidence. Many scholars have seen the child's anger, arousal, negativity, resentment, and counter-aggression, and the ensuing parent-child coercion, conflict, and the erosion of the relationship as *mediating* the links between parental harsh discipline and children's future externalizing or antisocial behavior problems (Graziano, Hamblen, Plante, 1996; Hoffman, 1983; see also the extensive review by Gershoff, 2002).

As well, both classic and contemporary research has supported the notion that the relationship context and the ecology of development may *moderate* the effects of parental power assertion (Darling & Steinberg, 1993; Deater-Deckard & Dodge, 1997; McCord,

1997). Parke (1969) demonstrated that punishment by a nurturant agent was more effective than that coming from an aloof agent. Baumrind (1971) argued that in the context of a nurturant relationship, parental firm use of power has no deleterious effects; on the contrary, it leads to children's competence. Campbell (1990) reported that physical punishment leads to children's antisocial behavior only in the absence of parental warmth and caring attitude. Deater-Deckard, Ivy, and Petrill (2006) found that harsh discipline is associated with future antisocial outcomes only in children whose parents lack in warmth. Similarly, parental power assertion does not lead to negative child outcomes in cultural contexts where children do not perceive it as conveying a hostile or negative message (Chao, 1994; Deater-Deckard, Dodge, Bates, & Pettit, 1996).

To our knowledge, only a few research programs have examined specifically attachment security as a moderator of the effects of power assertion. Allen, Moore, Kuperminc, & Bell (1998) found that high maternal control was associated with more externalizing behavior problems for insecure, but not secure adolescents. That study, however, was not longitudinal, it focused on adolescents, included only mothers, and assessed parental control using mothers' self-reports. Consequently, it could not provide insights into individual trajectories of development from infancy to kindergarten age and on the role of fathers, using extensive observational data on parental discipline in naturalistic situations. We address these goals in the current article.

In an earlier longitudinal sample, we focused on attachment in infancy, adaptive (gentle and responsive) parenting observed over the next two and a half years, and children's moral development (following rules, view of self as moral, prosocial choices in hypothetical dilemmas) at age 5 (Kochanska, Aksan, Knaack, & Rhines, 2004). We found that adaptive parenting was more effective for secure children, and we interpreted those findings as indicating that early security provides a "boost" for future parenting by presumably rendering children receptive to the parent's socialization influence, which in turn leads to more successful outcomes. The focus of that study was on adaptive parenting and adaptive outcomes; no measure of the presumed mediator was obtained; and only mothers and children were studied.

The current study originates from a similar conceptual framework and approach to socialization. However, besides replicating some of the findings in a new longitudinal sample (critically important for advancing developmental science, particularly when it comes to interaction effects, Rutter, 1983), it expands the earlier work in multiple respects. We now focus on the maladaptive pathway, more relevant for translational research: from parental power assertion, to child resentful opposition, to antisocial, disruptive, aggressive conduct problems. These outcomes are assessed using multi-faceted, well-established parent-report instruments, including a DSM-compatible measure. We test the complete model, including both the mediator and moderator, in a multi-method multi-trait longitudinal investigation that involves a larger sample followed from infancy to 67 months. We adopt a more advanced statistical approach. Finally, this study examines both mother-child and father-child relationships. The empirical base of socialization research that includes observational longitudinal data on the child and on both parents remains thin.

Method

Participants

Two-parent families of normally developing infants responded to ads in multiple community media. They represented a broad range of income and education. In terms of race, 90% of mothers were White, 3% Hispanic, 2% African American, 1% Asian, 1% Pacific Islander, and 3% "other" non-White. Among fathers, 84% were White, 8% Hispanic, 3% African

American, 3% Asian, and 2% "other". In 20% of families, one or both parents were non-White.

Parents and children were followed from the time that the children were aged 7 months. This article utilizes data from the assessments at 15 months (N = 101, 51 girls), 25 months (N = 100, 50 girls), 38 months (N = 100, 50 girls), 52 months (N = 99, 49 girls), and 67 months (N = 92, 45 girls). At each assessment, there were two laboratory sessions, one with each parent (at 38 months there was one home and one laboratory session, with each parent taking part in half of each session). The sessions, conducted by female visit coordinators, lasted 2–3 hours and were videotaped for future coding. The order (mother vs. father) was randomized.

