

The Interpersonal Antecedents of Supportive Parenting: A Prospective, Longitudinal Study From Infancy to Adulthood

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This study drew on prospective, longitudinal data to test the hypothesis that the intergenerational transmission of positive parenting is mediated by competence in subsequent relationships with peers and romantic partners. Interview-based ratings of supportive parenting were completed with a sample of 113 individuals (46% male) followed from birth to age 32. Results indicated that supportive parenting during adulthood was predicted by observed maternal sensitivity during the first 3 years of life, even after controlling for adults' age at first childbirth and adults' socioeconomic status and educational attainment at the time of the second generation parenting assessments. Moreover, the intergenerational association in parenting was mediated by later competence in relationships with peers and romantic partners. In particular, sensitive caregiving in infancy and early childhood predicted teachers' rankings of children's social competence with peers during childhood and adolescence, which in turn forecasted later interview ratings of romantic relationship competence during young adulthood, which in turn predicted supportive parenting in adulthood. Findings are discussed with respect to current theory and research on the intergenerational transmission of parenting.

Keywords: parenting, intergenerational transmission, social development, peer relationships, romantic relationships

The question of why adults parent the way they do has a long history in developmental science. Interest in this topic has partly been motivated by the evidence that parenting has long-term implications for children's developmental adaptation (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Fraley, Roisman, & Haltigan, 2013; O'Connor, 2002; Repetti, Taylor, & Seeman, 2002; Sroufe, Coffino, & Carlson, 2010). Thus, insights into why some adults are able to parent effectively whereas others have more difficulty may inform prevention and intervention efforts designed to improve children's and families' well-being. Adults' competence in the parental role is also a theoretically important social development outcome. Indeed, multiple theoretic

cal perspectives propose that the quality of parenting adults provide for their children is shaped by adults' prior interpersonal experiences (Belsky, 1984; Bowlby, 1988; Erikson, 1968; Patterson, 1998; Sroufe et al., 2010). In particular, parenting is thought to be transmitted across generations, such that early caregiving experiences provide a foundation for parenting outcomes in the next generation.

Early research on the topic of the intergenerational transmission of parenting largely focused on continuity and change in maltreatment and other forms of harsh parenting and was limited by the reliance on retrospective measures of adults' earlier caregiving experiences (for a review, see Belsky & Jaffee, 2006). However, in recent decades, there has been an influx of prospective, longitudinal investigations on this topic, increasingly with a focus on positive parenting outcomes. These studies have yielded consistent evidence that the supportive care an individual receives as a child or adolescent predicts the supportive parenting they provide to their own children several decades later (Belsky, Hancox, Sligo, & Poulton, 2012; Brook, Lee, Finch, & Brown, 2012; Chen & Kaplan, 2001; Friesen, Woodward, Horwood, & Fergusson, 2013; Kerr, Capaldi, Pears, & Owen, 2009; Neppl, Conger, Scaramella, & Ontai, 2009). Moreover, the intergenerational continuities in parenting do not appear to be entirely due to intergenerational stabilities of broader contextual conditions, as early caregiving experiences continue to predict parenting quality in the next generation after controlling for adults' educational attainment, socioeconomic

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status, or age at first childbirth (e.g., Kovan, Chung, & Sroufe, 2009; Shaffer, Burt, Obradović, Herbers, & Masten, 2009).

