

The Continuity of Parenting Across Two Generations Using a Prospective, Longitudinal
Design

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By

Nikki M. Kovan

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L. Alan Sroufe, Advisor

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Abstract

This study aims to extend the literature on the continuity of parenting across two generations using prospective, longitudinal data. 61 mothers and fathers were followed for an average of 32 years and were studied at multiple time points and in multiple settings. Parent-child interactions were videotaped at 24 months of age in both generations. The goals of the study were: (1) to examine the role of first generation parenting as it influences the quality of parenting provided by the second generation, controlling for parental IQ in both generations, second generation childhood life stress, second generation childhood SES and first generation parenting during adolescence; (2) to investigate the role of contextual similarity at the time of the 24 month parenting assessment in both generations; (3) to explore the role of gender in the continuity of parenting across two generations; and (4) to examine the moderating role of second generation romantic relationship support in the continuity of parenting.

Multiple regression analyses revealed that first generation parenting quality predicted the quality of parenting provided by second generation parents, above and beyond first and second generation IQ and childhood life stress, with the exception of hostility. Second generation SES averaged across childhood and first generation parenting during adolescence were not related to second generation parenting, while second generation IQ was also significantly related to the quality of parenting provided by second generation parents. Correlation analyses indicated that life stress measured concurrently to parenting quality was not related to the quality of parenting provided in either generation, and therefore does not provide any additional explanation of the continuity of parenting. An unexpected finding was that the role of first generation

parenting appeared to be important only for fathers based on bivariate correlations. Finally, none of the moderation analyses examining second generation romantic relationship support in the continuity of parenting were significant. Taken together, these findings suggest that a person's earliest experiences of parenting continue to be important and play a significant role in the quality of parenting provided to the next generation, above and beyond many of the contextual factors known to relate to parenting quality. This may be true especially for fathers, although this finding needs to be replicated given the small number of fathers examined in this study. Finally, romantic relationship support did not appear to moderate the impact of early parenting experiences.

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The Continuity of Parenting Across Two Generations Using a Prospective, Longitudinal Design

The importance of parenting for both the current adjustment and later developmental outcomes of children has been well established (see Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000, for a review); on the other hand, the field has only begun to study the developmental antecedents of parenting. One promising area of study has been the continuity of parenting across generations. This intergenerational hypothesis is an intuitive idea that for some time has had widespread appeal, both in the general population and among researchers. Rigorous examination of the developmental pathways from childrearing experiences to parenting has been difficult. The extant literature on the transmission of parenting across generations relies primarily on retrospective report of childrearing history and has focused on abusive and/or harsh parenting practices, with only a few exceptions that have explored the intergenerational hypothesis using prospective, longitudinal data (Belsky, Jaffee, Sligo, Woodward & Silva, 2005; Chassin, Pressin, Todd, Rose, & Sherman 1998; Chen & Kaplan, 2001; Conger, Neppl, Kim & Scaramella, 2003; Capaldi, Pears, Patterson, & Owen, 2003; Hops, Davis, Leve, & Sheeber, 2003; Putaliez, 1998; Smith and Farrington, 2004). Further, attention to the mechanisms of the intergenerational transmission of parenting has been even less common and focuses primarily on social learning explanations (Burgess, 1979; Burgess & Youngblade, 1988; Crittenden, 1984; Gelles & Straus, 1979; Straus, 1983; Straus, Gelles, & Steinmetz; 1980; Simons, Whitbeck, Conger, & Chyi-In, 1991). A thorough examination of the pathways from childrearing history to later parenting, including exploration of factors that relate to continuity and discontinuity

across the generations, requires longitudinal data sets that follow individuals from childhood into adulthood. Additionally, a number of researchers have noted the importance of having similar measures of parenting at similar points in development, while controlling for the contextual transmission of parenting in order to assure the strongest test of continuity (Serbin & Karp, 2003; van IJzendoorn, 1992).

Finally, given the complexity of the research designs necessitated by the study of the intergenerational transmission of parenting, the following conventions will be used: Generation 1 (G1) refers to the grandparents; Generation 2 (G2) refers to the parents; and Generation 3 (G3) refers to the children.

Intergenerational studies using retrospective report of first generation parenting

A number of early semi-prospective studies found evidence of the intergenerational transmission of abuse (Egeland, Jacobvitz, & Sroufe, 1988; Hunter, Kilstrom, Kraybill & Loda, 1978; Straus, 1979; Pears & Capaldi, 2001). The rates of transmission for these types of studies range from 18% to 40%. In a review of this literature, Kaufman and Zigler (1987) estimate an average rate of transmission of 30%. However, this rate of transmission is likely an under-estimate for a number of reasons. First, many of the studies they reviewed did not follow the third generation children past the first few years of life, thereby excluding from their estimate anyone who may have experienced abuse later in childhood. Second, the standard for abuse that was used for G2 was abuse that had been reported and confirmed and this is an extremely restricted definition of abuse, particularly given the standard of abuse used for G1 abuse (retrospective report).

Studies looking at more continuous measures of parenting such as harsh parenting

and discipline have found similar findings of continuity across generations using retrospective report of first generation parenting (Covell, Grusec, & King, 1995; Murphy-Cowan & Stringer, 1999; Rodriguez & Sutherland, 1999; Simons, Whitbeck, Conger, & Chyi-In, 1991). Still, the major failing of this area continues to be reliance on the use of self-report of childrearing history. Report of events that happened many years before are often subject to the context of current circumstances, and despite best intentions, there is often inaccuracy in the recall of details from the past. Further, social desirability factors may lead both those who committed the abuse and those who were abused to both over-report and under-report abusive histories (Belsky, 1993; Egeland, 1993; Zeanah & Zeanah, 1989).

A smaller literature has explored the transmission of warm and supportive parenting as well (Belsky, Youngblade, & Pensky, 1990; Cox, Owen, Lewis, Riedel, Scalf-Michler, & Suster, 1985; Kretchmar & Jacobvitz, 2002; Simons, Beaman, Conger, & Chao, 1993). Like the harsh and abusive parenting literature though, many of these studies relied on retrospective report of G2's experience of parenting from G1. For instance, pregnant women who recalled their own parents as being supportive, less intrusive and more sensitive during their childhood, had better observed interactions with their infants later (Cox et al., 1985); and, Simons and colleagues (1993) found intergenerational continuity of supportive parenting based on the mother's retrospective report of their childrearing experience and their adolescent children's report of their parenting, as well as in-home observation of their parenting. Also using retrospective report of G1's parenting, Belsky, Youngblade and Pensky (1990) found that G2's reported history of supportive parenting measured during pregnancy predicted G2's

observed positive affect with G3 at three years of age. They also found that a history of rejection related to G2's observed negative affect with G3. Finally, Kretchmar and Jacobvitz (2002) found that mothers who reported feeling more supported and accepted by their own mothers as children were observed to be more supportive and less intrusive with their infants at 9 months. Also, G2's retrospective report of G1's parenting also differentiated secure from insecure dyads at 18 months. Although these studies all use retrospective report of G1's parenting, they all use independent measures of G1's and G2's parenting and sometimes multiple informants of G2's parenting.

Studies exploring the relation between a parent's own attachment history and their infant's attachment security have often been taken as evidence for the intergenerational transmission of parenting as well. Indeed, there are quite a few studies demonstrating continuity of attachment across the two generations as measured by the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985) and the Strange Situation (SS; Ainsworth, Blehar, Waters & Wall, 1978) (for a review, see van IJzendoorn, 1995). The strongest of these studies measured the parent's attachment representations prior to them becoming a parent so as to establish the direction of effect (Benoit & Parker, 1994; Fonagy, Steele & Steele, 1991; Levine, Tuber, Blade & Ward, 1991; Steele, Steele & Fonagy, 1996; Ward & Carlson, 1995; Cohn, Cowan, Cowan & Pearson, 1992). The range of concordance in attachment across the generations ranged from 65% to as high as 81% in these studies, depending on whether concordance was looked at using a two-way or a four-way classification system of attachment. However, studies of attachment do not include direct measures of parenting behavior or qualities per se; on the other hand, although attachment is most frequently discussed at the level of representation, both an

infant and adult's representation of attachment relationships are theoretically in response to the quality of caregiving provided by the attachment figure. For example, mothers with insecure attachment representations in adulthood report a history of rejection (Main & Goldwyn, 1984). Further, a number of studies have demonstrated that the quality of parenting provided by the primary caregiver (most frequently studied is sensitive responsiveness) does impact the quality of the infant's attachment to that caregiver (Ainsworth, Blehar, Waters, & Wall, 1978; Hesse & Main, 1990; Isabella, 1993; Isabella & Belsky, 1991; Main & Goldwyn, 1984; Van IJzendoorn, 1995), although the findings are mixed (e.g. Ward & Carlson, 1985; van IJzendoorn, Kranenburg, Zwart-Woudstra, Van Busschbach, & Lambermon, 1991).