Children's attachment security with mothers and fathers was assessed at 15 months. Parents' power assertion in discipline contexts was assessed at the beginning and end of the third year (at 25 and 38 months). Children's resentful opposition to the parents was observed at 52 months, and their antisocial and disruptive behavior was rated by both parents at 67 months.

Attachment security was coded by professional attachment coders at another university. All other observed constructs were coded by multiple coding teams. At least 20% of cases were used for reliability, followed by "realignments" to prevent drift. Variables were substantially aggregated across coded segments, contexts, and occasions of measurements to yield robust final constructs.

Children's Attachment Security, 15 Months

The standard Strange Situation was the first paradigm during the laboratory session. Coding *reliability*, kappas, were .78 for the four main attachment categories (avoidant, A, secure, B, resistant, C, and disorganized/unclassifiable, D/U), and .85 for the coding of secure versus insecure attachment. All cases coded with low confidence by one coder and all D/U cases were double-coded and adjudicated.

Additionally, the coders assigned the continuous disorganization rating (1–9, Main & Solomon, 1990); reliability, alpha = .83. Children's scores with mothers, M = 2.15, SD = 1.97, range 1–8, and with fathers, M = 1.81, SD = 1.67, range 1–7, were unrelated, $r(99)$ = .13.

With respect to mother-child attachment, there were 56 secure (B) and 45 insecure children (12 A, 19 C, and 14 D/U). With respect to father-child attachment, there were 66 secure (B) and 34 insecure children (15 A, 6 C, and 13 D/U; parents of one child who was upset during the paradigm with the mother did not wish to participate in the father-child Strange Situation). There were no significant differences in the distribution of security versus insecurity in girls and boys with mothers, Pearson Chi-square (1) = 2.22, ns, or fathers, Pearson Chi-square (1) < 1. The organization of the child's attachment with the mother was unrelated to that with the father, whether considered as secure vs. insecure, Pearson Chi-square (1) = 1.67, ns, or using all four categories, A, B, C, and D/U; Pearson Chi-square (9) = 10.37, ns.

Mothers' and Fathers' Power Assertion in Discipline Contexts, 25 and 38 Months

Coded contexts—Parental power assertion was coded in "Do" and "Don't" discipline contexts. In the "Do" contexts, the parent asked the child to place the toys in a basket after play. In the "Don't" contexts, the parent asked the child not to touch attractive toys placed on a low shelf in the laboratory during naturalistic situations (e.g., snack, parent busy, free time, with the off-limits toys easily accessible). At 25 months, there was a 10 min toy

cleanup and a 37 min prohibited toys context (total 47 min with each parent), and at 38 months, a home and a lab toy cleanups, cumulatively 15 min, and 27 min of prohibited toys contexts (total 42 min with each parent).

Coding—The parent's control was coded for each 30s segment. For each segment, two kinds of codes were used: a *global rating* of parental control style (one code given to a coded segment) and the coding of all *physical interventions* used (more than one could be coded in one segment). The global ratings included: *no intervention, ignores; sociable interaction but no control; gentle guidance* (parent hints, suggests); *assertive control* (parent controls in an assertive, firm manner, uses direct commands and prohibitions, "no!", "do not play now", "these are only to look at"); and *forceful control* (resorts to power assertion, threats, negative, angry control, commands or prohibitions delivered in a raised or irritated voice, threats, and negatives, "stop this minute!", "clean up or no pool today", "what did I tell you?", "will you listen!").

The physical interventions included *assertive physical control* (any firm interventions that involved a clash of will, holding the child's hand down, taking a toy from the child's hand, blocking the child's access to toys), and *forceful physical control* (any physical intervention delivered with anger or irritation on the part of the parent, coercion, roughly removing a toy from the child's hand, turning the child around abruptly, a light slap). Kappas were as follows: For the global ratings, .79 to .94, for the physical interventions, .75 to 1.00, with the exception of forceful physical control, coded by consensus because it was rare. For details of coding, see description of another study (Kochanska, Coy, & Murray, 2001).

