

**Bryn Mawr College**  
**Scholarship, Research, and Creative Work at Bryn Mawr**  
**College**

---

Psychology Faculty Research and Scholarship

Psychology

---

2016

# The Long Reach of Nurturing Family Environments: Links With Midlife Emotion-Regulatory Styles and Late-Life Security in Intimate Relationships

Waldinger J. Robert

Schulz S. Marc

*Bryn Mawr College*, [mschulz@brynmawr.edu](mailto:mschulz@brynmawr.edu)

[Let us know how access to this document benefits you.](#)

Follow this and additional works at: [http://repository.brynmawr.edu/psych\\_pubs](http://repository.brynmawr.edu/psych_pubs)

 Part of the [Psychology Commons](#)

---

## Custom Citation

Waldinger, R.J. and Schulz, M.S. "The Long Reach of Nurturing Family Environments: Links With Midlife Emotion-Regulatory Styles and Late-Life Security in Intimate Relationships." *Psychology Science Online First*, September 2015.

This paper is posted at Scholarship, Research, and Creative Work at Bryn Mawr College. [http://repository.brynmawr.edu/psych\\_pubs/48](http://repository.brynmawr.edu/psych_pubs/48)

For more information, please contact [repository@brynmawr.edu](mailto:repository@brynmawr.edu).

**Final Accepted Manuscript Version**

(Psychological Science OnlineFirst, published on September 15, 2016)

***Psychological Science***

***The Long Reach of Nurturing Family Environments: Links With Midlife Emotion-Regulatory Styles and Late-Life Security in Intimate Relationships***

Robert J. Waldinger<sup>1,2</sup> and Marc S. Schulz<sup>3</sup>

<sup>1</sup>Department of Psychiatry, Massachusetts General Hospital, Boston, Massachusetts;

<sup>2</sup>Department of Psychiatry, Harvard Medical School; and <sup>3</sup>Department of Psychology, Bryn

Mawr College

## Abstract

Does the warmth of children's family environments predict the quality of their intimate relationships at the other end of the life span? Using data collected prospectively on 81 men from adolescence through the eighth and ninth decades of life, this study tested the hypotheses that warmer relationships with parents in childhood predict greater security of attachment to intimate partners in late life, and that this link is mediated in part by the degree to which individuals in midlife rely on emotion-regulatory styles that facilitate or inhibit close relationship connections. Findings supported this mediational model, showing a positive link between more nurturing family environments in childhood and greater security of attachment to spouses more than 60 years later. This link was partially mediated by reliance on more engaging and less distorting styles of emotion regulation in midlife. The findings underscore the far-reaching influence of childhood environment on well-being in adulthood.

## Keywords

emotion regulation, attachment, family environment, life-span development, aging, coping

Received 12/20/15; Revision accepted 7/7/16

The extent to which the quality of family environment in childhood shapes functioning and relationships in adulthood continues to be a subject of much debate. One reason for this continued controversy is that few studies have carefully followed individuals from childhood into adulthood, let alone all the way to late life. Most of what is known about connections between early-life experience and late-life functioning is based on individuals' hazy and often fallible retrospection. In the study reported here, we took advantage of a rare opportunity to turn back the clock more than six decades to obtain parents' and children's eyewitness accounts of the children's (participants') family environments. We linked these eyewitness accounts with ratings of participants' emotion-regulatory styles between ages 45 and 50, and with in-depth interviews about their intimate relationships in late life (age 75–85), to examine pathways from the quality of childhood family environments to midlife emotion-regulatory styles to late-life security of attachment to spouses.

Attachment theory (Bowlby, 1969) is a useful framework for understanding relationship functioning because it links individual differences in navigating emotional challenges to variations in interpersonal functioning. Children's relationships with their parents are hypothesized to shape habitual patterns of attachment in close relationships (Mikulincer & Shaver, 2007). Reliable, responsive parenting is thought to enable children to develop secure attachment, which is characterized by comfort with closeness and willingness to depend on other people. By contrast, unresponsive or inconsistent caregiving is thought to foster insecure attachment, which is manifested in anxiety about abandonment or avoidance of closeness. A key supposition of attachment theory is that children internalize beliefs about relationships and develop emotion-regulatory styles from repeated interactions with their caregivers, a process that promotes continuity of relationship and regulatory patterns into adult life (Scharfe &

Bartholomew, 1994). These patterns have important real-world correlates, including links with physical health, stress management, and subjective well-being (Mikulincer & Shaver, 2007; Pietromonaco, Uchino, & Schetter, 2013). Research supports the idea that early experience with sensitive caregivers fosters the development of emotion-regulatory and relational styles that facilitate success in future relationships (Neppl, Conger, Scaramella, & Ontai, 2009; Whitton et al., 2008).

Attempts to classify the adaptiveness of emotion-regulatory capacities (e.g., Gross & John, 2003; Vaillant, 1992) have often focused on the degree to which they promote engagement with or avoidance of negative emotions (Waldinger & Schulz, 2010a). This perspective emphasizes the consequences of regulatory strategies for the regulator, but these strategies are also central to functioning in close relationships (e.g., Butler et al., 2003). More adaptive emotion-regulatory capacities allow individuals to tolerate and manage negative affect without resorting to behaviors that inhibit closeness or intimacy (Butler et al., 2003; Gross & John, 2003). By contrast, minimizing the presence or expression of upsetting emotions may inhibit an individual's ability to express needs for care and, in turn, may hinder other people in recognizing or responding to those needs.

