

Infant Attachment Moderates Paths From Early Negativity to Preadolescent Outcomes for Children and Parents

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Although infant attachment has been long seen as key for development, its long-term effects may be complex. Attachment may be a catalyst or moderator of future developmental sequelae rather than a source of main effects. In 102 mothers, fathers, and infants, attachment was assessed at 15 months; children's negativity (rejection of parental rules and modeling attempts) at 25, 38, 52, and 67 months; and developmental outcomes (the child's parent-rated externalizing problems and the parent-child observed relationship quality) at ages 10 and 12. In both mother-child and father-child relationships, children's higher negativity was associated with more detrimental outcomes but only in dyads with formerly insecure infants. Infant insecurity appears to amplify detrimental cascades, whereas infant security appears to defuse such risks.

Ever since Bowlby (1969/1982) first proposed his seminal theory of human attachment, a wealth of evidence has documented higher risks for poor developmental outcomes in children who have failed to develop secure attachments with their caregivers during infancy and early development (e.g., Belsky & Nezworski, 1988; DeKlyen & Greenberg, 2008; Fearon & Belsky, 2011; Kobak, Cassidy, Lyons-Ruth, & Ziv, 2006; Sroufe, Carlson, Levy, & Egeland, 1999), although the findings have not been uniform (Thompson, 2006). Increasingly, however, researchers have recognized that long-term implications of the infant attachment organization for future development may involve complex processes and pathways rather than simple main effects (DeKlyen & Greenberg, 2008; Greenberg, Speltz, & DeKlyen, 1993; Kochanska & Kim, 2012; Sroufe, 2005; Sroufe et al., 1999; Waters, Posada, Crowell, & Lay, 1993). Most likely, early attachment serves an important conditional or probabilistic role by influencing complex mediation and moderation effects that change the dynamics of future developmental cascades. The need to study such "hidden" or indirect effects of early attachment has been

repeatedly stressed (Cox, Mills-Koonce, Propper, & Gariépy, 2010; Fearon & Belsky, 2011; Kuczynski & De Mol, 2015; Masten & Cicchetti, 2010; Sroufe, 2005; Sroufe et al., 1999; Thompson, 2008, 2015). Recent research, including that in our laboratory, has elucidated some of those complex effects.

To understand how early security or insecurity sets in motion multiple and complex future pathways, our team has adopted a broader view of early attachment that goes beyond its narrow view as a proximity-regulating system that provides the child with confidence in protection and helps manage threat, stress, and distress at the behavioral and physiological levels (Goldberg, Grusec, & Jenkins, 1999). In a broader view, early attachment also plays a key role in inaugurating the parent-child mutual orientation that serves a critical role as an early context underpinning future socialization dynamics. Even though early attachment organization may not have many lasting direct, main effects, or those effects may be modest (Thompson, 2006), it may nevertheless serve as a potent catalyst that alters future parent-child cascades. Although, as in most attachment research, the existing data are largely correlational and cannot be interpreted as evidence of causal pathways, our team has argued that *early insecurity* becomes a context conducive to the evolving adversarial and mutually coercive dynamics between the parent and the child; it may launch the dyad on a suboptimal socialization

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trajectory (Kochanska & Kim, 2012). Typically, child difficulty or negativity is a starting point for such unfolding negative trajectory toward increasing parental coercion and child poor outcomes. In contrast, *early security* may foster a positive parent–child orientation that effectively defuses such detrimental cascades and may even amplify positive processes. Several socialization researchers have emphasized such a broader view of early attachment as the key foundation for the origin of socialization (Maccoby, 1992; van IJzendoorn, 1997; Waters et al., 1993).

Our team has tested that model in several longitudinal studies, including the present sample, and consistently found that infant attachment, despite typically not having main effects on parent or child measures, indeed served as a key moderator of future parent–child socialization sequelae. Keeping in mind the needed caution about causal inferences, in dyads where infants had been insecure, there was clear evidence of a temporal sequence from child negativity, difficult temperament, or anger proneness to parental power assertion to child anti-social behavior (Kochanska & Kim, 2012); from parental power assertion to children's resentful opposition to child antisocial behavior (Kochanska, Barry, Stellern, & O'Brien, 2009); or from child callousness and diminished remorse to parental coercion to child antisocial outcomes (Kim, Kochanska, Boldt, Koenig Nordling, & O'Brien, 2014). By contrast, such dynamics have been defused in dyads with formerly secure infants; instead, in those dyads, positive socialization sequelae have been amplified (Kochanska, Aksan, Knaack, & Rhines, 2004; Kochanska et al., 2010).

That model has been since replicated with regard to adolescents' internalizing problems (Milan, Zona, & Snow, 2013), middle childhood aggression (Cyr, Pasalich, McMahon, & Spieker, 2014), and toddlers' defiance (Lickenbrock et al., 2013) and affective problems (Mills-Koonce, Propper, & Barnett, 2012). Early security or insecurity served as a potent moderator of future parent–child dynamics, with maladaptive cascades unfolding only in dyads insecure in infancy, even though long-term main effects of early attachment have been typically modest or absent.

In most, if not all, of those studies, the focus has been on long-term consequences for *the child* (typically various forms of behavior problems, overall adjustment, or forms of psychopathology or competence). However, consistent with the cascade model (Masten & Cicchetti, 2010), broader consequences also ought to be considered: Early (in)security may set in motion future paths toward consequences for

the parent and for *the parent–child relationship* as well. To our knowledge, the role of early attachment as a moderator of long-term cascades for the parent–child relationship is largely unknown.