Data aggregation—We created power assertion composites. First, for each "Do" and "Don't" context, we counted and tallied all instances of all the codes, and divided each tally by the number of coded segments (respectively, in the "Do" and "Don't" context), averaged across home and lab (at 38 months). Then we created a summed power assertion scores, one for "Do" and one for "Don't" contexts. Before summing, the codes were weighted to reflect the intensity of power assertion: *no intervention, ignore* by −2, *sociable interaction but no control* by −1, *gentle guidance* by 1, *assertive control* by 2, *forceful control* by 3, *assertive physical* by 4, and *forceful physical* by 5. Those "Do" and "Don't" summed weighted scores were standardized, and averaged, creating one score of *power assertion* for each parent at 25 and 38 months, across "Do" and "Don't" contexts. The 25- and 38-month scores correlated, for mothers, $r(99) = .42$, and for fathers, $r(99) = .49$, both p's $< .001$, and they were aggregated into one composite score of power assertion across the third year, for mothers, $M = .00$, $SD = .64$, range – 1.44 – 2.48, and for fathers, $M = .00$, $SD = .68$, range – 1.53 – 2.33.

Children's Resentful Opposition, 52 Months

Children's defiance—Defiance directed at the parent was coded during the discipline encounters in both "Do" contexts (10 min with each parent) and "Don't" contexts (65 min with each parent). Defiance was defined as the child's noncompliance to the parent's directive (request to clean up or prohibition to touch) accompanied by angry, aversive affect, whining, tantrum, throwing toys, struggling physically against the parent, etc. Kappas were .66 to .85 (including other behaviors, not considered here).

The instances of defiance were tallied and divided by the number of coded episodes (total of 75 min with each parent); for children and mothers, "Do", $M = .02$, $SD = .05$, range 0–20, and "Don't", $M = .01$, $SD = .04$, range 0–.31, for children and fathers, *"Do"*, $M = .02$, $SD = .08$, range 0–.60, and "Don't", $M = .01$, $SD = .04$, range 0–.28. The scores correlated across those contexts, r's .38 and .67, df = 98, p's <.001, for children with mothers and fathers, respectively, and thus were standardized and averaged across the contexts

Children's negative emotional tone in interactions with parents—Children's negative affect was coded during naturalistic interactions (e.g., play, free time, snack, 65 minutes with each parent). For each 30-sec segment, coders made a judgment based on the child's facial, vocal, and bodily expression of negative affect. Discrete negative emotions included "full-blown" expressions, such as anger, irritation, distress, sadness. The discrete emotions that were intense or pervasive (longer than 15 s) were marked. Neutral negative mood was coded when the child was in a negatively "tinged" mood, but short of displaying a "full-blown" emotion (e.g., bored, fatigued, dull-eyed, listless, out of sorts). Kappas ranged from .74 to .83. We then weighted the instances of the child's negative emotions that were intense or pervasive by 3, of the discrete negative emotions by 2, and of neutral negative mood by 1, and then we added those figures, and divided the sum by the number of coded segments to create a score of *the child's negative emotional tone in the interactions with each parent (*analogous to Kochanska, Aksan, Penney, & Doobay, 2007); for children with mothers, M = .06, SD = .08, range 0–.37, for children with fathers, M = .07, SD = .13, range 0–.93).

Children's unresponsiveness to parents—This measure was obtained by *reversing* the scores of the child's responsiveness to parents, coded also during the 65 min of naturalistic interactions with each parent. For each context (e.g., snack, parent busy, play), the child's responsiveness was coded from 1 (highly unresponsive) to 7 (highly responsive). The judgments integrated child positive attention and orientation toward the parent, sensitivity to parental cues, promptness of response, enjoyment of interaction, etc. Kappas ranged from .75 to .91. The scores cohered across the observed contexts, Cronbach's alphas .68 and .72 for mothers and fathers, respectively, and they were averaged across those contexts (for each parent). The means (before reversing) were, for children to mothers, M = 5.07, SD = .55, range 2.67–5.83, for children to fathers, M = 4.79, SD = .69, range 2.17–5.83.

Composite of children's resentful opposition—The three scores – defiance, negative emotional tone, and unresponsiveness – were inter-correlated (average inter-item correlation was .51 for children and mothers, and .60 for children and fathers), and thus they were standardized and aggregated into a composite of the child's resentful opposition with each parent; for children with mothers, M = .00, SD = .77, range −.94 – 3.18, for children and fathers, M = .00, SD = .83, range −.77 – 4.92).

Children's Antisocial Disruptive Behavior Problems, 67 Months

Mothers and fathers rated the child using three established instruments.