There has been relatively little research on the childhood origins of adults' emotion-regulatory styles and relationship functioning (Belsky, 2002), because prospectively collected longitudinal data relevant to this question are rare. Recent studies have begun to elucidate connections between family environments in childhood and relationship styles in early adulthood (e.g., Fraley, Roisman, Booth-LaForce, Owen, & Holland, 2013). The Minnesota Longitudinal Study of Risk and Adaptation (MLSRA; Sroufe, Egeland, Carlson, & Collins, 2005) is particularly relevant to the current work, having followed individuals from birth into their 20s to examine

pathways from parent-child interactions to relationship functioning in young adulthood. MLSRA participants who were insecurely attached to their mothers at 12 months of age went on to express more negative emotions in discussions of conflict with romantic partners at age 20 to 21, and this effect was mediated by social competence in childhood and the quality of close friendships in adolescence (Simpson, Collins, Tran, & Haydon, 2007). These results support the premise that early interactions with caregivers have an effect on relationship functioning that extends into adolescence and adulthood.

Although a small number of studies have followed individuals from childhood through early adulthood, no prospective study to date has examined whether and how childhood experience may reach across the life span to predict security in close relationships in old age. Given the importance of social connections for longevity and healthy aging (Holt-Lunstad, Smith, & Layton, 2010), understanding the determinants of late-life relationship functioning takes on new urgency as the ranks of individuals over age 65 continue to swell. Marriage is a primary source of support in meeting the challenges of aging. Greater marital satisfaction is linked with better physical and psychological well-being in late life (Umberson & Williams, 2005; Waldinger & Schulz, 2010b), whereas loneliness is associated with cognitive and physical decline (Cacioppo & Hawkey, 2009; Luo, Hawkey, Waite, & Cacioppo, 2012).

Studies of adult attachment have focused primarily on young adults, relying heavily on self-report measures developed for this age group. Using an established in-depth interview and coding system (Crowell & Owens, 1996), Waldinger, Cohen, Schulz, and Crowell (2014) recently examined the structure of late-life attachment in marriage. They found that a stronger sense of one's spouse as available and helpful in times of need was associated with greater

concurrent emotional well-being and life satisfaction for both men and women, and predicted better memory at follow-up 2.5 years later for women.

Building on this interview-based approach, the present study examined the childhood antecedents of octogenarians' late-life attachment security. Retrospective studies and shorter-term prospective research suggest that both childhood family environments and developing relational capacities are core determinants of adults' attachment styles (Fraley et al., 2013). To our knowledge, this is the first study to examine these connections prospectively over six decades. We focus here on a well-theorized but underresearched pathway by which early experiences are believed to shape habitual styles of regulating emotional arousal that in turn reach across adult life to influence security in intimate relationships. Using data collected prospectively on 81 men from adolescence through the eighth and ninth decades of life, we tested the hypothesis that warmer childhood relationships with parents predict greater security of attachment to spouses in late life. In addition, we hypothesized that less reliance on regulatory styles that inhibit close relationship connections would partially mediate the link between greater warmth in families of origin and greater security of attachment to spouses six decades later. Our data were obtained prospectively from multiple sources via multiple methods, including self-report (parent-child relationships and home environment), independent ratings (emotion-regulatory styles in midadulthood), and in-depth interviews (marriage in late life).

## Method

### Sample

The sample for this study consisted of 81 men who were part of a 78-year longitudinal study of adult development that began when they were adolescents. Fifty-one men were part of a college

cohort, which consisted of 268 Harvard College sophomores recruited between 1939 and 1942 for an intensive multidisciplinary study of psychological health (Vaillant, 1977). The remaining 30 men were members of an inner-city cohort, which consisted of 456 boys who were born between 1925 and 1932 (mean age at study intake = 14.1 years,  $SD = 1.3$ ) and selected originally from disadvantaged families in low-income Boston neighborhoods to serve as a nondelinquent comparison group in a study of juvenile delinquency (Glueck & Glueck, 1968). Participants from both cohorts were assessed using interview and questionnaire techniques at regular intervals over the course of the 78-year study.

Both cohorts of men and their intimate partners were invited to participate in an assessment of late-life marriage. A total of 201 surviving members of the original sample reported having partners. To be eligible for this assessment, couples had to have been living together for a minimum of 1 year. In addition, both members of the couple had to score above 25 (indicating minimal or no cognitive impairment) on the Telephone Interview for Cognitive Status (Brandt, Spencer, & Folstein, 1988) and to be in sufficient physical health to be able to complete the interview procedures. Two couples did not meet the criterion of living together for a minimum of 12 months., and 44 couples were unable to participate because physical or cognitive impairments prevented one or both partners from completing the assessments. Five couples completed part but not all of the assessments, and 2 couples could not be recontacted. An additional 67 couples declined to participate. The most common reason given for refusal was a wish to preserve the privacy of their relationship. The 67 eligible men who declined to participate in the study did not differ significantly from the 81 men who participated with respect to their childhood environment and adaptive emotion-regulatory capacities at midlife. Moreover, participants did not differ from nonparticipants with respect to age, number of years of education, income at ages



45 to 55, health at age 70 (based on an internist's rating of medical records; Vaillant, 1979), number of previous divorces, length of the current relationship, or marital satisfaction reported 10 years earlier. All participants were Caucasian and reported being in heterosexual relationships.