In the present article, we examine long-term associations between children's negativity toward the parents' influence, observed on repeated occasions and in multiple socialization situations from toddler to kindergarten age (2–5½), and outcomes for the child and the parent–child relationship, assessed in early preadolescence (10–12). Child attachment to the parent, assessed in infancy, is conceptualized as a moderator of those links.

In the past work, children's difficulty or negativity has been defined and assessed in multiple ways. Our team has examined anger proneness (Kochanska & Kim, 2012), defiance, negative affect, and lack of social responsiveness toward the parent (Kochanska et al., 2009), and callousness, or dampened feelings of discomfort following transgressions (Kim et al., 2014). The present study focuses on the child's negativity as resistance to or rejection of the parent's socialization influence and, specifically, its two forms. One involves fairly commonly studied child rejection of the parent's rules of behavior, observed both in the context of parent–child discipline and when the child was alone.

The other form involves the child's rejection of the parent's attempt to elicit imitation of a behavioral sequence. Given that the concept of imitation—and a related one of identification—has a very long history in socialization theory, it is surprising that imitation has rarely been examined as a form of receptiveness to socialization. Inspired by the psychoanalytic theory, Sears, Rau, and Alpert (1965) considered children's observing and emulating parents' conduct a key mechanism of conscience development. In social learning theory, Bandura and Walters (1963) viewed children's imitation as key to internalization of parental rules. Our team's work has supported the important role of child imitation of behavior modeled by the parent as a mechanism of socialization, reflecting child receptiveness to parental influence (Forman & Kochanska, 2001).

Replicating past work, and consistent with large bodies of research, we expected that children who show higher negativity to parental socialization influence would develop more externalizing problems in early preadolescence. Extending past work, we also expected that, in early preadolescence, those parent–child relationships would be of lower dyadic quality. The key expectation, however, was that such detrimental effects and maladaptive

dynamics would be present or significantly stronger for children and parents with histories of early insecurity and that they would be “defused” (either absent or significantly weaker) for children and parents with secure early attachment histories.

In other words, child (in)security in infancy was conceptualized as a moderator of the longitudinal paths from child negativity at ages 2–5½ to outcomes for the child and the parent–child relationship, assessed at 10 and 12.

Additionally, we wished to test whether such proposed cascades, presumably triggered by differences in early attachment organization, were present above and beyond attachment security assessed closer in time to the outcomes. To that effect, we examined children’s self-reported security with each parent at age 8 as an important covariate.

Method

Participants and Overview

Two-parent families of typically developing infants ($N = 102$, 51 girls) entered the study, having responded to ads distributed broadly in community venues in a college town, a small city, and surrounding rural communities in Iowa, U.S., advertising a longitudinal study. To be accepted, the biological parents had to be living together, both wishing to participate in the planned assessments, able to speak English during sessions, and not planning to move in the next 5 years. The families’ demographic backgrounds (education and annual income) were quite diverse: 25% of mothers and 30% of fathers had no more than high school education, and 21% of mothers and 20% of father had post-graduate education; 25% of families made less than \$40,000 and 49% made over \$60,000. In terms of race, 90% of mothers and 84% of fathers were White, 3% and 8% Hispanic, 2% and 3% African American, 1% and 3% Asian, 1% of mothers Pacific Islanders, and 3% and 2% “other” non-White. Although ethnic diversity was modest, nevertheless, in 20% of families, one or both parents were non-White. The study was approved by the University of Iowa IRB; parents completed informed consent, and children (at age 8) completed assent.

This article reports data from the following assessments (all measures were parallel for mother–child and father–child relationships). Data collection for this study was completed between October 2002 and December 2014. Children’s attachment security was observed in strange situation at 15 months

($N = 101$). Additionally, child-reported security, a covariate, was assessed in an interview at age 8 ($N = 87$). Children’s negativity toward the parents was observed as rejection of parental rules of behavior (defiance in structured prohibition control contexts and violating parental rules when unsupervised at ages 25, 38, 52, and 67 months; N s = 100, 100, 99, and 92) and as rejection of parental modeling (negative response to the parent’s attempt to elicit the child’s imitation of a behavioral action sequence at 67 months). The outcome measures included child externalizing problems (rated by mothers and fathers in a well-validated clinical instrument at ages 10 and 12; N s = 82 and 79) and parent–child relationship quality (observed in lengthy naturalistic contexts at ages 10 and 12).

All observational data were collected in multiple paradigms in lengthy sessions in a psychology laboratory, one with each parent at each age (at 38 months, there was one home session and one laboratory session, with each parent participating in half of each). The laboratory includes a naturalistically furnished living room and a sparsely furnished play room. In the living room, there is a low shelf with extremely attractive objects, designated as off-limits to the child. The parent was asked to convey this prohibition at the outset and enforce it throughout each session. All data were coded from video recordings, with different coders coding the child with the mother and the father. Reliability was typically established on approximately 15%–20% of cases, followed by frequent realignments, and depending on the type of code, relied on alphas, intraclass correlations, or kappas. We deployed robust data aggregation strategies at multiple levels to produce robust final constructs.