Child Symptom Inventory-4 (CSI-4)—CSI-4 (Gadow & Sprafkin, 2002; Gadow, Sprafkin, & Nolan, 2001; Sprafkin, Gadow, Salisbury, Schneider, & Loney, 2002) has been designed to correspond to DSM-IV. Using Symptom Severity scoring, where each item is rated from 0 (never) to 3 (very often), we obtained the scores for ODD (mothers, M = 6.99, SD = 3.76, range 0–24, fathers, M = 6.29, SD = 3.21, range 0–17) and CD (mothers, M = 1.37, SD = 2.18, range 0–11, fathers, M = 1.04, SD = 1.70, range 0–12).

Inventory of Callous-Unemotional Traits (ICU)—ICU (Frick, 2003; Frick, Bodin, & Barry, 2000; Frick & White, 2008) captures absence of guilt and empathy, and lack of concern about rules and standards of behavior. We computed the means of all 24 items: mothers, alpha = .84, M = .80, SD = .32, range .13–1.63, fathers, alpha = .87, M = .80, SD = .32, range .13–1.63.

Macarthur Health Behavior Questionnaire (HBQ)—HBQ (Boyce et al., 2002; Essex et al., 2002) assesses multiple dimensions of children's problems and competence. We averaged across four items that pertain to child overt aggression, each rated from 1 (never) to 3 (often); for mothers, alpha = .64, *M* = 1.35, *SD* = .35, range 1.00–2.50, for fathers, alpha = .55, *M* = 1.33, *SD* = .30, range 1.00–2.50.

Composite of antisocial and disruptive behavior—For each parent, the four scores (ODD, CD, ICU, and HBQ overt aggression) were standardized and aggregated into an antisocial or disruptive behavior score, given that they were inter-correlated (average inter-item correlation for mothers, .46, for fathers, .39; mothers, *M* = .00, SD = .77, range −1.40 – 2.52, fathers, *M* = .00, *SD* = .73, range −1.35 – 4.00). The mother's and the father's scores were also correlated, $r(88) = .46$, $p < .001$, and they were further averaged into the overall *composite of antisocial and disruptive behavior*, *M* = .01, *SD* = .66, range −1.03 – 2.94.

Results

Preliminary Analyses

Effects of children's security and gender on parental power assertion and children's antisocial and disruptive behavior—ANOVAs were conducted for the main measures -- parental power assertion and the ratings of child antisocial and disruptive behavior -- with child attachment security and gender as the between-subject factors. For *maternal use of power at 25–38 months*, there was no effect of security; mothers used more power with boys than with girls, $F(1,96) = 8.79$, $p < .01$, boys *M* = .20, *SD* = .71, girls *M* = −.20, *SD* = .49. For *paternal use of power at 25–38 months*, there was again no effect of security, and the parallel gender effect was marginal.

For *children's resentful opposition to mothers at 52 months*, early security had a significant effect, $F(1,94) = 5.57$, $p < .05$. Children who had been insecure showed more resentful opposition, *M* = .21, *SD* = .93, than those who had been secure, *M* = −.17, *SD* = .56. There was no effect of child gender. For *children's resentful opposition to fathers at 52 months*, there were no significant effects of security or gender.

For *parental ratings of children's antisocial disruptive behavior problem at 67 months*, there were no effects of early security with either parent. Parents saw boys as showing more antisocial and disruptive behavior problems than girls, a typical finding (Gadow & Sprafkin, 2002): boys, *M* = .20, *SD* = .80, girls, *M* = −.20, *SD* = .40, $t(90) = -3.00$, $p < .01$.

Associations among the measures—For the *entire sample*, parental power, the child's resentful opposition and his or her antisocial and disruptive behavior were all significantly, moderately, and positively inter-correlated (*r*'s ranged from .37 to .49, all *p*'s < .001). The measures of parental power and child resentful opposition were also inter-correlated across mother- and father-child relationships (*r*'s ranged from .51 to .54, all *p*'s < .001).

The correlations, however, were strikingly different when examined separately for children who had been insecure versus secure with each parent. Those are presented in Table 1.

For the children who had been *insecure with their mothers*, all 10 correlations, within one relationship (mother-child, father-child) and across the relationships were significant and robust. They ranged from .47 to .78. But for the children who had been *secure with their mothers*, only two correlations were significant (between paternal power assertion and child resentful opposition to the father, and for child resentful opposition across the two parents).