Movement towards prospective studies

More recently, several studies have examined the intergenerational hypothesis using a prospective, longitudinal design (Belsky, Jaffee, Sligo, Woodward & Silva, 2005; Chassin, Pressin, Todd, Rose, & Sherman 1998; Chen & Kaplan, 2001; Conger, Neppl, Kim & Scaramella, 2003; Capaldi, Pears, Patterson, & Owen, 2003; Hops, Davis, Leve, & Sheeber, 2003; Putaliez, Costanzo, Grimes, & Sherman, 1998; Smith and Farrington, 2004). These studies have obvious advantages over the previous research reviewed, and move the field closer to answering questions regarding the intergenerational transmission of parenting. Chassin et al. (1998) examined the role supportive parenting played in the transmission of smoking habits across generations. They assessed G1's parenting while G2 were adolescents using the adolescent's report. At the follow-up when the third generation were adolescents, Chassin and colleagues found continuity of supportive parenting only when assessed by G2's self-report of parenting, but not when assessed by

G3's report of G2's parenting. Chen and Kaplan (2001) found continuity of constructive parenting across two generations with a large, representative sample and using a similar design to Chassin and colleagues. However, using the same reporter of both G1 and G2 parenting does not provide as robust a test of continuity as would multiple observers and/or use of observational data because the results could simply be a method effect. Indeed, the fact that Chassin and colleagues only found continuity based on G2's report of both the parenting they received and their own parenting makes this possibility seem more likely.

The following studies go one step further and use observational measures and/or multiple informants of parenting in both generations (Conger, Neppl, Kim & Scaramella, 2003; Capaldi, Pears, Patterson, & Owen, 2003; Hops, Davis, Leve, & Sheeber, 2003; Huesmann, Eron, Lefkowitz, & Walder, 1984). Huesmann and colleagues found that aggressive parenting in G1 predicted aggressive parenting in G2 over 20 years later. Importantly, this was one of the earliest studies to use multiple informants of parenting in both generations. Still, as the authors note, it suffers from some limitations. First, parents in both generations were asked about how they might hypothetically respond to a child's aggressive acts instead of being asked about how they actually respond to their child's misbehavior. Second, the measure of parenting in the second generation includes items about aggression in general and not just aggressive parenting. Given the weaknesses in the measures of parenting however, the estimation of continuity across the two generations may be an over-estimation.

Conger, Neppl, Kim and Scaramella (2003) examined the intergenerational transmission of aggression and hostile parenting using observational measures of parent-

child relationships and multiple informants of aggressive behavior. The authors found that hostile parenting by G1 and G2 were related despite being measured at least 5 years apart. Thornberry, Freeman-Gallant, Lizotte, Krohn, and Smith (2003) didn't examine the continuity of parenting directly, but did include measures of G1 and G2 parenting in their model of the continuity of anti-social behavior across generations. For the G1 parenting measure, they used an average of G1's self-report of parenting measured 4 times between the ages of 14 and 15.5. Measures of G2's anti-social behavior were recorded on 6 occasions between the ages of 14.5 – 17.5. G2's self-report of parenting of G3 was measured at one time point (sometime after G3's 8th birthday) and included many of the same items as the self-report measure used with G1. Finally, the other primary caregiver reported on the anti-social behavior of G3. Thus, they used different reporters of parenting in each generation, but measured parenting of children in different developmental periods (middle childhood versus adolescence). Although the authors did not find a direct path between G1 and G2 parenting, they did find an indirect path through G2's anti-social behavior in adolescence. In other words, G1's poor quality parenting of G2 when they were a young adolescent (low monitoring and low affective ties) related to anti-social behavior later in G2's adolescence, and G2's anti-social behavior related to similarly poor parenting of G3.

Capaldi and colleagues (2003), using a sample of boys at-risk for anti-social behaviors, also found continuity of poor parenting (defined as low monitoring, harsh and inconsistent discipline and poor parent-child relations) from G1 to G2, measured an average of 12 years apart. The measure of parenting in the first generation included observation, self-report and child-report, while parenting in the second generation

included self-report and mother-report of the father's parenting. The authors also found that anti-social behavior of G2 partially mediated the relation between G1 and G2 parenting. Notably, because this study only included boys in the original sample of children, there were no data on the mothers of the third generation used in these analyses. The parenting quality of the mothers likely impacts the development of anti-social behaviors by G3 and influences the parenting quality of the G2 fathers. Finally, Hops and colleagues (2003) found continuity of aggressive parenting across two generations using observational measures of parenting in both the first and second generations. The authors note that the one major limitation of this study is the small sample size in the third generation (N=39) and therefore caution should be taken when generalizing to the larger population.

Smith and Farrington (2004) did not find continuity of parenting across two generations of parents. They too used a prospective, longitudinal design that followed at-risk male youths (G2) from inner city London. At the first time of assessment, G2 was between the ages of 8 and 10. At the second time of assessment, the G2 males were 32 and their children were between the ages of 3 and 15. Each generation of parents reported on their own parenting and their children's anti-social behavior. After controlling for anti-social behavior in each generation, the authors did not find continuity of authoritarian parenting across the two generations. They did find continuity of anti-social behavior within and across generations and they also found that parenting partially mediated the relation between parent anti-social behavior and child anti-social behavior in each pair of generations. This study has a number of methodological problems, including using the parent's self-report of their own anti-social behavior, their own

parenting and their child's anti-social behavior. Potential reporter bias may explain both the relation between parent and child anti-social behavior and why the authors found that parenting partially mediated the relation between parent and child anti-social behavior.

Regardless, using prospective, longitudinal designs and multi-informant and/or observational measures of parenting in both generations, four of these five studies provide good evidence for the intergenerational hypothesis. Despite these strengths, there is one major limitation in each of these studies. All of the studies began following the second generation during some point of adolescence and then measured G2's parenting when their children were either in toddlerhood or middle childhood. Parenting children in different developmental periods requires different parenting skills and behaviors, causing potential problems with measurement of parenting during such different developmental periods. Monitoring of a two-year-old child is a very different task from monitoring of an adolescent child. Furthermore, multiple studies have found that experiences during early childhood have a unique influence on later developmental adjustment and outcomes (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Gunnar, 2002; O'Connor et al., 2000; Sroufe, Carlson, Levy, & Egeland, 1999). Thus, research on the transmission of parenting should have age equivalence across the two generations to ensure equivalence in the developmental tasks and behavioral manifestations of parenting in each generation (Cairns, Cairns, Xie, Leung, & Hearne, 1998; Patterson, 1998; Rutter, 1998; Serbin & Karp, 2003).

To this point, Belsky, Jaffee, Sligo, Woodward and Silva (2005) improved on previous research by including measures of G1's parenting in different developmental periods in their prospective, longitudinal study of the continuity of warm and supportive

parenting across generations. Specifically, they used G1's report of their parenting style in G2's early childhood, G1's report of family climate in G2's middle childhood and adolescence, and G2's self-report of parent-child attachment in their adolescence, and observational measures of G2's warm and supportive parenting when their children were 36 months to examine the intergenerational hypothesis. Belsky and colleagues also statistically controlled for G3's observed behavior in order to account for the immediate effects the child may have had on G2's parenting during the observational session. All analyses were run separately for mothers and fathers in the second generation.

As expected, the researchers found that G1's parenting in each of the three developmental periods did relate to G2's parenting, measured on average 20 years after the study began. However, this relation held only for women. For men, G1's parenting at any of the developmental periods did not relate to G2's warm and supportive parenting of their preschooler. The authors suggest this could be for a number of reasons, including that they were examining warm and supportive parenting of three-year-olds which may not be the best parent construct to examine for fathers and that the G1 parents were all mothers. Perhaps G1 fathers played a greater role in the development of parenting in the second generation fathers than did G1 mothers and their study couldn't detect this as G1 fathering wasn't measured. Finally, although Belsky and colleagues did examine parenting in each generation at approximately the same age, the measure of G1 parenting in early childhood was a self-report measure of egalitarian and authoritarian parenting, while the measure of G2 parenting of G3 was an observational measure of warm and sensitive parenting. If the authors had used similar measures across time, they may have found that early experiences of parenting contributed uniquely to the prediction of G2

parenting of the same-aged children.