As a result of both the consistency and the robustness of the intergenerational associations in parenting quality, research attention has now shifted from the question of whether parenting quality is transmitted across generations to the question of how this occurs. In other words, a crucial task for contemporary research on the developmental antecedents of parenting involves elucidating the processes underlying the intergenerational continuities in parenting. One prominent hypothesis is that early parent–child relationship experiences exert an influence on parenting several decades later by providing a foundation for competence in more developmentally proximal relationships (Caspi & Elder, 1988; Conger, Belsky, & Capaldi, 2009). In particular, early parent–child relationships are thought to shape second generation parenting outcomes via two interpersonal domains: (a) the development of social competence with peers during childhood and adolescence and (b) the formation of committed, supportive romantic relationships during adulthood. Competence within the peer group reflects the formation of social skills—such as empathy, perspective taking, and conflict resolution—that are thought to be fundamental for close relationships during adulthood, including the parent–child relationship (Collins & van Dulmen, 2006; Hartup, 1996; Sroufe, Egeland, Carlson, & Collins, 2005a). In addition, adults' romantic relationships are thought to serve several, overlapping functions that are relevant to the task of providing supportive parental care, including providing opportunities to practice providing and receiving care for others, regulating positive and negative emotions that may carry over into the parent–child relationship, buffering the adult from stresses emanating from outside the family, and modeling parental behavior as a coparent (Ainsworth, 1989; Belsky & Jaffee, 2006; Conger, Schofield, & Nepl, 2012; Conger, Schofield, Nepl, & Merrick, 2013; Grych, 2002; Krishnakumar & Buehler, 2000). Indeed, longitudinal investigations have provided evidence that individuals' experiences with both peers and romantic partners may mediate the intergenerational continuities in positive parenting (Caspi & Elder, 1988; Chen & Kaplan, 2001; Chen, Liu, & Kaplan, 2008; Kerr et al., 2009; Shaffer et al., 2009). More important though, peer and romantic relationship contributions to the development of parenting have been considered in isolation of one another. As a result, it remains unclear how experiences with parents, peers, and romantic partners work together across development to shape parenting during adulthood.

The central aim of the present study was to investigate the interpersonal origins of supportive parenting in adulthood, in particular the extent to which intergenerational continuities in supportive parenting are mediated by later, extrafamilial relationships with peers and romantic partners. This study was guided by Patterson's (1998) hypothesis that adult parenting outcomes are predicted by a set of sequential links from early parent–child relationship experiences to the quality of peer relationships in childhood, to competence in romantic relationships during adulthood. This theoretical model integrates and builds on the evidence that (a) children's competence within the peer group reflects social skills that are rooted in earlier parent–child relationship experiences (Fraleigh et al., 2013; Sroufe, Egeland, & Carlson, 1999); (b) competence with the task of forming and maintaining healthy, committed romantic partnerships during young adulthood builds on prior experiences within the peer group (Allen, Chango, &

Szwedo, 2014; Collins & van Dulmen, 2006; Rauer, Pettit, Lansford, Bates, & Dodge, 2013; Roisman, Masten, Coatsworth, & Tellegen, 2004; Simpson, Collins, Tran, & Haydon, 2007); and (c) parenting quality is influenced by adults' current social ecology, particularly the quality of their romantic relationships (Belsky & Jaffee, 2006; Krishnakumar & Buehler, 2000). Most important for the purposes of the present study, Patterson (1998) hypothesized that the intergenerational continuities in parenting were mediated by the developmental pathway from first generation parenting to peer social competence to romantic relationship competence to second generation parenting quality.

To address these questions, we drew on data from the Minnesota Longitudinal Study of Risk and Adaptation (MLSRA; Sroufe, Egeland, Carlson, & Collins, 2005b), an ongoing longitudinal study of development from infancy to adulthood. In an earlier publication based on data from the MLSRA, Kovan and colleagues (2009) reported evidence for an intergenerational association in parenting quality among a subsample of 61 participants who had completed an observational assessment of parenting during young adulthood (ages 21–31 years). The current study aimed to replicate these findings using an interview-based measure of parenting quality that was completed with MLSRA participants who were serving in a parental role at age 32 years. The current study also sought to extend the findings of Kovan et al., (2009) by investigating whether the intergenerational continuities in supportive parenting were mediated by competence in later relationships with peers and romantic partners.

Method

Participants

The current sample is drawn from the original MLSRA sample of 267 individuals born to first-time mothers who were living below the poverty line and receiving prenatal services through an urban public health department between 1975 and 1977. At the time of the child's birth, 48% of the mothers were teenagers, 65% were single, and 40% had received less than a high school education. Sixty-five percent of the infants were White, 16% were multiracial, 14% were African American, and 5% were Native American, Hispanic, or Asian American. The children have been followed across time, with repeated assessments during childhood, adolescence, and early adulthood. There were 164 participants who participated in a follow-up assessment when they were 32 years old. Attrition analyses indicated that these participants did not significantly differ from the original sample with respect to early sociodemographic characteristics.