For the children who had been *insecure with their fathers*, again all 10 correlations were significant and robust, ranging from .44 to .68. For the children who had been *secure with their fathers*, the pattern was less clear than that for children who had been secure with their mothers. Five correlations were significant: for parental power and child resentful opposition across the two parents, maternal power and child opposition to the father, paternal power and child opposition to the father, and paternal power and child antisocial and disruptive behavior.

Parental Power Assertion at 25–38 Months, Child Resentful Opposition at 52 Months, and Child Antisocial and Disruptive Behavior at 67 Months: Mediation Moderated by Security

In the analyses, we followed the procedures recommended by Preacher, Rucker, and Hayes (2007) for testing moderated mediation with bootstrapped tests of the indirect effects. Because we examined the effects of a single moderator (i.e., child security of attachment) on the mediation model, we tested the potential moderation of (1) the link between the predictor (parental power assertion, 25–38 months), and the mediator (child resentful opposition, 52 months), (2) the link between the mediator (child resentful opposition), and the outcome (child antisocial and disruptive behavior, 67 months), and finally, (3) the link between the predictor (power assertion), and the outcome (antisocial and disruptive behavior). The analyses were conducted for mother-child and father-child dyads. Child gender was specified as a covariate.

Mother-child dyads—Although our adopted moderated mediation testing approach (Preacher et al., 2007) performs the steps described below simultaneously, we describe them consecutively for the sake of clarity. The model is depicted in Figure 1. Because the link (2) between the mediator and the outcome was not significantly moderated by child security with the mother, in the final testing, the interaction effect of security with the mediator was not included in the model.

First, we examined the effect of the predictor (maternal power assertion), the moderator (child security of attachment), and their interaction, on the outcome (child antisocial and disruptive behavior), see paths c_1, c_2 and c_3 in Figure 1. Maternal power assertion (b = .39, SE = .11), and the interaction term (b = −.13, SE = .06) significantly predicted the outcome. The tests of the simple slopes (Aiken & West, 1991) indicated that the effect of power assertion on child future antisocial behavior was significant for insecure children (b = .29, SE = .08, $p < .01$), but not for secure children (b = .06, SE = .11, ns).

Second, we examined the effect of the predictor (maternal power), the moderator (child security of attachment), and their interaction, on the mediator (child resentful opposition), see paths a_1, a_2 and a_3 in Figure 1. Maternal power assertion (b = 1.59, SE = .38, $p < .01$) and the interaction term (b = −.74, SE = .24, $p < .01$) significantly predicted the mediator. Again, tests of the simple slopes (Aiken & West, 1991) indicated that the effect of maternal power on child future resentful opposition to the mother was significant for insecure children (b = .40, SE = .10, $p < .01$), but not for secure children (b = .00, SE = .24, ns).

Third, we examined the effect of the mediator (child resentful opposition), on the outcome (child antisocial behavior), path b_1 in Figure 1, with the predictor (maternal power), the moderator (child security of attachment), and their interaction controlled. This step tested the anticipated drop in the effect of the predictor on the outcome (path c_1', as compared to path c_1). The mediator (child resentful opposition), was the only significant predictor (b = .20, SE = .09, $p < .05$). The effects of maternal power assertion, child security of attachment, and their interaction were no longer significant (b = .71, SE = .36; b = .09, SE = .13; and b = −.27, SE = .22 respectively, all ns).

Fourth, we tested the overall indirect effect of maternal power on child antisocial behavior in insecure and secure children. We employed the bootstrapping syntax for SPSS (Preacher et al., 2007). The indirect effect of maternal power was significant for insecure children (b = .17, SE = .07, $p < .05$), but not for secure children (b = .02, SE = .04, ns).

In sum, for mother-child dyads, the results supported our moderated mediation hypothesis. The proposed mediational chain -- from maternal power assertion at 25–38 months to child resentful opposition at 52 months to child antisocial and disruptive behavior at 67 months – was indeed present in mother-child dyads where children had been insecurely attached at 15 months. We failed to find evidence of such a chain for the dyads where children had been secure.

Father-child dyads—We followed the same approach to test the moderated mediation hypothesis in father-child dyads. The model is depicted in Figure 2. Because only the link (2) between the mediator and the outcome was significantly moderated by child security with the father, in the final testing of this model, only the interaction effect of security with the mediator was included in the model.