Romantic relationship quality as a moderator of continuity and discontinuity

Although the evidence for continuity of parenting across generations is growing, the mechanisms through which parenting is transmitted is less studied. Attachment theory provides one potential mechanism through which parenting is transmitted from generation to generation: internal working models of relationships (Bowlby, 1969/82, 1980). Bowlby asserts that by the end of the first year, infants have begun to construct internal working models of self, other and relationships based on their interactions with their primary caregiver or attachment figure. Caregivers who are responsive and consistent provide the child with an internal working model of adults as trustworthy and comforting and a complementary model of themselves as effectual and worthy of care. Alternatively, a child who experiences inconsistent care would develop a working model of adults as unreliable in times of need and of themselves as ineffectual and unworthy of care. The attachment relationship that forms a child's internal working model of relationships is not developed from specific behaviors per se, but from an organization or pattern of behaviors shown within the context of that relationship (Sroufe & Waters, 1977; Sroufe & Fleeson, 1986, 1988). Thus, continuity of parenting would be expected at the level of emotional qualities of parenting more than specific behaviors.

Furthermore, Bowlby (1980) believed that an individual's internal working model of relationships was increasingly stable after the first years of life, but change was possible, if unlikely. According to Bowlby, change would require multiple experiences within a relationship context that are inconsistent with the child's sense of self, as well as their relationship history. Thus, without some significant intervention, the internal

working model of relationships developed in infancy is carried forward in development and, upon becoming a parent, is reactivated with the child through the caregiving behavior. On the other hand, a high quality relationship with another adult at some point in childhood or adulthood may therefore be expected to relate to changes in parenting across generations and indeed, the evidence supports this prediction (Cohn, Cowan, Cowan, and Pearson, 1992; Egeland, Jacobvitz, & Sroufe, 1988).

Egeland, Jacobvitz and Sroufe (1988) was one of the earliest studies to explore romantic relationships in the transmission of abuse. In an at-risk sample of mothers and children, the authors found that women who had experienced abuse as children were more likely to break the cycle of abuse if they were in an emotionally supportive and satisfying romantic relationship as an adult. Reported happiness within interpersonal relationships has also been found to differentiate those mothers who broke the cycle of abuse and those mothers who did not (Caliso & Milner, 1992). Crockenberg (1987) found that early childrearing history and current support combined to predict the quality of parenting in adolescent mothers. Specifically, adolescent mothers who reported experiencing rejection in their childhood and who reported low social support from their partners were observed to be more punitive and angry with their toddlers than mothers who reported experiencing rejection in their childhood, but had supportive partners.

Taking advantage of a “naturally-occurring” experiment, Quinton and Rutter (1984, 1985) followed into adulthood a cohort of girls into who had spent part of their childhood in orphanages. On the whole, women who had been reared in orphanages were providing lower quality care for their toddlers than a control group of women who had not been reared in orphanages; that is unless they were involved in an emotionally

supportive relationship.

In a review of their own research on romantic relationship quality using normative samples, Cowan and Cowan (2005) report that parents who were classified as insecure using the AAI, but were observed to be in supportive romantic relationships, were rated higher on parenting quality than parents who were not in supportive relationships. This was particularly true for mothers who were coded as insecure using the AAI. Further, in two different interventions that attempted to improve the quality of the marital relationship, results showed improvements not just in the marital relationship but also in the parent-child relationship and in the academic and social functioning of the children one year later. Also using a low-risk sample of middle and working class mothers, Belsky, Youngblade and Pensky (1990) found that marital quality in the second generation moderated the impact of retrospectively reported G1 parenting, such that for those G2 mothers with a problematic childrearing history, a high quality marital relationship appeared to serve as a protective factor for G2's parenting.

Das Eiden, Teti, and Corn (1995) studied the relations between AAI classification, self-reported marital adjustment, observed parenting quality and G3 attachment quality in a sample of educated, middle-class mothers and their one- to five-year-old children. As expected, the researchers found that maternal working models related to both parenting quality and child attachment quality measured using the attachment Q-sort and that marital relationship quality also related to the child's attachment security. Additionally, for those mothers who were classified as insecure, their children were less likely to be insecure if the mothers reported being in a high quality marital relationship. The inverse was not found to be true; no relation between

marital relationship quality and child attachment security was found for mothers who were classified as secure.

Finally, in Belsky and colleagues' study of the transmission of warm and supportive parenting across two generations, the authors examined current partner support as a potential factor that may account for discontinuity in parenting (Belsky, Jaffee, Sligo, Woodward, & Silva, 2005). They used a self-report questionnaire of romantic relationship quality that yields four scales: maintenance, conflict, love and ambivalence. The researchers further combined the four scales using factor analysis and identified 2 factors: positive relationship quality (maintenance and love loaded on this factor) and negative relationship quality (conflict and ambivalence loaded on this factor). Neither positive nor negative romantic relationship quality contributed to the prediction of G2's parenting or moderated the relation between childrearing history and G2's parenting. Belsky and colleagues go onto suggest that this anomalous finding may be due to the fact that most previous research that has identified romantic relationship quality as an important factor in the discontinuity of parenting used high risk samples. According to the authors, romantic relationship quality may only play a protective role if there has been a history of extremely poor or abusive parenting. Further, it is possible that in such a low-risk sample, there were not enough cases of poor parenting to detect moderating effects.

The role of context in the intergenerational continuity of parenting

Several other gaps in the literature remain. From an ecological systems perspective, a variety of proximal and distal contextual, socio-cultural, and historical factors influence parenting and may influence the continuities and discontinuities in the

transmission of parenting (Belsky, 1984; Belsky & Jaffee, 2006; Bronfenbrenner, 1979). Few of the intergenerational studies adequately account for similarities in contextual factors across generations, despite the fact that this was called for in multiple reviews of the literature on the intergenerational continuity of parenting (Serbin & Karp, 2003; van IJzendoorn, 1992). Of the few that do control for contextual factors such as SES, several researchers have found that early childrearing histories predicted above and beyond these similarities in SES (Belsky, Jaffee, Sligo, Woodward & Silva, 2005; Egeland, Jacobvitz, & Sroufe, 1988; Simons, Whitbeck, Conger & Chyi-In, 1991).

Murphy-Cowan and Stringer (1999) looked to the role of SES when exploring discontinuity in the use of physical punishment across generations in a sample of Northern Irish parents. Interestingly, this study looked at levels of physical punishment and found similar levels across the two generations for lower class families, but a U-shaped curve for middle class families. That is, middle class parents who reported low and medium levels of physical punishment in their own history also reported using low and medium levels of physical punishment with their children. However, middle class parents who reported having received high levels of physical punishment by their parents actually reported using lower levels of physical punishment with their children. The authors note three potential explanations for this finding. First, they suggest that these parents may be rebelling against what they perceive to be overly harsh discipline by their parents and thus make an active decision to use a different disciplinary philosophy than their parents. The second possible explanation that Murphy-Cowan and Stringer offer up is that upward mobility of these parents opened their eyes to different methods of control and finally, they suggest that this finding could simply be a result of social desirability

factors playing out in the middle class parents. An additional explanation of this discontinuity is that these parents in the middle class face significantly fewer stressors than their parents who had been lower class and are therefore better able to cope with the stress associated with parenting.

Summary and Outline of Current Study

The goal of the current study is to extend the literature on the continuity of parenting across two generations by examining the continuity and discontinuity of both positive and negative parenting qualities using a prospective, longitudinal design with the same observational measures of parenting in the same developmental periods in both generations. Further, this study provides a unique opportunity to explore the particular importance of early childhood in the transmission of parenting across generations while controlling for IQ in both generations, SES, stressful life events and observational measures of parenting in adolescence. Given that several studies have found differences in intergenerational continuity based on gender (Belsky, Jaffee, Sligo, Woodward & Silva, 2005; Thornberry, Freeman-Gallant, Lizotte, Krohn, and Smith, 2003), the role of gender in the second generation parents will also be explored. Finally, this study will explore the role of having a supportive, romantic relationship in the relation between early caregiving history and current parenting.

Research Questions

Question 1: What are the relations between first and second generation parenting during early childhood?

1a. Are these relations significant after controlling for first and second generation IQ, childhood life stress, childhood SES, and first generation parenting during adolescence?

1b. Are the relations between first and second generation parenting during early childhood explained by similarities across the generations in the context in which each generation is parenting?

Question 2: Is the relation between first and second generation parenting accounted for by similarities in the context in which each generation is parenting?

Question 3: What is the role of gender in the continuity of parenting young children?

Question 4: Does the second generation parent's romantic relationship quality moderate the relations between first and second generation parenting?

Method

Participants

The subjects in this study were a subset of 61 participants (26 males) of a prospective, and currently ongoing, longitudinal study of mothers and their firstborn children who were recruited from Minneapolis public health clinics when the mothers were in their third trimester of pregnancy (Egeland & Sroufe, 1981). Informed consent was obtained prior to the start of the study and at each of the following assessments. This low socioeconomic status community sample was considered high-risk and was demographically representative of urban Minneapolis at the time of recruitment; 62% of the mothers were single, 86% of the pregnancies were unplanned, 40% had not completed high school, and 80% of the mothers were white. At the time of delivery, the mothers ranged in age from 12 to 37 years ($M = 20.52$, $SD = 3.65$). Subject attrition occurred primarily in the first 18 months (from 250 in the newborn period to 195 at 18 months); there was only 2% attrition from 18 months to the middle elementary school years.