At the time of the 32-year assessment, 113 participants (46% men) reported serving in a parental role. An additional four participants reported they were biological parents but were excluded from these analyses because they did not have regular contact with any of their children (e.g., adoption or the death of the child soon after birth). Adults' ages at the time of the first childbirth ranged from age 15 to 32 years ($M = 23.39$ years, $SD = 4.33$ years). Participants reported parenting between one and 11 children ($M = 2.5$, $SD = 1.6$), and their children's ages ranged from 2 months to 21 years ($M = 7.5$ years, $SD = 4.4$ years). Moreover, 97% reported being a biological parent, and 26% reported parenting children not biologically related to them (e.g., ***step-children,

adoption, or current romantic partner's children). Within this subsample, 85% reported being involved in a romantic relationship at the time of the 32-year assessment. Most of these were engaged or marital relationships (64%) and a smaller number were either cohabiting (13%) or dating relationships (23%). This specific subsample of participants did not significantly differ from the original sample with respect to early sociodemographic characteristics, and this subsample had no missing data on any of the predictor variables described later.

Measures

Numerous assessment approaches were utilized in this study, including direct behavioral observations, teacher rankings, interviews, and questionnaires. We selected antecedent measures that had been collected at multiple time points using standard assessment protocols.

First generation (G1) early maternal sensitivity. Mother-child interactions were videotaped during semistructured tasks when participants were 3-, 6-, 24-, and 42-months-old. At 3 months, infant-mother pairs were observed in their homes during a feeding situation. Mothers were instructed to interact with their infant as they normally did. When infants were 6-months-old, two feeding situations and one play interaction were observed in the home on 2 different days. During the play interactions, mothers were instructed to play with the child, first without using any toys and then using a standard set of toys. At 24 and 42 months, children and mothers were observed in a laboratory setting while attempting to solve a series of problem-solving and teaching tasks. At each age, the tasks gradually increased in complexity, ultimately becoming too difficult for the child to complete on his or her own. Mothers were instructed to first allow the child to try to independently solve each task, and then to give the child any help they thought was needed (for more information, see Erickson, Sroufe & Egeland, 1985; Matas, Arend, & Sroufe, 1978).

When children were 3- and 6-months-old, maternal sensitivity was operationalized using Ainsworth's nine-point sensitivity scale (Ainsworth, Blehar, Waters, & Wall, 1978). This rating assesses each mother's ability to perceive and accurately interpret her infant's signals and respond appropriately and promptly. At 6 months, the separate ratings of maternal sensitivity during feeding and play sessions were averaged ($\alpha = .87$). Maternal sensitivity at 24 and 42 months was evaluated with a seven-point rating of each mother's supportive presence. This rating captured the extent to which each mother provided a secure base for her child (i.e., helped the child feel comfortable with the task) as well as each mother's positive involvement during the interaction. At 3 months, interrater agreement was calculated using the Lawlis-Lu index (Tinsley & Weiss, 1975), with agreement defined as a discrepancy of two points or less on the nine-point rating scale. The Lawlis-Lu chi-square was significant at $p < .05$, with a T value of .75, indicating moderate-to-high agreement. For the 6-, 24-, and 42-month assessments, interrater reliabilities (intraclass correlations) were .89, .84, and .87, respectively. There was moderate stability in maternal sensitivity during the first 3.5 years of life, as intercorrelations among the ratings collected at 3, 6, 24, and 42 months ranged from .18 to .51 ($M = .34$; see Pianta, Sroufe, & Egeland, 1989, for more information about stability and change in early maternal sensitivity in this sample). A composite measure of early

maternal sensitivity was created by standardizing and averaging the four maternal sensitivity ratings ($\alpha = .67$).

Peer social competence. Social competence during childhood and adolescence was assessed using teachers' rankings of each child's competence with peers during kindergarten; Grades 1, 2, 3, and 6; and age 16 years. Teachers were asked to rank all of the students in their classrooms (those being followed as part of this study, as well as those who were not) according to how well they matched with developmentally appropriate written behavioral descriptions of social competence. Children most closely resembling the criterion description ranked near the top. Children's rankings in the various classrooms were then standardized by dividing their rank by the number of students in their class. Rankings were multiplied by 100, so that the possible scale ranged from zero to 100. These rankings have been used extensively in prior MLSRA investigations of children's social development (e.g., Carlson, Sroufe & Egeland, 2004; Englund, Kuo, Puig, & Collins, 2011; Sroufe et al., 1999). A composite measure of social competence with peers during childhood and adolescence was created by averaging the rankings from the six ages ($\alpha = .78$).