First, we examined the effect of the predictor (paternal power assertion, 25–38 months) on the outcome (child antisocial and disruptive behavior, 67 months) see path c_1 in Figure 2. Paternal power assertion (b = .40, SE = .09) significantly predicted the outcome ($p < .01$).

Second, we examined the effect of the predictor (paternal power) on the mediator (child resentful opposition, 52 months); see path a_1 in Figure 2. Paternal power assertion (b = .58, SE = .12, $p < .01$) significantly predicted the mediator.

Third, we examined the effect of the mediator (child resentful opposition), and the moderator (child security of attachment, 15 months), and their interaction, on the outcome (child antisocial behavior). Those are, respectively, paths b_1, b_2 and b_3 in Figure 2, with the predictor (paternal power) controlled. This step tested the anticipated drop in the effect of the predictor on the outcome (path c_1', as compared to path c_1). The mediator (child resentful opposition; b = 1.0, SE = .24, p < .01), the interaction of the mediator with child security of attachment (b = −.47, SE = .14, p < .01) and the predictor (paternal power; b = .24, SE = .10, p < .05) all significantly predicted the outcome. Tests of the simple slopes (Aiken & West, 1991) indicated that the effect of the child's resentful opposition at 52 months on the child's antisocial and disruptive behavior at 67 months was significant for insecure children (b = .30, SE = .09, $p < .05$), but not for secure children (b = .06, SE = .10, ns).

Fourth, we tested the overall indirect effect of paternal power on child antisocial behavior in insecure and secure children. Once again, we employed the bootstrapping syntax for SPSS (Preacher et al., 2007). The indirect effect of paternal power was significant for insecure children (b = .30, SE = .15, $p < .05$), but not for secure children (b = .08, SE = .14, ns). However, because the predictor remained significantly associated with the outcome, the results support partial and not full moderated mediation.

In sum, for father-child dyads, the results provided support for our moderated mediation hypothesis. The proposed mediational chain -- from paternal power assertion at 25–38 months to child resentful opposition at 52 months to child antisocial and disruptive behavior at 67 months – was partially supported in father-child dyads where children had been insecurely attached at 15 months. We failed to find evidence of that chain for the dyads where children had been secure. Nevertheless, child resentful opposition did not fully

mediate the link between paternal power and child antisocial behavior, nor was that link moderated by child security of attachment in father-child dyads.

Complementary analyses controlling for additional covariates—Additional analyses were conducted using available parallel measures from earlier assessments, all obtained and coded in analogous paradigms: parental power assertion and child resentful opposition, both at 15 months, and child resentful opposition averaged across 25 and 38 months. The findings were by and large unchanged: For insecure children, resentful opposition at 52 months mediated the link between mothers' and fathers' power assertion at 25–38 months and children's antisocial behavior at 67 months as evidenced by a significant indirect effect (mother-child dyads, $b = .18$, $SE = .08$; father-child dyads, $b = .30$, $SE = .15$, $p < .05$). There was no support for such a mediational chain in secure children (mother-child dyads, $b = .02$, $SE = .04$; father-child dyads, $b = .08$, $SE = .14$, *ns*).

Exploratory analyses for children representing different types of insecurity—Due to small *n*s, moderated mediation analyses could not be performed using the more differentiated insecure attachment subgroups (avoidant, A, resistant, C, and disorganized, D/U). However, we examined correlations among the studied variables (analogous to Table 1) in those groups for frankly exploratory purposes.

The directions of the correlations in all three insecure groups were, by and large, consistent with the correlations reported in Table 1 for all insecure children, but their magnitudes were most striking in the D/U groups. For the children with disorganized attachment to mothers, the correlations among parental power, child resentful opposition, and child antisocial, disruptive conduct problems ranged from .72 to .91 (average .80); for the children with disorganized attachment to fathers, the correlations ranged from .56 to .89 (average .74).