Data for the current study are drawn from assessments completed from the ages 12 months to 32 years. The subset sample was determined by those participants who have become parents and completed a 24 month assessment with their child. Any missing data from the variables used in the following analyses, collected from the 12 months to 28 years of age, for that subset sample were imputed using single imputation in SPSS with maximum likelihood estimation (Yuan, 2000). Overall, 5% of data used in the current analyses were missing and data were assumed to be Missing at Random. Also, prior to imputation, data were examined for outliers and any score that was greater than 3SDs

above or below the mean were replaced with the value that was 3SDs from the mean. This was done again for any value that was imputed and was either 3SDs above or below the mean. All descriptive statistics and inter-correlations among the variables were examined both prior to and after imputation in order to ensure that imputation did not substitute impossible values.

Finally, an additional 51 participants have become parents but did not participate in the 24 month parenting assessment at the time of publication. Eight of those participants have children younger than 24 months, 13 of the participants were missed because the project had not yet begun collecting 24 month parenting assessments, 1 participant died before their child turned 24 months, 3 participants were in jail, 7 declined to participate and the rest are missing because of an inability to locate them at the time their child was 24 months of age. When parents with a 24 month parenting assessment were compared to parents for whom the 24 month assessment was missed on G1 Early Childhood Life Stress, G1 Early Childhood SES, G1 and G2 educational attainment, G1 and G2 IQ, G1 Supportive Presence, G1 Quality of Assistance, G1 Hostility, and G1 Overall Parenting Quality, there were no significant differences found.

The subjects in this study were 66% Caucasian, 16% African-American, 16% mixed race and 2% Native American. At the time of the 26 year assessment, 85% had achieved at least a high school degree, while 5% received a college degree or a professional degree.

Procedures and Measures

Demographics. Interviews with first generation mothers at multiple time points in early childhood were coded to obtain demographic information, including: parent age,

race of parent and child, parent employment and educational status, and family income. In the second generation, demographic information was obtained interviews with the parents at age 16, 19, 23, 26, 28, and at the second generation parenting assessments at 24 months.

Socioeconomic Status. SES was derived from scores on the Duncan Socioeconomic Index (Stevens & Featherman, 1981). This score is based on equations using percentages of occupation holders in the population who have achieved given levels of income and education. SES was measured during the prenatal period, at 42-months, 54 months, during first, second, third and sixth grade, and at age 16. Those scores were standardized and averaged to create a measure of childhood SES for second generation parents.

Life Stress Inventory. The Life Stress Scale (Egeland, Breitenbucher, & Rosenberg, 1980) was given to first generation mothers 7 times from infancy to age 17. This revised version of the scale contains 40 potentially stressful life events, and the mother is asked to report the occurrence of any of these events during the previous 6 or 12 months. Most items were from Cochrane and Robertson's (1973) Life Events Inventory. Additional items were added relating to difficulties with welfare, financial hardship, separation from a partner, and an increase in conflicts with friends and the items were weighted according to severity. For the Childhood Life Stress Composite, the scores from each assessment given to the first generation mothers were standardized and averaged. For the G1 Parent Life Stress measure in the first generation, the scores from the 12, 18, and 30 month assessments were standardized and averaged. For the second generation, the Adolescent Life Events Scale (ALES) was administered at age 16 and 19.

The ALES is an adaptation of the Adolescent Perceived Events Scale (Compas, Davis, Forsythe, & Wagner, 1987) and consists of 96 items drawn from a pool of items generated from open-ended reports of adolescents. The Life Stress Scale was also given at age 23, 26 and 28 to the adult participants. The score on the Life Stress Scale or the ALES from the assessment closest to when the participant completed the 24 month parenting assessment was used as the measure of G2 Parent Life Stress in the second generation.

First Generation IQ. Maternal IQ was measured using the Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1955). The WAIS is a standardized measure of general intellectual functioning designed to be used with individuals over 16 years of age. It is a point scale consisting of 11 subtests, each with a mean of 10 and a SD of 3. The mothers were administered the following three subtests: Comprehension, Similarities, and Block Design. Each subtest was administered individually by a project investigator trained in administration of the WAIS. The three subtests administered are highly reliable (Comprehension = .79; Similarities = .87; and Block Design = .86; Wechsler, 1955) and are highly correlated with the Full Scale IQ (range = .69 to .74).

Second Generation IQ. Participants were administered the Wechsler Intelligence Scale for Children – Revised (WISC-R) when they were in third grade by an individual trained in administration of the WISC-R. The WISC-R is a measure of general level of intelligence or mental capacity for children from 6 through 16 years of age. The entire test consists of 12 subtests, but an abbreviated short-form was used that included three scales: Similarities, Vocabulary and Block Design. This three subtest form meets Salvia & Ysseldyke's (1985) criteria for research use. Reliabilities of each subtest are .79 or

greater and Sattler (1982) reports a validity coefficient of .93 (correlation with Full Scale IQ). Rather than prorating, Sattler's (1982) method of computing deviation IQ's for short forms was employed. This more accurate method accounts for the number of subtests administered, the correlations among these subtests and the total scaled score points earned by the examiner.

First and Second Generation Parenting (24 months). Parents in both the first and second generation participated in a tool problem task with their 24-month-old children developed by Matas, Arend and Sroufe (1978). The tool problems are a set of four problem solving situations of increasing complexity, too difficult for the child to solve on his or her own, and are designed to frustrate the dyad. The following qualitative scales were used in this study: Supportive Presence, Quality of Assistance, Hostility and Overall Parenting. Supportive Presence assesses the parents' ability to serve as a secure base for their children and to be emotionally involved with the children as they approach the tools and is coded on a 7-point scale. Quality of Assistance, also a 7-point scale, measures the parents' ability to offer the minimal assistance necessary for their children to complete the task and the parents' ability to help their children see the connection between the actions and the solution. The Hostility Scale is designed to measure the parent's expression of anger, rejection or dismissal of the child and is rated on 7-point scale. Overall parenting is a 5-point scale and is a qualitative rating of how well the parent supports the child emotionally, and provides the appropriate structures and supports for the child to have a positive, problem-solving experience during the tasks. Reliability in first generation 24 month parenting ranged from .61 to .75, using intraclass correlations from a subset of 34 cases. Reliability in second generation 24 month parenting ranged

from .65 to .87, using intraclass correlations from a subset of 17 cases.

First Generation Parenting (13 years). When the second generation parents were 13 years old, they were videotaped with their mothers, or with both parents, in a series of four paradigms in the laboratory. Most families consisted of mother-child dyads, with a limited number of fathers or father-figures participating. The tasks include: creation of an anti-smoking campaign, object assembly completed with the parent blindfolded, a discussion of the results of imaginary events, and collaboration on a Q-sort of an ideal person. The tasks were designed to assess the family's ability to work together, the extent to which each family member could participate freely, and the parent's ability to abdicate some control to the child. Balance II, a seven-point liker-type rating of the extent to which parents support the child's autonomy, a key developmental issue of adolescence, was used in the following analyses. The intraclass correlation between coders was .84 for this scale on 129 cases.

Second Generation Romantic Relationship Support. At each second generation parent-child assessment, the parent was asked to complete an interview in which they were asked about the quality of support provided by a romantic partner. 48 participants were in a romantic relationship at the time of the 24 month parent interview, and 42 were in a relationship with their child's other biological parent. Romantic relationship support is a composite of three 5-point ratings: a general description of the relationship quality ($M = 3.79$, $SD = .85$), satisfaction with the relationship ($M = 3.98$, $SD = .98$) and closeness to their partner ($M = 4.19$, $SD = .91$). Cronbach's alpha for the 3 items was .84.

Analysis Plan

Question 1: Intergeneration continuity of parenting

Bivariate two-tailed correlations were calculated between all potential independent variables, including first and second generation IQ, G2's childhood SES, G2's childhood life stress, first and second generation life stress concurrent to parenting, first generation parenting in early childhood and early adolescence, G2 romantic relationship support, and second generation parenting in early childhood. Given the small sample size, only variables that were significantly correlated with the outcome measures were included in the following hierarchical regression analyses.

Hierarchical linear regressions were conducted predicting both positive parenting and hostile parenting in the second generation. First and second generation IQ were entered in the first step, while early childhood SES, childhood life stress, and early childhood life stress change were entered in the second step of the regression equation for each parenting construct. In the third step, first generation parenting during early adolescence was entered. In the last step, the relevant first generation early childhood parenting variable was entered.