Children’s Attachment Security, 15 Months

Because these data have been published (e.g., Kochanska & Kim, 2012), the description here is abbreviated. Strange situation (Ainsworth & Wittig, 1969) was conducted as the first procedure in the laboratory session with each parent. Data were coded by external professional coders (one coder coded a given child with one parent only). Coding reliability, kappas, were .78 for the four main attachment categories (avoidant, A; secure, B; resistant, C; and disorganized or 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. With mothers, 56 children were secure (B), and 45 were insecure (12 A, 19 C, and

14 D/U). With fathers, 66 children were secure (B) and 34 were insecure (15 A, 6 C, and 13 D/U; parents of one child did not wish to participate in the father-child paradigm). The organization of the child's attachment with the mother was unrelated to that with the father, secure versus insecure, Pearson chi-square (1) = 1.67, *ns*. The order of the session (mother or father first) had no effect on security with either parent, both Pearson chi-square (1) values < 1. 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.

Children's Attachment Security, Age 8

Children completed the Kerns Security Scale (KSS; Kerns, Klepac, & Cole, 1996; Kerns, Tomich, Aspelmeier, & Contreras, 2000), a well-validated 15-item questionnaire to assess child perceptions of security with their parents. The visit coordinator read the questions to each child without the parent present, for example, "Some kids are really sure their mom would not leave them BUT other kids sometimes wonder if their mom might leave them." The child indicated, first, which description of each item was most like him or her, and second, whether this description was "very true" or "sort of true." The interviews about the mother and the father occurred at different points in the session, randomly varying the order. Each item is scored from 1 to 4. The scores were tallied, with higher scores indicating more security; children with mothers, $M = 52.10$, $SD = 5.66$, range = 30–60, and children with fathers, $M = 50.58$, $SD = 6.16$, range = 35–60. Cronbach's alphas were .67 and .68 for children's perceptions of security with mothers and fathers, respectively. Attachment organization in infancy and self-reported security at age 8 were unrelated, children with mothers, point biserial $r(86) = .07$, and with fathers, $r(84) = .06$.

Children's Negativity Toward the Parent

Child Rejection of Parental Rules of Behavior (25, 38, 52, and 67 Months)

Children's rejection of parental rules was coded at each of the four assessments and with each parent. Parental rules were defined as the prohibition related to the attractive off-limit objects in the living room. The child's rejection of the rule was coded as defiance in structured prohibition control contexts (37, 27, 65, and 60 min at the four assessments,

respectively, thus total of approximately 190 min with each parent) and as violations of the rule when the child was left alone for 8 min at the end of the mother-child and father-child sessions at each assessment.

Defiance was defined as deliberate or angry opposition with poorly controlled anger and coded for each 30-s segment within the earlier identified (by another coding team) episodes when the child oriented toward the prohibited toys. Reliability, kappas (for a broader set of possible child behaviors) across multiple coding teams, ranged from .67 to .92. At each time of assessment, we tallied all instances of defiance and divided by the number of control episodes (for each parent). Those scores were standardized, and because they cohered across 25, 38, 52, and 67 months (Cronbach's alphas .83 and .68 for children with mothers and fathers, respectively), they were averaged into one overall defiance score with the mother and one with the father.

Children's violations of rules while alone with the prohibited objects were coded at each assessment, at the end of the session. The parent reminded the child about the prohibition and left to the adjoining room. Child behavior was coded for every 5-s segment; kappas, across multiple coding teams ranged from .91 to .96 (for a broader set of child behavioral codes). Violations of rules were defined as handling or playing with the objects. Those were tallied, divided by the number of coded segments, standardized, and averaged across 25, 38, 52, and 67 months (Cronbach's alphas were .68 for children with mothers and with fathers) into overall rule violations scores, one with the mother and one with the father.

The overall scores of defiance and rule violations rules correlated, $r(100) = .58$ and $r(100) = .56$, both $ps < .001$, for children with mothers and with fathers, respectively, and were aggregated into overall scores of child rejection of parental rules of behavior from 25 to 67 months (2–5½), one for children with mothers, $M = -0.01$, $SD = 0.68$, range = -0.62 to 4.38, and one with fathers, $M = -0.01$, $SD = 0.63$, range = -0.59 to 3.29.

Children's Rejection of Parental Modeling (67 Months)

This form of negativity was defined as the child's negative, adverse response to the parent's attempt to elicit the child's imitation of a behavioral action sequence. The parent, who had been instructed beforehand, demonstrated an activity, using multiple provided craft materials (assembling a snowman for mothers and a gingerbread man for fathers). Once the parent completed the assembly, he or she asked the child to build one (Forman &

Kochanska, 2001; Kochanska et al., 2010). Up to 15 min were allowed for the project. Child behavior and affect were coded for each 1-min segment. The child's behavioral response to parental modeling was coded as poor/adversarial, fair/minimally responsive, good/reasonably responsive, or excellent/very responsive. Coders integrated the child's postural orientation (proximity, attention, eye contact) and overall negative or positive response verbalizations and behaviors (e.g., "This is stupid," "This is cool") to parental cues. Reliability, weighted kappa, was .72. To create a composite of the child's rejection of parental modeling, the poor responses (tallied and weighted by 2) and the fair responses (tallied and weighted by 1) were summed and divided by the number of segments, for children with mothers, $M = 0.19$, $SD = 0.26$, and for children with fathers, $M = 0.22$, $SD = 0.26$.