To explore those intriguing findings further, we conducted two regressions for each parent, using the whole sample, employing the continuous D rating as a moderator of power assertion and of child resentful opposition (recall that every child received that rating). In the first regression, the child's resentful opposition at 52 months was the outcome; child gender, parental power assertion at 25–38, and the interaction term -- power assertion x D rating -- were the predictors. In the second regression, the child's antisocial, disruptive behavior score at 67 months was the outcome; child gender, the child's resentful opposition at 52 months, and the interaction -- resentful opposition x D rating -- were the predictors. For both parents, both equations with all predictors entered revealed that the D rating significantly moderated the effect of parental power assertion on child resentful opposition, with mothers, $F(92) = 13.96$, *Beta* = .35, $p < .001$; with fathers, $F(92) = 5.42$, *Beta* = .21, $p < .025$, and that it significantly moderated the effect of child resentful opposition on antisocial problems, with mothers, $F(85) = 6.96$, *Beta* = .26, $p < .01$; with fathers, $F(85) = 13.51$, *Beta* = .35, $p < .001$.

Discussion

This research enhances our understanding of the origins and developmental dynamics of antisocial and disruptive behavior in childhood. We consider the child's antisocial trajectory as unfolding in and influenced by the context of the parent-child relationship. We trace the quality of that relationship to the first year of life. Our findings inform basic research on attachment, parenting, and developmental psychopathology, and have implications for intervention and prevention. Additionally, the findings enrich the notoriously thin body of research on father-child socialization.

Although the major focus of this research was on the *differences in the relations* among parental power, child resentful opposition, and child antisocial behavior in insecure and secure children, the main effects of security were also explored. Surprisingly, those analyses failed to produce several theoretically expected main effects. Children who had been insecure or secure at the end of the first year did not differ in antisocial and disruptive behavior problems at early school or kindergarten or age, either teacher- or parent-reported, and their parents did not differ in power assertion at toddler age. One theoretically expected main effect did emerge: Children who as infants had been insecure with their mothers, as toddlers were more resentful and oppositional toward the mothers than those who had been secure, consistent with the views that early security has beneficial effects for the future parent-child relationship (see Thompson, 2006, for review). Future research with larger groups of secure, avoidant, resistant, and disorganized children might reveal and elucidate differences in parental discipline and children's antisocial and disruptive behaviors.

The core findings of this study concern *different mechanisms* leading to children's antisocial trajectories in insecure and secure mother-child dyads. By and large, the fundamental findings were similar across mother-child and father-child relationships, despite the fact that the child's attachment organization was not significantly concordant across parents. The findings complement the growing body of research showing that detrimental effects of parental power assertion depend on additional ecological and relationship factors.

Generally speaking, early security appeared to have a significant and lasting effect on the parent-child relationship context. In the post-infancy years, early insecurity acted as a catalyst for mutual parent-child coercion that in turn led to antisocial child outcomes. The diminished parent-child trust and sub-optimal organization of the affectional bond, reflected in early insecurity, served as a fertile "breeding ground" for the parent-child mutually coercive cycle. This is consistent with the documented striking absence of early positivity in families where children are at risk for antisocial trajectories (Patterson, DeBaryshe, & Ramsey, 1989). By contrast, early security served to defuse the cycle of parental coercion, child opposition, and future child antisocial outcomes.

How best to interpret these findings? The child's perception of parental exercise of power may play the key role. Insecure children may perceive parental power as hostile, malevolent, and threatening, and consequently, they respond with anger, resentment, opposition, and ultimately, the rejection of the parental message. By contrast, secure children may perceive parental power as well intentioned and benevolent (Bugental & Grusec, 2006; Holden, 2002).

In this context, recall that our findings suggest that security *by itself* does not serve as a protective factor against antisocial and disruptive behavior problems; the findings only imply that security defuses parent-child coercion and resentment as one pathway to antisocial behavior. Consequently, mechanisms other than mutual coercion likely lead to antisocial problems in secure children.

Although the main goal of our approach was to test moderated mediation in secure vs. insecure children, in frankly exploratory analyses we examined the studied relations in children differing in the type of insecurity. Those analyses suggest that attachment disorganization may play a particularly important role as a catalyst for the maladaptive cycle of parental power assertion, child resentment, and child antisocial trajectory. Future research should examine these preliminary possibilities in larger samples. It is possible that frightening qualities of the parent, often discussed in research on disorganization, are associated with extremely harsh parenting. In our study, however, power assertion scores for

either parent were not significantly different across the four attachment groups, or significantly correlated with the D rating.