Question 2: Contextual similarity and the intergenerational continuity of parenting

Intercorrelations between G1 life stress and G2 life stress measured concurrently to the parenting assessment and all first and second generation parenting constructs were run.

Question 3: The role of gender in the intergenerational continuity of parenting

Bivariate two-tailed correlations were calculated between all first and second generation parenting variables separately for second generation fathers and mothers.

Question 4: Romantic relationship quality as a moderator of the intergenerational continuity of parenting

Finally, in order to test the role of romantic relationship support on the continuity

and discontinuity of parenting, a hierarchical linear regression was used with each of the four second generation parenting constructs. Parenting in the first generation was entered in the first step and romantic relationship support was entered in the second step. In the third step, an interaction term between first generation parenting and romantic relationship support was entered in order to test the hypothesis that romantic relationship support moderates the relation between first and second generation parenting (Baron & Kenny, 1986).

Results

Question 1: Intergenerational continuity of parenting

Means, standard deviations, and skew were computed for all first and second generation parenting variables in the whole sample, as well as separately for mothers and fathers (see Table 1). Means, standard deviations, and skew were also computed for the whole sample for all other independent variables (see Table 2). All variables were in an acceptable range of normal for hierarchical linear regression analyses. Inter-correlations between all potential independent variables for the regression analyses were also computed (see Table 3). First and second generation IQ were significantly correlated ($r = .42, p < .01$) and first and second generation IQ were also significantly correlated with G2's childhood SES composite ($r = .68, p < .01$ and $r = .48, p < .01$, respectively). Finally, all of the first generation parenting constructs were significantly inter-correlated and the correlations ranged from .43 to .92, with hostility being negatively correlated with the three other constructs as expected.

In addition, two-tailed bivariate correlations were run between all second generation parenting variables and the independent variables that were selected for theoretical reasons to be used in the regression analyses (see Table 4). First generation IQ was near significance with G2 supportive presence ($r = .23, p < .1$), G2 quality of instruction ($r = .22, p < .1$), G2 hostility ($r = -.23, p < .1$), and G2 overall parenting ($r = .23, p < .1$). Second generation IQ was significantly related to G2 supportive presence ($r = .26, p < .05$), G2 quality of instruction ($r = .36, p < .01$), and G2 overall parenting ($r = .37, p < .01$), and was nearly significant to G2 hostility ($r = -.23, p < .1$). Finally, all of the first generation parenting constructs related to most of the second generation parenting

constructs. Specifically, G1 supportive presence related to G2 supportive presence ($r = .39, p < .01$), G2 quality of instruction ($r = .42, p < .01$), G2 hostility ($r = -.26, p < .05$), and G2 overall parenting ($r = .46, p < .01$). G1 quality of instruction was significantly correlated to G2 supportive presence ($r = .32, p < .05$), G2 quality of instruction ($r = .38, p < .01$), and G2 overall parenting ($r = .39, p < .01$). G1 hostility was negatively related to G2 supportive presence ($r = -.27, p < .05$), G2 quality of instruction ($r = -.34, p < .01$), and G2 overall parenting ($r = -.34, p < .01$). And G1 overall parenting was significantly correlated with G2 supportive presence ($r = .33, p < .01$), G2 quality of instruction ($r = .34, p < .01$), G2 hostility ($r = -.28, p < .05$), and G2 overall parenting ($r = .40, p < .01$).

Due to the small sample size and in an attempt to improve power, those variables that presented a zero correlation with the dependent variables were not used as control variables in the hierarchical linear regression models predicting the second generation parenting constructs; these included G2 childhood SES and the Age 13 balance II parenting construct (see Table 4). In each hierarchical linear regression equation predicting all four second generation parenting constructs, first and second generation IQ were entered into the first step, G2's childhood life stress composite was entered in the second step, and the corresponding first generation parenting variable was entered in the third step. Change in R^2 was calculated at each step as well. For all four regression analyses, post hoc power analyses indicated sufficient power to detect effects (the range of power was from .79 to .84).

Given the nature of overall parenting as the most global measure of the quality of parenting provided in each generation, I started with it as the most basic test of continuity. 29% of the variance in G2 overall parenting quality was accounted for by all

of the independent variables in the regression model ($F(4, 56) = 5.70, p < .01$). First and second generation IQ in the first step of the regression equation accounted for a significant amount of the variance ($\Delta R^2 = .14, F\Delta(2, 58) = 4.89, p < .05$, see Table 5). The second step of the regression (G2 childhood life stress) was not significant and the final step, G1 overall parenting quality, accounted for an addition 12% of the variance in G2 overall parenting quality ($F\Delta(1, 56) = 9.60, p < .01$). G2 IQ and G1 overall parenting quality were both significant predictors of G2 overall parenting quality in the final step of the model ($\beta = .31, t = 2.49, p < .05$ and $\beta = .35, t = 3.10, p < .01$, respectively).

The total amount of variance accounted for by all of the variables entered into the regression equation predicting G2 supportive presence was 21% ($F(4, 56) = 3.77, p < .01$). The first and second steps did not account for a significant amount of variance, but the final step which included G1 supportive presence was significant ($\Delta R^2 = .09, F\Delta(1, 56) = 6.55, p < .05$, see Table 6). In the final step of the model, G1 supportive presence is the only significant predictor of G2 supportive presence ($\beta = .32, t = 2.56, p < .05$).

All of the variables in the regression equation accounted for a total of 27% of the variance in G2 quality of instruction ($F(4, 56) = 5.27, p < .01$). The first step of the regression, which included first and second generation IQ, accounted for 14% of the variance ($F\Delta(2, 58) = 4.61, p < .05$, see Table 7). The second step was not significant and G1 quality of instruction in the third step accounted for 10% of the variance in G2 quality of instruction ($F\Delta(1, 56) = 7.73, p < .01$). G2 IQ and G1 quality of instruction were both significant and equally weighted predictors of G2 quality of instruction in the final step of the model ($\beta = .29, t = 2.27, p < .05$ and $\beta = .32, t = 2.78, p < .01$, respectively).

The regression equation predicting G2 hostility was not significant and neither

were any of the independent variables in the final step of the model and so the null hypothesis that second generation hostility is predicted by first generation hostility was rejected (see Table 8).

Question 2: Contextual similarity and the intergenerational continuity of parenting

Two-tailed bivariate correlations were computed between first and second generation parenting and first and second generation parenting stress (see Table 9). Although first and second generation parenting stress were significantly correlated ($r = .30, p < .05$, see Table 3), neither were significantly correlated to any of the parenting constructs in either generation. Given this non-significant relation, it was deemed unnecessary to create a change score and control for the similarity in life stress at the time of parenting using hierarchical linear regression equation.

Question 3: The role of gender in the intergenerational continuity of parenting

In order to examine the role of gender on the intergenerational continuity of parenting, two-tailed correlations between all first and second generation parenting variables were computed separately for mothers and fathers (see Tables 10 and 11). For G2 fathers, all four parenting constructs in the first generation were related to all four parenting constructs in the second generation, with the exception of G1 hostility and G2 supportive presence which was nearly significant ($r = -.38, p < .1$), and correlations ranged from .43 to .75. For mothers on the other hand, the only correlation that was near significance was between G1 and G2 quality of instruction ($r = .31, p < .1$), while none of the other correlations between G1 and G2 parenting were significant.

Question 4: Romantic relationship support as a moderator of the intergenerational continuity of parenting

In order to explore the role of romantic relationship support in the continuity of parenting across the two generations, all first generation parenting variables and G2 romantic relationship support were standardized and interaction terms were computed between G2 romantic relationship support and each of the four G1 parenting constructs, supportive presence, quality of instruction, hostility and overall parenting quality. Next, a hierarchical linear regression analysis predicting each of the four G2 parenting variables was used to test the moderating role of G2's romantic relationship support. In the first step of the regression model, the relevant G1 parenting construct and G2's romantic relationship support were entered. The interaction term between the relevant G1 parenting and G2 romantic relationship support was entered in the second step of each regression. The interaction term was not significant in any of the four regressions predicting G2 supportive presence, G2 quality of instruction, G2 hostility or G2 overall parenting quality, although the interaction term neared significance in the regression model predicting G2 overall parenting quality ($\beta = -.27, p < .1$). G2 romantic relationship quality was also not a significant predictor in any of the four regression models. And with the exception of G2 hostility, each of the G1 parenting constructs were significantly related to each of the G2 parenting constructs.