Romantic relationship competence. At age 23 and 32 years, each participant was interviewed about his or her recent history of romantic relationships and current relationship, when applicable. Trained coders then listened to each audiotaped interview and rated the degree to which each participant had attained developmentally appropriate competence in romantic relationships using a five-point scale. Higher scores indicated that the participant had a history of relationships characterized by mutual caring, trust, and emotional closeness; concern for, and sensitivity to, the needs and wishes of others; sharing of experiences and enjoyment with others; and valuing faithfulness, loyalty, and honesty. Participants who received lower scores either reported relationships in which these qualities were absent or were unable to maintain romantic relationships for more than a short period of time. Interrater reliabilities (intraclass correlations) at age 23 and 32 were .93 and .94, respectively. These ratings have been used in prior studies of the developmental antecedents of romantic relationship functioning (e.g., Englund et al., 2011). Ratings at age 23 and 32 were moderately correlated, $r = .42$, $p < .001$ and were averaged to create a composite measure of romantic relationship competence during adulthood.

Second generation (G2) supportive parenting. When participants were age 32 years, they completed a three-part, semistructured interview designed to assess their overall orientation toward the task of parenting. The first section focused on participants' general theories and beliefs about parenting. Participants were asked to describe the ideal parent-child relationship and the role of parents in children's lives. In the second section, participants were asked to supply behavioral examples of their own parenting practices that supported their stated theories about parenting, and participants also were asked about their hopes and concerns for their own children. The final section of the interview focused on participants' experiences providing support, affection, and discipline for their children. Interviews lasted approximately 1 hr.

Trained coders listened to the audiorecorded interviews and rated participants' parenting quality using six 7-point scales: positive emotional connectedness (warmth toward children and pleasure in being a parent), parental investment/involvement (belief in

the importance of being a parent and a clear commitment to parenting), parental confidence (sense of efficacy in the parental role), hostile parenting (derogation or rejection of children), parent-child boundary dissolution (role-reversal in the parent-child relationship), and coherence of parenting philosophy (organization and consistency of the parents' various parenting beliefs and practices). In addition, coders assigned a summary rating of adults' overall effectiveness in the parental role using a five-point scale. For all scales, ratings focused on the parents' expressed beliefs and attitudes, their parenting behaviors, and the alignment between the two. For example, parents who received a high score on the positive emotional connectedness scale repeatedly expressed a genuine sense of concern and affection for their children, articulated why their children were important to them, and offered behavioral examples of providing warmth and affection for their children. Interrater reliabilities (intraclass correlations) for all scales were between .81 and .93.

The number of parenting variables was reduced using principal components analysis (direct oblimin rotation) of the specific parenting rating scales. The rating for overall parenting quality was not included in the principal components analysis because it was designed to be summary rating. Two components emerged: supportive parenting (positive emotional connectedness, parental investment/involvement, and coherence of parenting philosophy; $\alpha = .88$) and negative parenting (hostile parenting and parent-child boundary dissolution; $\alpha = .49$). Parental confidence significantly cross-loaded ($<.20$ difference in loadings) and was dropped from further analysis. Composite measures were created by averaging the relevant scales. Second generation supportive parenting was selected as the primary outcome variable for this study because of the stronger internal consistency and the conceptual parallels with the first generation sensitive parenting measure. This interview-based measure of supportive parenting was positively associated with independent, observational ratings of adults' "supportive presence" during interactions with their own children when children were 24 months, $r(72) = .20, p = .09$ and when their children were 42 months, $r(78) = .48, p < .001$ (see Kovan et al., 2009, for more information about these assessments).