Correlations Between the Two Forms of Negativity

The two forms of child negativity (rejection of rules and of modeling) were relatively distinct constructs, only modestly related. For mother-child dyads, they correlated $r(90) = .24$, and in father-child dyads, $r(88) = .24$, both $ps < .05$.

Children's Externalizing Behavior Problems (10 and 12 Years)

At age 10, both parents completed Child Symptom Inventory-4 (Gadow & Sprafkin, 2002) and at age 12, Adolescent Symptom Inventory-4R (Gadow & Sprafkin, 2008), the (pre)adolescent version of the instrument. Both are well-established instruments that correspond to *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (American Psychiatric Association, 2000). Symptom severity scoring was used, with each item rated from 0 = *never* to 3 = *very often*. We focused on externalizing problems that encompassed oppositional defiant disorder (ODD, 8 items) and conduct disorder (CD, 15 items). At age 12, we also included antisocial personality disorder (APD, 5 items). For each parent and at each age, the scales of ODD and CD, and APD at age 12, were summed into an externalizing behavior problem score. Those scores correlated across ages 10 and 12, for mothers, $r(76) = .65$, and for fathers, $r(73) = .56$, both $ps < .001$, and were averaged across the two assessments into each parent's overall rating of child externalizing problems from 10 to 12, mothers, $M = 6.77$, $SD = 5.00$, range = 0–33, and fathers, $M = 5.95$, $SD = 4.14$, range = 0–21. The scores for mothers and fathers were correlated, $r(79) = .61$, $p < .001$.

Parent-Child Relationship Quality (10 and 12 Years)

Positive, mutually responsive orientation for each parent-child dyad was observed in 13 naturalistic, scripted, developmentally appropriate contexts (e.g., snack, opening a gift together, several parent-child conversations, joint problem solving, discussing hypothetical scenarios, adapted from attachment-informed studies, such as Minnesota Longitudinal Study, Sroufe, 1991; Sroufe, Egeland, Carlson, & Collins, 2005; research by Allen and colleagues, Allen et al., 2003; Hare, Marston, & Allen, 2011). The observed times coded for each parent-child dyad were 81 min at each age (total 162 min for each parent-child dyad; see Kochanska, Brock, Chen, Aksan, & Anderson, 2015 for details).

For each of 13 contexts, coders rated each dyad's quality of the relationship from 1 (*very untrue of the dyad*) to 5 (*very true of the dyad*). The code integrated the smoothness and coordination of the dyad's routines, the quality of dyadic communication, the degree of mutual cooperation, and emotional ambience of the interaction. Higher scores denoted a more mutually positive relationship. Reliability, weighted kappas for several teams, ranged from .66 to .79.

The scores, which cohered substantially across the observed contexts (Cronbach's alphas at age 10 were .91 and .88 for mother-child and father-child dyads, and at age 12, .93 and .93), were aggregated into one score at each age. Those aggregated scores also correlated across ages 10 and 12, for mother-child dyads, $r(70) = .74$, and for father-child dyads, $r(70) = .77$, both $ps < .001$. Thus, they were averaged into one overall relationship quality score across ages 10–12 for each mother-child dyad, $M = 2.90$, $SD = 0.44$, range = 1.21–4.06, and father-child dyad, $M = 2.87$, $SD = 0.38$, range = 1.31–3.80. Descriptive data for all measures are reported in Table S1 online.

Results

Preliminary Analyses

First, in both mother-child and father-child relationships, children who had been insecure and those who had been secure at 15 months were compared with regard to all the other constructs. There were no significant effects of infant security for child negativity from 2 to 5½ (or any of its components—defiance, rule violations, overall rejection of parental rules, or rejection of parental modeling), for child-reported security at age 8, for mother-rated child externalizing behaviors at 10–12, or for the quality of the parent-child relationship at 10–

12. As one exception, formerly insecure infants were seen by fathers as having more externalizing problems at 10–12; insecure, $M = 7.12$, $SD = 5.01$, secure $M = 5.25$, $SD = 3.37$, $t(78) = 1.99$, $p = .05$.

Second, correlations between children's negativity and the future outcomes were computed for the entire sample and separately for children who had been insecure and secure as infants (within the given parent–child relationship). The correlations are in Table 1.

For the entire sample, for both mother–child and father–child relationships, children's higher rejection of parental rules correlated with the parent's higher ratings of externalizing problems and with poorer quality of observed relationship at ages 10–12. In addition, children's higher rejection of parental modeling correlated with poorer relationship quality at 10–12 with both parents. Additionally, it correlated with more father-rated externalizing problems at 10–12.

The patterns were quite different, however, for children who varied in their attachment organization in infancy. All of the above relations between child negativity and future outcomes were significant for children who had been insecure (relation between maternal modeling and relationship quality was marginal). None were significant for children who had been secure.

Multivariate Analyses of Paths From Child Negativity to Preadolescent Outcomes

Two multiple regressions were conducted (predicting, respectively, parent-rated child externalizing

problems and observed quality of the parent–child relationship at 10–12), each for mother–child and father–child dyads. To assure that the possible effects were not due to security at age 8, the KSS score was entered as a covariate. Because children's age at the final assessment ranged from 143 to 158 months, it was also covaried, along with gender. The other predictors were child security in infancy, child rejection of the parent's rules and rejection of the parent's modeling, and the two interaction terms, Rejection of Rules \times Security and Rejection of Modeling \times Security. Because the measures of children's rejection of mothers' and fathers' rules were skewed, 3.67 and 2.96, respectively, the regressions were conducted in Mplus (Muthén & Muthén, 1998–2011), employing maximum likelihood parameter estimates with standard errors that are robust to nonnormality (MLR; Satorra & Bentler, 1988, 2001). MLR is preferable to data transformation, which can bias parameter estimates (Manning, 1998). MLR also implements full information maximum likelihood estimation, the preferred method of handling missing data in regression models (Enders, 2001). The findings, for the equations with all the predictors entered, are in Table 2.