For the regression model predicting G2 overall parenting quality, G1 overall parenting quality was a significant predictor ($\beta = .41, t = 3.09, p < .01$, see Table 12) and this combined with romantic relationship support accounted for 17% of the variance ($F\Delta(2, 45) = 4.69, p < .05$). In the second step, the interaction term approached significance ($\beta = -.27, t = -1.98, p < .1$) and accounted for an additional 7% of the variance ($F\Delta(1, 44) = 3.93, p < .1$). The total model accounted for 24% of the variance in

G2 overall parenting quality ($F(3, 45) = 4.64, p < .01$). In the regression model predicting G2 supportive presence, only G1 supportive presence was a significant predictor in the final step of the model ($\beta = .41, t = 2.94, p < .01$, see Table 13) and the whole model accounted for 19% of the variance ($F(3, 45) = 3.05, p < .05$). In the regression model predicting G2 quality of instruction, only G1 quality of instruction was a significant predictor in the final step of the model ($\beta = .38, t = 2.69, p < .05$, see Table 14) and the whole model accounted for 19% of the variance ($F(3, 45) = 3.05, p < .05$). Again, the regression model predicting G2 hostility did not account for a significant amount of variance and there were no significant predictors in the final step of the model (see Table 15).

Discussion

The primary purpose of this paper was to extend the literature on the intergenerational continuity of parenting using a longitudinal data set and with observational measures of parenting in both generations rather than self-report of parenting practices and beliefs, a more subjective measure of parenting. Additionally, the children at the time of the parent assessment were two years of age in both generations which allowed for the parenting qualities that were examined to also be the same, answering the call by a number of researchers to have age equivalence when measuring parenting (Cairns, Cairns, Xie, Leung, & Hearne, 1998; Patterson, 1998; Rutter, 1998; Serbin & Karp, 2003). On the other hand, the sample size in this study is small, and readers should take caution in generalizing the findings to other samples. Furthermore, although the post hoc power analyses indicated that there was sufficient power to detect differences, the strength with which conclusions can be made must be moderated. Finally, the participants in the longitudinal study were on average 32 years of age when this paper was written and many had not yet become parents. This sample will continue to grow, allowing for more and perhaps different variables to be considered, particularly in the analyses examining what factors may account for discontinuity and in looking at the role of early caregiving history in fathers and mothers separately. Still, this research has a number of strengths, not the least of which is the ability to control for factors that often relate to parenting such as SES, life stress, and IQ, providing one of the most stringent tests of the intergenerational continuity in parenting to date.

The role of early experiences of parenting in the next generation's parenting

To this end, overall parenting quality in the first generation, the most robust

global rating of parenting, not only accounted for a significant portion of the variance in their children's overall quality of parenting after controlling for the intelligence of first and second generation parents and childhood life stress of the second generation parents, but was the strongest predictor of all of those variables. Additionally, two out of three of the other more specific parenting qualities, supportive presence and quality of assistance, also demonstrated continuity across the generations. Initial analyses also demonstrated that both SES during their childhood and the parenting they received as adolescents were not related to any of the second generation toddler parenting qualities. In other words, the experiences of parenting that occurred prior to most people's first memories seem to have special importance in how those people later parent their own young toddlers, while the experiences of parenting that occurred more recently (in their adolescence) do not.

Given that parents likely do not even remember the parenting that they received at 24 months, why does this experience play such an important role? Consistent with attachment theory, I would argue that these experiences are part of creating the child's internal working model of self, other and relationships (Bowlby, 1969/82, 1980). The organization of behaviors between parents and children when children are very young becomes internalized into a working model of relationships and is reactivated in later relationships. This continuity in working models across the lifespan is not at the level of specific behaviors per se, but rather is more consistent with the concept of heterotypic continuity, with the underlying organization and meaning of the experiences being carried forward. This research suggests this is especially true in a parent's relationship with his or her child. On the other hand, Belsky, Jaffee, Sligo, Woodward and Silva (2005) found that early childhood did not play any unique role in the prediction of the

next generation's parenting above and beyond later parenting.

One reason for this difference may be that the parenting qualities and methodologies used to measure those parenting qualities across the two generations were different in the Belsky study. Thus, these findings also suggest that, as expected by a number of researchers (Serbin & Karp, 2003; van IJzendoorn, 1992), having age equivalence in the children who are being parented at the time parenting is assessed and using the same method for measuring parenting may be extremely important. Although it should be noted, the correlations between first and second generation parenting did not indicate specificity in the relation across generations between the different parenting constructs. In other words, all of the positive parenting qualities in the first generation generally related positively to the positive parenting qualities in the second generation and negatively to the negative parenting quality, while the negative parenting quality in the first generation related negatively to all of the positive parenting qualities in the second generation. Indeed, first generation supportive presence and overall parenting seem to relate more strongly to second generation hostility than does first generation hostility. Still though, the variance that is produced from using different types of measures of parenting (observational versus self-report) can hide or make unreliable the variance that may be accounted for by parenting across the two generations. And on the theoretical side, what is considered "good" or "poor" parenting will necessarily change as the developmental tasks of childhood change with development. This may also partially explain why first generation parenting measured during G2's adolescence did not relate to second generation parenting of toddlers.

As this project and others continue to follow parents and have more information

about their parenting of children of various ages, it will be interesting to see if and how the parenting experiences from early childhood specifically relate to parenting of older children. One possibility is that parenting of children in middle childhood or adolescence will not demonstrate continuity across generations. A second possibility is that while first generation parenting during adolescence will relate to second generation parenting of adolescents, first generation parenting during early childhood will play a lesser role. And the final possibility is that although the experiences of parenting that occur in later childhood also demonstrate continuity across generations, the role of early childhood experiences of parenting may continue to be equally important. I tend to believe that the final possibility is most likely. Given the growing consensus in the field that early childhood is a time that has persistent importance for later adaptation (Sroufe, Egeland, Carlson, & Collins, 2005), there is no reason not to believe that this will also be the case for parenting adaptation.

The role of IQ

Of course parenting is not the only story to come from this study. The intelligence of second generation parents, measured during childhood, also related to the overall quality of the parenting and quality of instruction they provide to their children. That parental IQ is related to the quality of instruction provided by the parent is not especially surprising, although it is inconsistent with the pattern of relations identified in the first generation. How quickly and easily parents understand all of the various components and steps it takes to solve the tool problem likely relates to how well they are able to explain and assist their child in solving the problem. On the other hand, second generation IQ was not related to the quality of support that the parent provides to his or her child during

the tool problems, although it was related to overall parenting quality. One hypothesis for this pattern of results, based on the my experience coding these observations, is that the child's experience during the observation weighs heavily in the overall parenting score and the two factors that most contribute to the child's experience during the session is how supported the child feels and how well the child does solving the tool problems. Therefore, it is possible that the relation between parental IQ and overall parenting quality is actually accounted for by the quality of instruction provided by the parent. Indeed, in analyses not presented here, I found that once the quality of instruction provided by the parent is partialled out, the relation between IQ and overall parenting is not significant. Even if this is not the case however and in the true population, IQ and overall parenting quality were both related to the next generation's parenting, this would be consistent with a vast literature on risk and resilience that has demonstrated that IQ and parenting both relate to adaptive functioning, in this case, higher quality parenting (see Masten, Hubbard, Gest, Tellegen, Garmezy, & Ramirez, 1999, for an example).

On the other hand, the mother's intelligence in the first generation was only marginally related to the quality of parenting provided by second generation parents, and was not at all related to the quality of parenting provided by her. Given these findings, continuity in intelligence across the two generations is an unlikely factor in accounting for the continuity in the parenting. Indeed, intelligence and history of parenting seem to be accounting for unique variance in predicting the next generation's own parenting.

The contextual similarities in parenting across generations

Childhood life stress and childhood SES on the other hand had no relation at all to either first generation or second generation parenting; nor did life stress measured

concurrently with parenting quality in either generation. This is not consistent with the literature on SES, stress and parenting (Bornstein, Suwalsky, Hahn, and Haynes, 2001; McLoyd & Wilson, 1990; Simons, Whitbeck, Conger, and Wu, 1991), or earlier findings from this project which did find that current life stress related to parenting in the first generation when the whole sample was considered (Sroufe, Egeland, Carlson, & Collins, 2005). Still, what is clear is that similarities in the circumstances in which parents are parenting across the generations is not accounting for the similarity in parenting in this study. This finding in particular needs to be replicated in further research given the lack of relation between life stress, SES and parenting which may simply be an idiosyncrasy of this sample. Certainly, the field has demonstrated that the context in which parents parent is important, relevant and necessary to consider and so it would not be surprising to find that similarities in context across the generations may account for some of the continuity in parenting. Despite this, this study contributes to the growing evidence that the patterns of relating and regulating between a parent and a child are clearly carried forward into the next generation.