Covariates. We selected three covariates that have been examined in previous investigations of intergenerational continuities in supportive parenting (e.g., Kerr et al., 2009; Kovan et al., 2009; Shaffer et al., 2009) and may represent potential confounds to our interview-based measure of supportive parenting: adults' educa-

tional attainment, socioeconomic status, and age at the birth of their first child. Adults' self-reported educational attainment was assessed at age 32 years using a six-point scale, ranging from 1 (*no high school diploma or GED*) to a 6 (*postbaccalaureate degree*). Adults' socioeconomic status was assessed at age 32 years using Duncan's Socioeconomic Index, a widely used indicator of occupational ranking (Stevens & Featherman, 1981). For this study, scores were based on the occupation of the head of household (whichever adult in the household had a higher occupational ranking). The scale ranged from zero to 100. Births of participants' biological children were tracked yearly via interviews with the participants. This information was used to calculate each participant's age at the birth of his or her first biological child. For participants who were not biological parents but reported serving in a parental role ($n = 3$), the age at which they first assumed a parental role was used.

Results

Bivariate Correlations

Descriptive statistics and intercorrelations for the variables included in these analyses are presented in Table 1. As expected, G2 supportive parenting in adulthood was positively associated with G1 early maternal sensitivity, social competence with peers during childhood and adolescence, and competence in romantic relationships during young adulthood. In addition, G2 supportive parenting was positively correlated with adults' age at the time of their first childbirth as well as adults' educational attainment and socioeconomic status at the time of the G2 parenting assessment.

The correlational analyses also offered preliminary support for the idea that the intergenerational transmission in positive parenting may be accounted for by competence in later relationships with peers and romantic partners. In particular, early maternal sensitivity was positively associated with later competence in peer relationships during childhood and adolescence and positively associated with romantic relationships during young adulthood. In addition, peer social competence was positively associated with later competence in adult romantic relationships.

Moderation by Parents' Gender and Parental Age

Because the current sample contained approximately equal numbers of male and female parents, moderation analyses were

Table 1
Descriptive Statistics and Intercorrelations Among Variables

Variables	1	2	3	4	5	6	7
1. G1 early maternal sensitivity	—						
2. Peer social competence	.32**	—					
3. Adult romantic relationship competence	.21*	.34***	—				
4. Parental age at first childbirth	.09	.21*	.15	—			
5. Adult educational attainment	.25**	.40***	.28**	.31**	—		
6. Adult socioeconomic status	.17†	.28**	.38***	.26**	.60***	—	
7. G2 supportive parenting	.25**	.40***	.51***	.48***	.37***	.33***	—
<i>M</i>	-0.05	48.22	3.17	23.39	2.50	38.38	5.15
<i>SD</i>	0.68	18.70	1.17	4.33	1.14	14.56	1.22

Note. $N = 113$. G1 = first generation; G2 = second generation.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

conducted to evaluate whether the associations between adults' supportive parenting and their earlier interpersonal experiences varied by the sex of the participant. This was accomplished by estimating a series of hierarchical regressions, regressing G2 supportive parenting on (a) early maternal sensitivity, peer social competence, and romantic relationship competence; (b) the participants' sex; and (c) the three relationship-by-sex interactions. None of the interaction terms were statistically significant (p values between .33 and .83), indicating that the associations between adults' earlier interpersonal experiences and their supportive parenting did not differ according to the participants' sex.

In addition, in light of theoretical arguments raised by Belsky et al. (2012) regarding the possibility that intergenerational continuities in parenting may be stronger for individuals who had children at younger ages, moderation analyses were conducted to evaluate whether age of first childbirth moderated the predictive effects of G1 early maternal sensitivity for G2 supportive parenting. The interaction term was not significant ($p = .37$), indicating that the intergenerational associations in supportive parenting did not vary as a function of adults' ages at the time they became parents.

Direct and Indirect Effects of Earlier Interpersonal Experiences

PROCESS for SPSS (Hayes, 2013) was used to evaluate the degree to which the intergenerational continuities in positive parenting are accounted for by indirect effects through competence in later relationships with peers and romantic partners. In particular, we tested a multiple-step, multiple-mediator model that controlled for the covariates when estimating all paths (Figure 1; see also Hayes, Preacher, & Myers, 2011). This model provides estimates for 10 focal coefficients: the total predictive effect of the focal predictor variable on the outcome variable (c path), the three unique effects of the focal predictor variable and the two mediators on the outcome variable (the c' and the two b paths, respectively), the three direct paths among the focal predictor and the two mediators (a paths), and the three indirect effects of the focal predictor variable on the outcome variable ($X \rightarrow M1 \rightarrow Y$; $X \rightarrow M2 \rightarrow Y$; $X \rightarrow M1 \rightarrow M2 \rightarrow Y$). PROCESS produces bootstrap

standard errors and 95% percentile-based confidence intervals for the specific indirect effects using 10,000 bootstrap samples. Evidence of an indirect effect is suggested by the absence of a value of zero within the bias-corrected bootstrap confidence intervals. In addition, the ratio of the indirect effect to the total effect (I/T) is reported as a measure of effect size for the indirect effects.