Mother–Child Relationships

For child externalizing problems, one form of child negativity, the rejection of maternal rules from ages 2 to 5½, was a significant predictor. However, that effect was qualified by the significant interaction with child security in infancy, and that interaction was graphed using simple slopes (Aiken & West, 1991; see Figure 1).

Table 1

Correlations Between Infant Security at 15 Months and Child Negativity (Rejection of Parental Rules and Modeling) at Ages 2–5½ and Child Externalizing Problems and Parent–Child Relationship Quality at Ages 10–12

	C externalizing problems				P-C relationship quality			
	M-rated <i>p</i>		F-rated <i>p</i>		M-C <i>p</i>		F-C <i>p</i>	
Entire sample								
C security with M/F, 15 months	−.03	<i>ns</i>	−.22	.05	.09	<i>ns</i>	−.06	<i>ns</i>
C rejection of M/F rules, ages 2–5½	.45	.01	.34	.01	−.33	.01	−.26	.02
C rejection of M/F modeling, age 5½	.10	<i>ns</i>	.33	.01	−.25	.03	−.24	.04
Insecure at 15 months								
C rejection of M/F rules, ages 2–5½	.68	.01	.42	.02	−.45	.01	−.40	.04
C rejection of M/F modeling, age 5½	−.01	<i>ns</i>	.52	.01	−.29	.08	−.48	.01
Secure at 15 months								
C rejection of M/F rules, ages 2–5½	.11	<i>ns</i>	.20	<i>ns</i>	−.26	.08	−.18	<i>ns</i>
C rejection of M/F modeling, age 5½	.27	.07	.25	.08	−.23	<i>ns</i>	−.08	<i>ns</i>

Note. All correlations are within a given parent–child dyad (M–C or F–C). C security coded as 0 = *insecure* or 1 = *secure* (respective correlations are point biserial). *p* values higher than .10 are listed as *ns*. C = child; M = mother; F = father; P = parent.

Table 2

Infant Security at 15 Months and Child Negativity (Rejection of Parental Rules and Modeling) at Ages 2–5½ and Their Interactions as Predictors of Child Externalizing Problems and Parent–Child Relationship Quality at Ages 10–12, With Security at Age 8 Controlled

	Outcome measures, ages 10–12							
	C externalizing problems				P–C relationship quality			
	<i>B</i> (<i>SE</i>)	95% CI	β	<i>p</i>	<i>B</i> (<i>SE</i>)	95% CI	β	<i>p</i>
M–C relationship								
C gender	–0.01 (1.00)	[–1.96, 1.94]	–.00	<i>ns</i>	0.17 (0.10)	[–0.02, 0.36]	.20	.07
C age	–0.14 (0.15)	[–0.44, 0.16]	–.10	<i>ns</i>	–0.00 (0.01)	[–0.03, 0.02]	–.02	<i>ns</i>
C security with M, 15 months	–0.22 (0.89)	[–1.96, 1.53]	–.02	<i>ns</i>	0.08 (0.08)	[–0.08, 0.23]	.09	<i>ns</i>
C security with M, age 8	0.05 (0.39)	[–0.72, 0.81]	.01	<i>ns</i>	0.05 (0.05)	[–0.05, 0.14]	.11	<i>ns</i>
C rejection of M rules, ages 2–5½	4.53 (1.28)	[2.03, 7.03]	.68	.01	–0.41 (0.18)	[–0.77, –0.06]	–.50	.02
C rejection of M modeling, age 5½	–0.48 (0.55)	[–1.56, 0.59]	–.10	<i>ns</i>	–0.08 (0.04)	[–0.16, –0.00]	–.19	.05
C security with M, 15 months × C rejection of M rules, ages 2–5½	–3.68 (1.48)	[–6.57, –0.78]	–.33	.01	0.22 (0.21)	[–0.19, 0.63]	.21	<i>ns</i>
C security with M, 15 months × C rejection of M modeling, age 5½	1.73 (0.94)	[–0.12, 3.57]	.21	.07	–0.09 (0.08)	[–0.25, 0.07]	–.12	<i>ns</i>
F–C relationship								
C gender	0.52 (0.84)	[–1.13, 2.17]	.06	<i>ns</i>	–0.04 (0.08)	[–0.20, 0.12]	–.05	<i>ns</i>
C age	–0.28 (0.11)	[–0.49, –0.06]	–.22	.01	0.00 (0.01)	[–0.02, 0.03]	.04	<i>ns</i>
C security with F, 15 months	–1.90 (0.84)	[–3.54, –0.25]	–.22	.02	–0.03 (0.08)	[–0.18, 0.13]	–.03	<i>ns</i>
C security with F, age 8	–0.39 (0.43)	[–1.22, 0.44]	–.09	<i>ns</i>	0.12 (0.04)	[0.03, 0.20]	.28	.01
C rejection of F rules, ages 2–5½	1.91 (1.17)	[–0.39, 4.21]	.30	<i>ns</i>	–0.17 (0.08)	[–0.33, –0.01]	–.26	.04
C rejection of F modeling, age 5½	2.63 (0.79)	[1.08, 4.18]	.62	.01	–0.21 (0.08)	[–0.37, –0.05]	–.54	.01
C security with F, 15 months × C rejection of F rules, ages 2–5½	–1.09 (1.26)	[–3.55, 1.38]	–.12	<i>ns</i>	0.07 (0.12)	[–0.18, 0.31]	.08	<i>ns</i>
C security with F, 15 months × C rejection of F modeling, age 5½	–2.05 (0.95)	[–3.91, –0.18]	–.39	.03	0.19 (0.10)	[–0.01, 0.40]	.41	.06