Continuity of hostility across the generations

Inconsistent with the previous literature on harsh and derisive parenting (Covell, Grusec, & King, 1995; Murphy-Cowan & Stringer, 1999; Rodriguez & Sutherland, 1999; Simons, Whitbeck, Conger, & Chyi-In, 1991), hostility was not found to relate across generations. In fact, intelligence in the first and second generations and childhood life stress were also not significant predictors of hostility in the second generation. Because the measure of hostility that was used in this study was observational and measured with parents of 2-year-olds, there was very little hostility seen in either the first or second

generation. Why wasn't more hostility seen? Perhaps this age period is too young to see a consistent and reliable pattern of parental hostility emerge or perhaps parents understand better that hostility with very young children is socially unacceptable and so work harder to hide these behaviors from the outside world. Indeed, Dallaire and Weinraub (2005) found stability in positive parenting qualities across the first six years of a child's life, but not for negative parenting qualities in those same families. Future research should explore the continuity of parental hostility towards older children, when hostility may be more likely to emerge as a stable pattern.

Finally, the evidence suggesting that certain children with genetic or temperamental susceptibilities to the environment may benefit more from positive parenting, but also suffer more from negative parenting influences (Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990; Kochanska; 1995, 1997; Belsky, 2005; Belsky, Hsieh, & Crnic, 1998), may mean that continuity of hostility across generations may be found within these populations, but not in populations of children who have genetic make-ups that are less sensitive to environmental influences. Thus, the inability of this study to look at this interaction between genes and parenting may be partially responsible for why continuity of hostility (the only negative parenting quality examined) was not found. With a growing sample size, the project may eventually be in a position to sort some of this out by providing greater power to detect continuity across two generations.

The role of early experiences of parenting for fathers and mothers separately

Given the small sample size, this study was unable to fully examine the role of gender in the continuity of parenting across the generations, although the initial analyses suggest that it is an important variable. The Pearson product-moment correlations showed

a significant relation between all first and second generation parenting qualities for fathers in the second generation, but no significant relations for mothers. This was a surprising finding and contrary to what Belsky, Jaffee, Sligo, Woodward and Silva (2005) found in their study of the intergenerational continuity in parenting. One possible explanation, drawn from a small literature suggesting that boys are more vulnerable to early stressors (Rutter, 1979; Zaslow & Hayes, 1986), is that boys may be more susceptible to the parenting they receive and this susceptibility makes it more likely that those experiences will carry forward into their own parenting. This hypothesis is consistent with previous findings from this project that suggest that boys are more influenced by what happens to them, in this case the parenting they received, while girls are more influenced by the contextual factors surrounding them, such as the amount of social support their mothers have (Sroufe & Egeland, 1991).

Romantic relationship support as a moderator of the continuity of parenting

Finally, romantic relationship support did not relate to second generation parenting quality nor did romantic relationship support moderate the relation between first and second generation parenting quality. This was surprising and inconsistent with the literature. However, the measure of romantic relationship support in this study was self-report and subject to all of the biases typical in self-report measures. Indeed, not a single parent rated their relationship in the lowest rating indicating either that almost all of the parents were in satisfactory relationships or a bias towards reporting being in a satisfactory relationship. In either case, the ability to detect a moderating role for romantic relationship support may have been mitigated.

Limitations and future directions

Although I have focused on the role of socialization in the transmission of parenting across generations, I do not intend to minimize the role genes play in the transmission of parenting. As the field has generally accepted, nature and nurture most surely interact in complex ways to promote the continuity of parenting. To this end, there are a number of twin studies that provide evidence for the genetic heritability of parenting (for a review, see Belsky & Jaffee, 2006). A couple of studies found evidence of a genetic contribution using observational measures of parenting and a sibling adoption design (Dunn & Plomin, 1990; Rende, Slomkowski, Stocker, Fulker, & Plomin). And Caspi and colleagues (2002) found that genes seemed to mediate the relation between experiencing maltreatment and later developing anti-social tendencies. Also, a number of studies have attempted to look at factors that serve as a proxy for the role of genes, such as temperament, in the continuity of parenting with mixed results (Kasen, Cohen, Slomkowski & Brook, 1999; Miller, Kramer, Warner, Wickramaratne & Weissman, 1997). Thus, future research needs to include both the strengths of this research design which include the same observational measures of parenting at similar points in development across the generations and the ability to control for contextual factors across both generations, *and* information on genetic components of parenting before the field can make any definitive conclusions. There are very few, perhaps not even one longitudinal study, currently though that have this ability right now.

Conclusions

In summary, there was strong evidence for the intergenerational continuity of parenting. The continuity between first and second generation parenting held even after accounting for IQ in both generations, contextual factors that so often relate to parenting

quality, and later measures of first generation parenting. Fathers in the second generation appeared to be solely responsible for the strength of the relation between first and second generation parenting, although given this unanticipated finding and the small sample size, this needs to be replicated in future research before making any definitive conclusions. Also surprisingly, romantic relationship support was not related to second generation parenting, nor did it moderate the relation between first and second generation parenting. There is also a strong literature pointing to a romantic relationship support as an important factor in both concurrent parenting and the intergenerational continuity of parenting, so studies on the intergeneration continuity of parenting should continue to explore the role of concurrent romantic relationship support.

Appendix

Tables...42

Table 1

24-Month First and Second Generation Parenting Descriptive Statistics (N=61, Fathers = 26)

<i>Variable</i>	<i>Mean (SD)</i>	<i>Min</i>	<i>Max</i>	<i>Skew</i>
G2 Supportive Presence	4.79 (1.49)	1	7	-.44
Mothers	4.97 (1.45)	1	7	-.75
Fathers	4.54 (1.53)	2	7	-.08
G2 Quality of Instruction	3.93 (1.29)	1	6	-.07
Mothers	4.14 (1.31)	1	6	-.20
Fathers	3.65 (1.23)	2	6	.03
G2 Hostility	1.75 (1.01)	1	6	1.72
Mothers	1.89 (1.13)	1	6	1.66
Fathers	1.58 (.81)	1	4	1.45
G2 Overall Parenting Quality	3.36 (1.08)	1	5	-.20
Mothers	3.43 (1.09)	1	5	-.24
Fathers	3.27 (1.08)	1	5	-.17

G1 Supportive Presence (24 months)	4.16 (1.51)	1	7	.15
G2 Mothers	4.25 (1.49)	2	7	.46
G2 Fathers	4.04 (1.56)	1	7	-.21
G1 Quality of Instruction (24 months)	3.74 (1.33)	1	7	.16
G2 Mothers	3.74 (1.22)	1	7	.13
G2 Fathers	3.73 (1.49)	1	7	.19
G1 Hostility (24 months)	2.04 (1.56)	1	7	1.50
G2 Mothers	1.93 (1.35)	1	6	1.66
G2 Fathers	2.19 (1.83)	1	7	1.30
G1 Overall Parenting Quality (24 months)	2.92 (1.06)	1	5	.26
G2 Mothers	2.86 (1.02)	1	5	.49
G2 Fathers	3.00 (1.13)	1	5	.00

Table 2

Additional Independent Variable Descriptive Statistics

<i>Variable</i>	<i>N</i>	<i>Mean (SD)</i>	<i>Min</i>	<i>Max</i>	<i>Skew</i>
G1 IQ	61	29.89 (8.37)	12	53	.34
G2 IQ	61	101.49 (13.93)	68	123	-.57
G2 Childhood Life Stress	61	0 (.59)	-1.13	1.71	.78
G2 Childhood SES	61	.02 (.74)	-1.37	2.31	1.03
Age 13 Balance II	61	4.22 (.92)	2.0	6.0	-.31
G1 Parenting Life Stress	61	-.04 (.67)	-1.26	2.07	1.04
G2 Parenting Life Stress	61	-.06 (.98)	-1.52	2.89	1.04
G2 Romantic relationship support	48	0 (.87)	-2.17	1.12	-.21

Table 3

Inter-Correlations between Independent Variables

	1	2	3	4	5	6	7	8	9	10 ^a	11	12
1. G1 IQ	1											
2. G2 IQ	.42**	1										
3. G2 Childhood Life Stress	.08	.05	1									
4. G2 Childhood SES	.68**	.43**	-.09	1								
5. Age 13 Balance II	-.06	-.05	-.15	.07	1							
6. G1 Supportive Presence	.14	.20	.19	.22 ⁺	.19	1						
7. G1 Quality of Instruction	.15	.15	.03	.19	.20	.86**	1					
8. G1 Hostility	-.12	-.25 ⁺	-.03	-.21	-.09	-.52**	-.43**	1				
9. G1 Overall Parenting	.13	.11	.09	.22	.12	.92**	.88**	-.50**	1			
10. G2 Rom. Rel. Support ^a	.04	-.15	.22	.05	-.18	.21	.19	.17	.16	1		
11. G1 Parenting Stress	.06	.03	.76**	-.09	-.10	.09	.00	-.05	-.02	.26 ⁺	1	
12. G2 Parenting Stress	-.16	.06	.25*	-.14	-.01	.62 -.01	-.08	.19	-.05	.02	.30*	1

Note. ^a N = 48; ⁺ p < .1, * p < .05, ** p < .01.