Results from these analyses are presented in Table 2 and illustrated in Figure 2. Although the covariates were included in these analyses, the results are not included in Figure 2 to make the diagram less complex. The total predictive effect of G1 early maternal sensitivity for G2 supportive parenting was significant, even after controlling for adults' educational attainment, socioeconomic status, and age at first childbirth. However, this association no longer was statistically significant after accounting for the predictive effects of peers and romantic partners, which is suggestive of mediation. Indeed, the total indirect effect for G1 early maternal sensitivity was statistically significant, with approximately 51% of the total effect of the intergenerational transmission in supportive parenting being accounted for by later competence within peer and romantic relationships. Although the separate indirect effects through peers and romantic partners were not significant, the two-step mediational pathway (i.e., $X \rightarrow M1 \rightarrow M2 \rightarrow Y$) was statistically significant. In particular, sensitive caregiving in infancy and early childhood predicted social competence with peers during childhood and adolescence, which predicted later interview ratings of individuals' competence in romantic relationships during young adulthood, which in turn was associated with supportive parenting in adulthood. Examination of the effect size indicated that the pathway from G1 early maternal sensitivity to peer social competence to romantic relationship competence to G2 parenting accounted for 12% of the intergenerational transmission in supportive parenting.

Discussion

The present study investigated the interpersonal origins of supportive parenting in adulthood using prospective, longitudinal data. This first involved examining the extent to which supportive parenting demonstrated continuity across different generations. Indeed, supportive parenting at age 32 was predicted by individuals' experiences with their own caregivers during the first 3.5 years of life, such that individuals who experienced more sensitive maternal care during infancy and early childhood were more likely to provide supportive care for their own children as adults. Moreover, the intergenerational association in supportive parenting was not merely due to socioeconomic factors or adults' age at first childbirth, as adults' early caregiving experiences continued to predict second generation parenting quality after controlling for these factors in adulthood. Thus, the current study both replicates and extends prior findings from the MLSRA as reported by Kovan et al. (2009) by demonstrating that the intergenerational continuities in positive parenting extend across nearly three decades. Moreover, the findings from this sample of individuals born into poverty are consistent with longitudinal evidence of continuities in positive parenting observed in other high-risk samples (e.g., Neppl et al., 2009; Shaffer et al., 2009) as well as normative-risk cohorts (e.g., Belsky et al., 2012; Chen & Kaplan, 2001).

The second aim involved investigating the extent to which the intergenerational continuities in supportive parenting are mediated

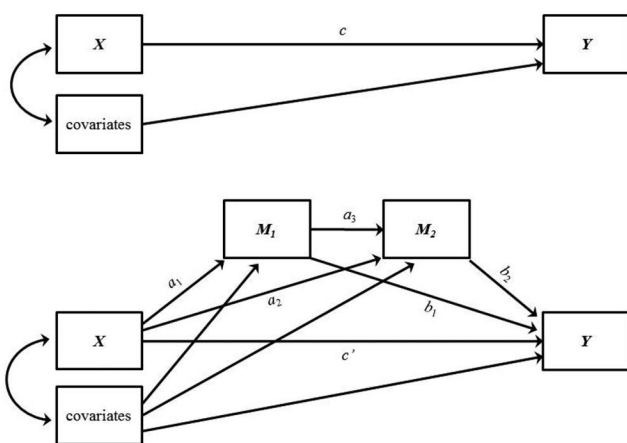


Figure 1. Illustration of a multiple-step, multiple-mediator model with covariates.