Note. All *p* values and CIs refer to *B*s; *p* values higher than .10 are listed as *ns*. C = child; M = mother; F = father; P = parent.

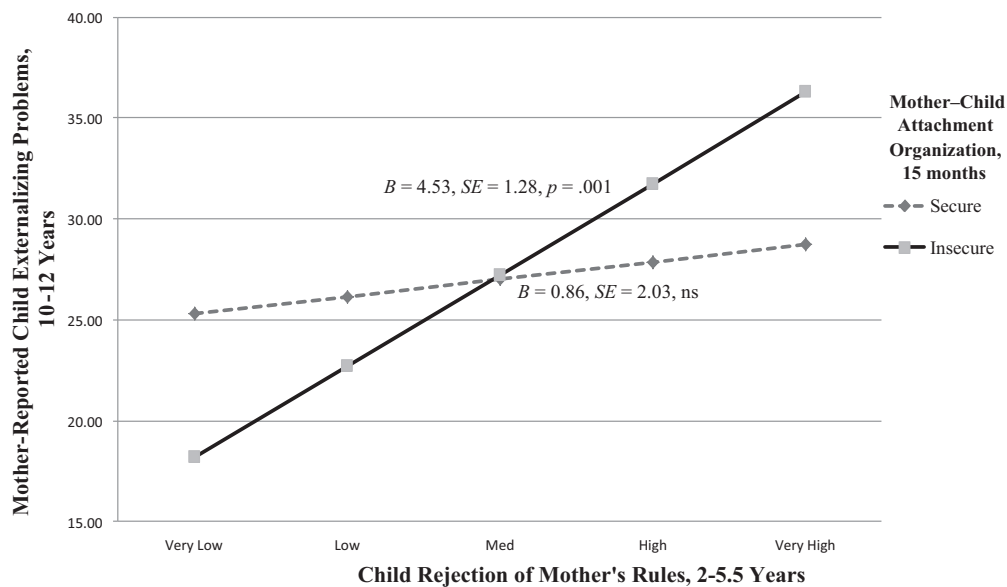


Figure 1. Children's attachment organization with mothers in infancy moderates the relation between children's rejection of the mothers' rules at ages 2–5½ and mother-rated externalizing problems at ages 10–12. The solid line represents a significant simple slope, and the dashed line represents a nonsignificant simple slope. Child gender, age in months at the last assessment, and attachment security at age 8 were covaried (not depicted).

As expected, for children who had been insecurely attached to mothers in infancy, rejection of maternal rules was associated with future child behavior problems. Among the formerly insecure infants, those who were more likely to reject the mothers' rules from ages 2 to 5½ were rated as having more externalizing behavior problems at ages 10–12. Among the formerly secure children, however, variation in their rejection of their mothers' rules was unrelated to externalizing problems. The interaction Rejection of Modeling \times Security was marginal, but when graphed, neither slope was significant.

For the mother–child relationship quality, there were two main effects: Both forms of negativity, rejection of maternal rules from 2 to 5½ and of modeling at 5½, were associated with a poorer relationship at 10–12. There were no interactions with security.

Father–Child Relationships

For child externalizing problems, age was a negative predictor. Child security in infancy and rejection of modeling at 5½ were significant predictors, but those effects were qualified by their interaction, graphed using simple slopes in Figure 2.

For children who had been insecurely attached to fathers in infancy, rejection of paternal attempts to elicit the child's imitation at age 5½ was associated with future externalizing behavior problems. Among those formerly insecure infants, those who were more likely

to reject paternal modeling were rated as showing more externalizing behavior problems at 10–12. Among the formerly secure children, however, variation in their rejection of the fathers' modeling was unrelated to future externalizing problems.

With regard to the father–child relationship quality, the child's security with the father, reported at age 8, was associated with a better relationship at 10–12. Children's rejection of paternal rules from 2 to 5½ was associated with a poorer father–child relationship at 10–12. Children's rejection of paternal modeling at 5½ was also associated with poorer relationships with the fathers at 10–12, but that effect was qualified by the expected interaction with child security with the father in infancy ($p = .06$). The interaction was graphed in Figure 3.

As expected, among the formerly insecure children, variation in their rejection of paternal modeling at 5½ was linked to future quality of the relationship with the father: More rejection of modeling predicted poorer quality. Among the formerly secure children, however, variation in their rejection of their fathers' modeling was unrelated to the future quality of the relationship.