Table 4

Two-tailed Correlations between Second Generation Parenting Variables and Independent Variables

<i>Variable</i>	<i>G2 Supportive Presence</i>	<i>G2 Quality of Instruction</i>	<i>G2 Hostility</i>	<i>G2 Overall Parenting Quality</i>
G1 IQ ^a	.23 ⁺	.22 ⁺	-.23 ⁺	.23 ⁺
G2 IQ	.26*	.36**	-.23 ⁺	.37**
G2 Childhood Life Stress	.21	.21	-.13	.18
G2 Childhood SES	-.01	.04	.00	.08
Age 13 Balance II	-.07	-.02	-.05	-.05
G1 Supportive Presence	.39**	.42**	-.26*	.46**
G1 Quality of Instruction	.32*	.38**	-.17	.39**
G1 Hostility	-.27*	-.34**	.21	-.34**
G1 Overall Parenting Quality	.33**	.34**	-.28*	.40**
G2 Rom. Rel. support	-.06	-.10	.06	-.10

Note. ⁺ p < .1, * p < .05, ** p < .01.

Table 5

Summary of Hierarchical Regression Analysis for First Generation Overall Parenting Quality Predicting Second Generation Overall Parenting Quality Controlling for G1 and G2 IQ and G2 Childhood Life Stress (N = 61)

<i>Variable</i>	Step 1		Step 2		Step 3	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 IQ	.03 (.01)	.34*	.03 (.01)	.33*	.02 (.01)	.31*
G2 IQ	.01 (.02)	.09	.01 (.02)	.08	.01 (.02)	.04
G2 childhood life stress			.28 (.22)	.15	.24 (.21)	.13
G1 overall parenting					.36 (.12)	.35**
ΔR^2	.14		.02		.12	
F for ΔR^2	4.89 (2, 58)*		1.61 (1, 57)		9.60 (1, 56)**	

Note. * $p < .05$, ** $p < .01$.

Table 6

Summary of Hierarchical Regression Analysis for First Generation Supportive Presence Predicting Second Generation Supportive Presence Controlling for G1 and G2 IQ and G2 Childhood Life Stress (N = 61)

<i>Variable</i>	Step 1		Step 2		Step 3	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 IQ	.02 (.02)	.20	.02 (.02)	.20	.02 (.01)	.14
G2 IQ	.03 (.03)	.15	.02 (.02)	.14	.02 (.02)	.12
G2 childhood life stress			.47 (.32)	.19	.33 (.31)	.13
G1 supportive presence					.31 (.12)	.32*
ΔR^2	.09		.03		.09	
F for ΔR^2	2.73 (2, 58) ⁺		2.21 (1, 57)		6.55 (1, 56)*	

Note. ⁺ p < .1, * p < .05, ** p < .01.

Table 7

Summary of Hierarchical Regression Analysis for First Generation Quality of Instruction Predicting Second Generation Quality of Instruction Controlling for G1 and G2 IQ and G2 Childhood Life Stress (N = 61)

<i>Variable</i>	Step 1		Step 2		Step 3	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 IQ	.03 (.01)	.33*	.03 (.01)	.32*	.03 (.01)	.29*
G2 IQ	.01 (.02)	.09	.01 (.02)	.07	.01 (.02)	.04
G2 childhood life stress			.42 (.27)	.19	.41 (.25)	.19
G1 quality of instruction					.31 (.11)	.32**
ΔR^2	.14		.04		.10	
F for ΔR^2	4.61 (2, 58)*		2.48 (1, 57)		7.73 (1, 56)**	

Note. * $p < .05$, ** $p < .01$.

Table 8

Summary of Hierarchical Regression Analysis for First Generation Hostility Predicting Second Generation Hostility Controlling for G1 and G2 IQ and G2 Childhood Life Stress (N = 61)

<i>Variable</i>	Step 1		Step 2		Step 3	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 IQ	-.01 (.01)	-.17	-.01 (.01)	-.17	-.01 (.01)	-.13
G2 IQ	-.02 (.02)	-.16	-.02 (.02)	-.15	-.02 (.02)	-.14
G2 childhood life stress			-.19 (.22)	-.11	-.18 (.22)	-.11
G1 hostility					.10 (.08)	.15
ΔR^2	.07		.01		.02	
F for ΔR^2	2.32 (2, 58)		.72 (1, 57)		1.39 (1, 56)	

Table 9

Two-Tailed Correlations between First and Second Generation Parenting and First and Second Generation Parenting Life Stress

<i>Variable</i>	<i>G1 Parenting Life Stress</i>	<i>G2 Parenting Life Stress</i>
G1 Supportive Presence	.09	-.01
G1 Quality of Instruction	.00	-.08
G1 Hostility	-.05	.19
G1 Overall Parenting	-.02	-.06
G2 Supportive Presence	-.06	.08
G2 Quality of Instruction	.17	.05
G2 Hostility	.13	.05
G2 Overall Parenting	.09	.15

Table 10

Two-Tailed Correlations between First and Second Generation Parenting for Fathers (N = 26)

	<i>G2 Supportive Presence</i>	<i>G2 Quality of Instruction</i>	<i>G2 Hostility</i>	<i>G2 Overall Quality of Parenting</i>
1. G1 Supportive Presence	.61**	.61**	-.46*	.75**
2. G1 Quality of Instruction	.47*	.47*	-.47*	.65**
3. G1 Hostility	-.38 ⁺	-.43*	.49*	-.53**
4. G1 Overall Parenting Quality	.51**	.49*	-.44*	.66**

Note. ⁺ p < .1, * p < .05, ** p < .01.

Table 11

Two-Tailed Correlations between First and Second Generation Parenting for Mothers (N = 35)

	<i>G2 Supportive Presence</i>	<i>G2 Quality of Instruction</i>	<i>G2 Hostility</i>	<i>G2 Overall Quality of Parenting</i>
1. G1 Supportive Presence	.19	.28	-.18	.23
2. G1 Quality of Instruction	.18	.31 ⁺	.00	.17
3. G1 Hostility	-.14	-.24	.05	-.13
4. G1 Overall Parenting Quality	.21	.26	-.18	.21

Note. ⁺ p < .1, * p < .05, ** p < .01.

Table 12

Summary of Hierarchical Regression Analysis Testing Second Generation Romantic Relationship Support as a Moderator of Relations between First and Second Generation Overall Parenting Quality (N = 48)

<i>Variable</i>	Step 1		Step 2	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 Supportive presence	.43 (.14)	.41**	.43 (.14)	.41**
G2 Romantic relationship support	-.21 (.17)	-.16	-.28 (.17)	-.22
Interaction term			-.34 (.17)	-.27 ⁺
ΔR^2	.17		.07	
F for ΔR^2	4.69 (2, 45)*		3.93 (1, 44) ⁺	

Note. ⁺ p < .1, * p < .05, ** p < .01.

Table 13

Summary of Hierarchical Regression Analysis Testing Second Generation Romantic Relationship Support as a Moderator of Relations between First and Second Generation Supportive Presence (N = 48)

<i>Variable</i>	Step 1		Step 2	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 Supportive presence	.41 (.13)	.43**	.40 (.14)	.41**
G2 Romantic relationship support	-.26 (.23)	-.15	-.29 (.24)	-.17
Interaction term			-.12 (.17)	-.10
ΔR^2	.18**		.01	
F for ΔR^2	4.85 (2, 45)*		.51 (1, 44)	

Note. * $p < .05$, ** $p < .01$.

Table 14

Summary of Hierarchical Regression Analysis Testing Second Generation Romantic Relationship Support as a Moderator of Relations between First and Second Generation Quality of Instruction (N = 48)

<i>Variable</i>	Step 1		Step 2	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 Supportive presence	.34 (.12)	.38**	.33 (.12)	.38*
G2 Romantic relationship support	-.24 (.20)	-.17	-.26 (.20)	-.19
Interaction term			-.15 (.14)	-.15
ΔR^2	.15		.02	
F for ΔR^2	4.01 (2, 45)*		1.11 (1, 44)	

Note. * $p < .05$, ** $p < .01$.

Table 15

Summary of Hierarchical Regression Analysis Testing Second Generation Romantic Relationship Support as a Moderator of Relations between First and Second Generation Hostility (N = 48)

<i>Variable</i>	Step 1		Step 2	
	<i>B(SE)</i>	β	<i>B(SE)</i>	β
G1 Supportive presence	.13 (.10)	.21	.11 (.10)	.16
G2 Romantic relationship support	.11 (.18)	.09	.11 (.18)	.09
Interaction term			-.12 (.12)	-.15
ΔR^2	.04		.02	
F for ΔR^2	1.04 (2, 45)		.99 (1, 44)	

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