Several characteristics of the current samples limit the generalizability of the results. The participants were low-risk, community families, where power assertion was generally low. Typical strategies coded as power assertive included mildly forceful tactics, and they rarely, if ever, escalated to harsh physical punishment or threats. Future research that includes families at higher risk, where power assertion is more robustly distributed and includes higher-intensity tactics, is likely to yield more robust findings.

Children's antisocial problems were also generally infrequent (although their rates were consistent with those observed more generally in the US population, APA, Diagnostic and Statistical Manual of Mental Disorders, DSM-IV-TR, 2000). For example, according to mothers' reports in CSI-4, based on the Symptom Count approach, 8% of children met the criteria for ODD and 7% met the criteria for CD. The parallel figures for fathers' reports were 5% and 2%. The continuous severity scores, however, were relatively well distributed. Again, research with higher-risk families and children may yield stronger findings. Given the substantial psychological and social burdens of antisocial and disruptive disorders, such future research efforts are worthwhile.

Finally, given the non-experimental nature of the design, alternative interpretations of the direction of effects are also possible. Certain qualities of the parent and the infant can make it more likely that the dyad will form an adversarial relationship in the first year and progress to mutual coercion and hostility. In such dyads, insecure attachment, parental power assertion, child resentment, and child antisocial conduct problems can all be attributed to a quality of an individual, for example, an infant's difficult temperament (Bell, 1968; Lytton, 1990) or a parent's antisocial personality. Shared genetic vulnerabilities may further complicate the causal chain.

The current findings and approach have implications for translational research with respect to conduct problems. There is growing interest in "positive socialization forces" that may prevent antisocial trajectories (Shaw, 2003; Shaw et al., 2001). Many parenting interventions for mothers of children with conduct problems focus on enhancing responsiveness and positivity toward the child (Brinkmeyer & Eyberg, 2003; McMahon & Forehand, 2003; Webster-Stratton, 1998). Those interventions have been effective even for children at high risk (Chronis et al., 2007). Given that early parental responsiveness promotes child security and trust in the parent, the current findings may provide one window into the mechanisms that may account for the effectiveness of such treatments.

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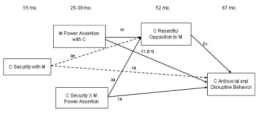

Figure 1. The Moderated Mediation Model for Mother-Child Dyads

Although not depicted in the model, child gender was a covariate.
Child age at each assessment is depicted above the variables at each time point.
M = Mother, C = Child, mo. = months

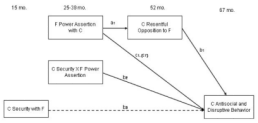

Figure 2. The Moderated Mediation Model for Father-Child Dyads

Although not depicted in the model, child gender was a covariate.

Child age at each assessment is depicted above the variables at each time point.

F = Father, C = Child, mo. = months

Solid lines represent significant effects, dashed lines represent non-significant effects.

Table 1

Correlations among All Measures by the Child's Attachment Security (Insecure vs. Secure) at 15 Months, Study 2

Parental Power Assertion 25–38 Months		Child Resentful Opposition 52 Months		Child Antisocial/Disruptive Behavior, 67 Months
Mother	**Father**	**to Mother**	**to Father**	
		Insecure with Mother at 15 Months		
Parental Power, 25–38 Months				
Mother --	.78****	.59****	.67****	.55****
Father	--	.48****	.60****	.54****
Child Resentful Opposition, 52 Months				
To Mother		--	.56****	.47***
To Father			--	.52****
		Secure with Mother at 15 Months		
Parental Power, 25–38 Months				
Mother --	.25+	.12	−.02	.21
Father	--	.12	.28*	.18
Child Resentful Opposition, 52 Months				
To Mother		--	.29*	.26+
To Father			--	.28+
		Insecure with Father at 15 Months		
Parental Power, 25–38 Months				
Mother --	.64****	.66****	.57****	.66****
Father	--	.61****	.63****	.44**
Child Resentful Opposition, 52 Months				
To Mother		--	.68****	.55***
To Father			--	.64****
		Secure with Father at 15 Months		
Parental Power, 25–38 Months				
Mother --	.47****	.18	.29**	.11
Father	--	.16	.35***	.29*
Child Resentful Opposition, 52 Months				
To Mother		--	.34***	.16
To Father			--	.19

+ $p < .10$.

* $p < .05$.

** $p < .025$.

*** $p < .01$.

**** $p < .001$.