Discussion

The key question whether early relational experience carries forward in development, and if so,

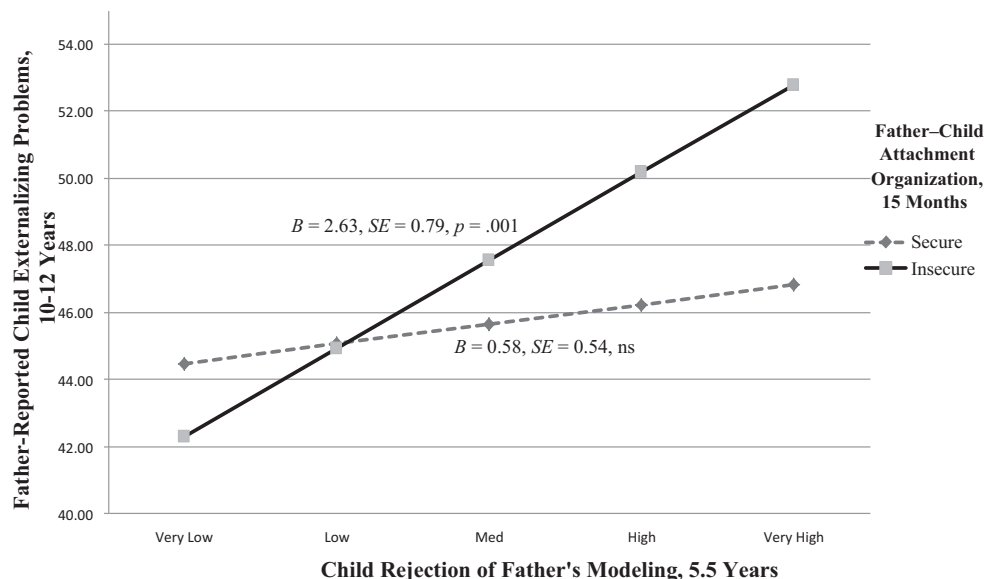


Figure 2. Children's attachment organization with fathers in infancy moderates the relation between children's rejection of the fathers' modeling at age 5½ and father-rated externalizing problems at ages 10–12. The solid line represents a significant simple slope, and the dashed line represents a nonsignificant simple slope. Child gender, age in months at the last assessment, and attachment security at age 8 were covaried (not depicted).

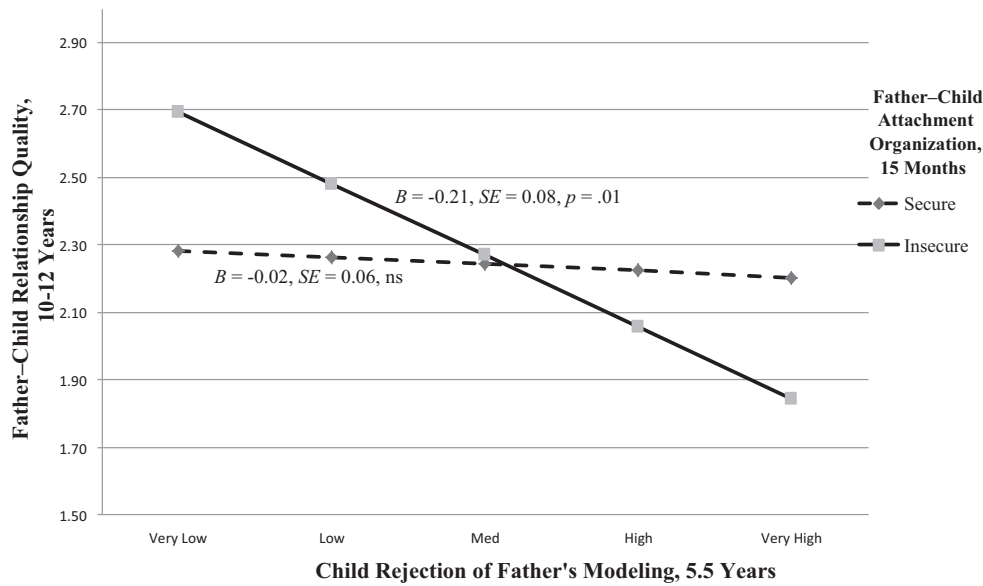


Figure 3. Children's attachment organization with fathers in infancy moderates the relation between children's rejection of the fathers' modeling at age 5½ and observed quality of father-child relationships at ages 10–12. The solid line represents a significant simple slope, and the dashed line represents a nonsignificant simple slope. Child gender, age in months at the last assessment, and attachment security at age 8 were covaried (not depicted).

what mechanisms account for its lasting legacy, is vigorously debated in developmental psychology and psychopathology (Haltigan, Roisman, & Fraley, 2013; Sroufe et al., 2005). Ever since Bowlby (1969/1982) proposed his theory of early human bonds, research has continued to validate its heuristic and generative value. Ideas informed by attachment theory have also informed research on socialization and on long-term parent-child dynamics.

Influenced by attachment theory, the current work contributes to research on parent-child socialization. The findings are straightforward and consistent with expectations. Although correlational, the data replicate and extend our team's previous research that has repeatedly demonstrated—across different samples, ages, measures, mother-child and father-child relationships, and various analytical strategies—the role of attachment in the 1st year of life as a potent moderator of future long-term socialization cascades. The findings also complement the growing body of research that demonstrates an indirect, yet powerful and long-lasting role of the infant's attachment organization in the first year of life (Sroufe et al., 2005).