Table 2
Total, Direct, and Indirect Predictive Effects of First Generation Early Maternal Sensitivity for Second Generation Supportive Parenting

Association tested	<i>B</i> (<i>SE</i>)	95% CI	β	I/T
Total effect	.29 (.15)	[.01, .59]	.18*	—
Direct effect	.14 (.14)	[−.13, .42]	.09	—
Indirect effects: Total	.15 (.08)	[.01, .33]	.09*	.51
G1 maternal sensitivity → peer social competence	.06 (.04)	[−.01, .16]	.04	.20
G1 maternal sensitivity → romantic relationship competence	.05 (.07)	[−.07, .19]	.03	.19
G1 maternal sensitivity → peer competence → romantic competence	.04 (.02)	[.01, .11]	.02*	.12

Note. $N = 113$. Adults' educational attainment, socioeconomic status, and age at first childbirth were included as covariates. I/T = indirect effect/total effect; G1 = first generation.

* $p < .05$.

by competence in subsequent, extrafamilial relationships with peers and romantic partners. As anticipated by Patterson (1998), the intergenerational continuities in supportive parenting in adulthood largely were accounted for by the developmental pathway from parent–child to peer to romantic relationships. In particular, sensitive caregiving during infancy and early childhood predicted teachers' rankings of social competence with peers during childhood and adolescence, which in turn forecasted later interview ratings of romantic relationship competence during young adulthood, which in turn predicted supportive parenting in adulthood. These findings are consistent with prior evidence that individuals' experiences with peers during childhood and adolescence represent a pathway by which the early parent–child relationships organize romantic relationship functioning during adulthood (Simpson et al., 2007; Sroufe et al., 2005a; see also Fraley & Roisman, in press) as well as evidence that adults' romantic relationships are rooted in earlier interpersonal experiences and are involved in shaping parenting quality (e.g., Allen et al., 2014; Collins & Sroufe, 1999; Krishnakumar & Buehler, 2000; Rauer et al., 2013). Moreover, the current study lends further support to the notion that early caregiving experiences help organize adult parenting outcomes by providing a foundation for competence in later

relationships outside the family context (see also Caspi & Elder, 1988; Shaffer et al., 2009). More important the current study extends prior research on this topic by integrating the contributions of experiences with parents, peers, and romantic partners in the development of parenting.

Altogether, the findings from this study extend our understanding of how extrafamilial relationship experiences are involved in the carry forward of early parent–child relationship experiences across development and across generations. Still, questions remain about the specific psychological processes that account for the associations between adults' earlier interpersonal experiences and the parenting they provide to their own children. Attachment theorists have hypothesized that individuals' internal working models of close relationships are a mechanism by which earlier relationship experiences are internalized and organize functioning in later interpersonal contexts (Bowlby, 1988; Sroufe & Fleeson, 1986). Other theoretical perspectives emphasized additional psychological characteristics—including adults' emotion regulation abilities, mental health, patterns of social information processing, self-esteem, and personality characteristics—as potential mediators of the intergenerational continuities of parenting (Belsky, 1984; Berlin, Appleyard, & Dodge, 2011; Caspi & Elder, 1988; Chen & Kaplan, 2001; Kerr et al., 2009). Moreover, biological processes also may be involved in mediating the predictive effects of earlier relationship experiences for adult parenting outcomes. For example, there is increasing interest in the idea that neurobiological systems are tuned by early parent–child relationship experiences and underlie sensitive, supportive parenting in adulthood (e.g., Groh & Roisman, 2009; Meaney, 2010; Schore, 2000). Additional multilevel, longitudinal research is needed to identify the specific cognitive, emotional, and biological processes that are involved and how they work together to mediate the associations between adults' earlier interpersonal experiences and the parenting quality they provide for their own children.

Another possibility is that the longitudinal associations between adults' parenting and their earlier interpersonal experiences are genetically mediated. For example, we cannot rule out the possibility that intergenerational continuities in parenting quality were due to unmeasured genetic factors shared between mothers and their children (i.e., a passive gene–environment correlation). Likewise, individuals' genetically influenced behavioral characteristics may have actively shaped their experiences in extrafamilial relationships and contributed to their later parenting quality. Indeed,