Early (in)security was not directly associated with the child's negativity from ages 2 to 5½. It was also generally unrelated to child externalizing behavior problems or the quality of the parent-child relationship in preadolescence. Nevertheless, as anticipated and consistent with the conceptual

model, the associations between child negativity at ages 2–5½ and the preadolescent outcomes were significant only for the formerly insecure infants, in both mother-child and father-child relationships. Of note, the analyses controlled for children's self-reported security at age 8 (which, in fact, had a predicted association with father-child future relationship quality).

There were several differences between mother-child and father-child relationships with regard to the type of child negativity linked to the preadolescent outcomes. For mother-child dyads, the child's *rejection of the mother's prohibition* from toddler to kindergarten age in contexts of discipline and while alone with the prohibited objects appeared key. In the dyads with mothers and their formerly insecure infants, children who were more likely to reject the mothers' prohibition were also perceived by the mothers as having more antisocial conduct problems in preadolescence. In contrast, in mother-child dyads in which the infants had been secure, children's rejection of maternal rules was unrelated to future externalizing behavior problems. Note, however, that for *all* mother-child dyads, regardless of child infant attachment organization, children's tendency to reject maternal rules from ages 2 to 5½ and maternal modeling at 5½ was associated with poorer, less mutually positive and responsive observed quality of mother-child relationship at 10–12.

For father–child dyads, the child’s *rejection of the father’s modeling attempts* appeared key. Again, only for the dyads with formerly insecure infants, children who were less willing to follow the fathers’ modeling were also seen by the fathers as having more antisocial behavior problems at ages 10–12. Again only in those dyads, children’s rejection of paternal modeling was linked to poorer quality of the father–child relationship in preadolescence, whereas in the dyads with formerly secure infants, children’s rejection of paternal modeling had no long-lasting association with the father–child relationship (the latter finding should be interpreted with caution; although the simple slope for insecure infants was significant, the p level for the interaction effect was .06). Regardless of early attachment organization, children’s rejection of paternal rules from 2 to 5½ was associated with poor quality of the father–child relationship in preadolescence, paralleling the finding for mothers and children.

At this point, the interpretation of the differences in the investigated associations for mother–child and father–child relationships has to be tentative. Perhaps parents and children experienced the modeling paradigm as focused on play, in contrast to the prohibition to touch the attractive objects, likely seen as control and discipline. A robust body of literature has emphasized play as a key component of father–child socialization (Parke & Buriel, 2006).

Although the current results were straightforward and consistent with our team’s past research, a lot remains to be learned about specific causal mechanisms that account for the differential cascades in insecure and secure dyads. In our broader view of attachment as a foundation for future socialization, early security contributes to an enduring reciprocal and cooperative set within the dyad, and a reservoir of mutual “good will” (Kochanska & Kim, 2012; Kochanska, Kim, & Boldt, 2015). Consequently, in secure dyads, both parents and children are motivated to work constructively on the child’s negative or difficult behavior. By contrast, in insecure relationships, parents tend to respond with more coercive control to children’s negative or difficult behavior, and that control, in turn, amplifies the dyad’s mutually adversarial stance, leading to detrimental socialization outcomes for the child and for the parent–child relationship (Kochanska & Kim, 2012). At the level of internal representations, parents in secure dyads may have reflective, mind-minded, and positive internal working models (IWMs) of their children (Dykas & Cassidy, 2011; Meins, Fernyhough, Fradley, & Tuckey, 2001; Slade, 2005; van IJzendoorn, 1995). The child’s negativity

may trigger the parent’s cognitive processing of reasons that underlie the negative behavior, helpful coaching for negative emotion regulation, patience, warmth, and appropriate rearing practices, thus effectively defusing the potential maladaptive dynamics. But in insecure dyads, children who are difficult engender a sense of frustration and further reinforce the parent’s negative IWM and expectations of the child (Smith, Dishion, Shaw, & Wilson, 2015). Over time, the parent’s IWM of the child as difficult and oppositional becomes entrenched, and the parent increasingly forms hostile attributions and negative expectations, often combined with a sense of powerlessness (Bugental & Johnston, 2000), leading to adversarial and coercive dynamics. A rapprochement among research on parenting, attachment, and parenting cognitions, long overdue, would substantially inform our understanding of diverse developmental trajectories (Dykas & Cassidy, 2011).

This study has several limitations. In this low-risk community sample, parents and children were generally competent, with little evidence of psychopathology, and their relationships were largely harmonious. Although the families represented a relatively broad demographic range, their ethnic diversity was limited. Furthermore, one of the outcome measures was self-reported by the parents (child externalizing problems). Although that instrument is well validated, self-reports are subject to known reservations. The child’s measure of security at age 8, KSS, a covariate, was based on self-report in the context of an interview. Ideally, attachment should be assessed with similar methodologies at several points in development.

The correlational nature of the data—as in most attachment studies—is also a limitation that constrains inferences about presumed causal pathways. Nevertheless, this study further validates attachment theory as a heuristically powerful model that informs our understanding of socialization processes and of complex sequelae of early experience. As Sroufe (2005) proposed, variations in infant–caregiver attachment are related to developmental outcomes probabilistically and only in the context of complex developmental systems and processes. The key role of attachment is in the initiation of these complex processes; however, early attachment is an organizing core in development that is always integrated with later experience and never lost. Long-term studies can elucidate the potent, lasting, although often indirect, role of early attachment in the unfolding parent–child dynamics and consequences for children and parents.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher’s website:

Table S1. Descriptive Data