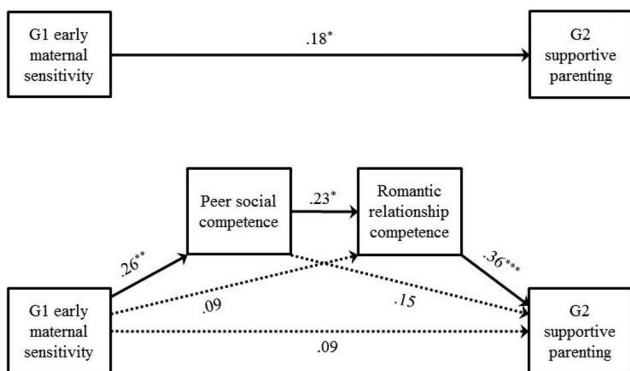


Figure 2. Model of the direct and indirect predictive effects of first generation (G1) early maternal sensitivity on second generation (G2) supportive parenting through peer social competence during childhood and adolescence and romantic relationship competence during young adulthood. Adults' educational attainment, socioeconomic status, and age at first childbirth were included as covariates. Values represent standardized beta coefficients. $N = 113$. * $p < .05$. ** $p < .01$. *** $p < .001$.

behavioral–genetic investigations have indicated that measures of children’s environments, adults’ romantic relationships, and parenting quality are modestly heritable (e.g., Kendler & Baker, 2007; Klahr & Burt, 2014; but see Roisman & Fraley, 2008). As a result, the longitudinal associations reported in this study can only be interpreted as being consistent with, but not confirmation of, causal explanations. Future genetically informed longitudinal studies would be especially valuable in clarifying the degree to which the interpersonal antecedents of parenting quality are attributable to environmental or genetic causal processes.

Although the intergenerational association in supportive parenting observed in this study was rather long term and quite robust, it was modest in overall magnitude. One possible interpretation of this finding is that changes in parenting quality across generations may be relatively common. Extrafamilial relationships also have been implicated in promoting changes in parenting quality across generations. For example, there is fairly consistent evidence that romantic relationship experiences in adulthood may moderate the intergenerational transmission in negative, harsh, or abusive forms of parenting (e.g., Conger et al., 2012; Conger et al., 2013; Quinton & Rutter, 1984; see also Egeland, Jacobvitz, & Sroufe, 1988). We did not pursue questions related to moderation in the current study because of concerns of limited statistical power with this sample size. Nonetheless, we encourage additional large-sample, longitudinal research into the factors that may amplify or diminish the effects of early interpersonal experiences for parenting outcomes in adulthood.

Within the MLSRA, behavioral observations of second generation parenting were collected across young adulthood (ages 21–31 years; see Kovan et al., 2009), whereas measures of adults’ effectiveness within romantic relationships were collected at age 23 and 32 years. Thus, to investigate the role of romantic relationship competence in mediating the intergenerational continuities in supportive parenting, it was necessary for this study to focus on an interview-based measure of parenting quality collected when participants were age 32 years. Although there are limitations to raters’ impressions of adults’ parenting quality based on interview responses, interview-based measures have been used in prior investigations of the developmental antecedents of positive parenting (e.g., Shaffer et al., 2009) as well as behavior–genetic studies of the influence of parent–child relationships for children’s development (e.g., Caspi et al., 2004). Moreover, our confidence in the associations observed in this study is strengthened by the fact that the measures of first generation maternal sensitivity and peer social competence were based on objective assessments. As a result, the associations between adults’ parenting and their earlier experiences with their own parents and with peers cannot be attributed to common method variance. Still, it will be important to replicate the findings reported in this study with observational-based measures of adults’ romantic relationship functioning and parenting behaviors to assess the robustness of the effects across different methodologies. Likewise, additional longitudinal research is needed to determine whether the mediational processes documented in this study differ as a function of the sociodemographic characteristics of the participants and the focus on higher versus normative risk samples.

In summary, the results from this longitudinal study indicate that the intergenerational transmission in supportive parenting is mediated, at least in part, by competence in later relationships with

peers and romantic partners. Thus, patterns of parental care appear to be actively carried forward across generations via experiences in extrafamilial relationships. By highlighting the interpersonal processes that underlie the intergenerational continuities in parenting, the findings from this study provide a map of possible deflection points in the developmental pathway connecting early caregiving experiences and adult parenting outcomes. More general, the current study also illustrates the value of combining information about individuals’ experiences in different relationships and at different ages to more fully understand the development of adult parenting outcomes. We hope this work will help inspire future research into the complex developmental processes by which individuals’ interpersonal histories contribute to adults’ parenting quality.

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