The Partners HealthCare (Boston, MA) Human Research Committee approved the study, and written informed consent was obtained from all participants.

### Procedure

Childhood family environment was assessed between 1938 and 1942, when participants entered the study as adolescents. Interviews lasting a combined total of 10 to 12 hr were conducted by research-staff psychiatrists and social workers separately with each parent and participant to assess the quality of the parent-child relationships and the overall quality of the family environments. Styles of regulating emotion were assessed when participants were 45 to 50 years old ( $M = 47$ ), using data from interviews conducted by a psychiatrist or social worker. These interviews lasted 2 to 3 hr and took place in participants' homes or at their workplaces. Security of attachment to spouses in late life was assessed during a visit to each participant's home. Participants' mean age at the time of these visits was 80.8 years ( $SD = 3.4$ ), and the mean length of their marital relationships was 40.8 years ( $SD = 19.4$ ). A semistructured interview assessing security of attachment to the partner was administered separately to each member of each couple. The interviewers were unaware of all prior data on the participants, and the two members of a given couple met with different interviewers. Audiotapes of these attachment interviews were carefully transcribed and later coded by trained raters.

### Measures

Childhood family environment.

Data on parenting and family environments were taken from the intake interviews and included all notes on the adolescent participants' reports of their home life and the interviews with parents in their homes, as well as developmental histories obtained by the social worker from the parents. Two independent coders blind to other information used these data to rate the quality of each participant's relationship with his mother and with his father on a scale that ranged from 1 (*distant, hostile, or overly punitive*) to 5 (*nurturing, encouraged positive autonomy, fostered self-esteem*). In addition, the coders rated the quality of the overall warmth and cohesiveness of the family environment on a scale from 1 (*lack of warmth and cohesion*) to 5 (*warm and cohesive*; average interrater reliability = .71). Ratings of the family environment, relationship with the father, and relationship with the mother were highly consistent (Cronbach's  $\alpha = .78$ ). To increase reliability, we computed a composite score for the quality of the family environment by calculating the mean of these three ratings for each participant. The predictive validity of these ratings has been supported in several prior studies (e.g., Landes, Ardel, Vaillant, & Waldinger, 2014; McLaughlin et al., 2010).

Styles of regulating emotion.

Emotion-regulatory style refers to habitual strategies that individuals employ to cope with emotion and emotionally challenging situations. These strategies are commonly thought to include efforts to alter components of one's emotion (experience, expression, and arousal) in the service of pursuing one's goals (Schulz & Lazarus, 2012). Interview protocols for assessing emotion-regulatory style in midadulthood focused on challenges in participants' relationships, physical health, and work. The interviewers took notes during the interviews and wrote extensive summaries immediately following each meeting. They were instructed to elucidate but not label the strategies that participants employed to cope with their difficulties (Vaillant, 1992). Three

independent raters who were blind to other information about the participants reviewed all available interview summaries and identified episodes in which the participants faced challenges. The number of identified episodes per participant ranged from 10 to 30 per interview. For each episode, the raters determined the emotion-regulatory strategy that best fit the participant's response and then coded the strategy, using a manual developed by Vaillant (1977). This coding system categorizes regulatory strategies as "more adaptive" or "less adaptive" on the basis of two dimensions: the degree to which they involve direct and clear engagement with (rather than distancing from) challenging emotions and the degree to which they facilitate authentic engagement with other individuals (rather than engagement that reflects distortions in perception or emotional expression; e.g., suppression). Strategies considered to be relatively nonadaptive include minimizing the significance of salient emotions and attributing one's own discomforting thoughts, feelings, or attitudes to another person (e.g., seeing other people as hostile while disavowing one's own hostility).

On the basis of the frequency of less adaptive emotion-regulatory strategies in the coded vignettes, the raters gave each participant's emotion-regulatory capacities an overall rating: 1 if less adaptive strategies were "not evident," 2 if they were "occasionally evident," 3 if they were "clearly evident," 4 if they were "the major mode of self-regulation," and 5 if they were "the predominant mode of self-regulation" (Vaillant, 1977). These ratings were reflected so that higher scores indicated more adaptive emotion regulation. Concurrent validity of these ratings is supported by their associations with marital satisfaction, psychosocial adjustment, and income in midlife (Vaillant, 1977). Their predictive validity has been demonstrated by their associations with late-life physical health (Martin-Joy et al., 2016).

Security of attachment.

Security of attachment was measured using the Current Relationship Interview (CRI; Crowell & Owens, 1996), a 45- to 60-min semistructured interview that assesses adults' representations of the attachment bond with their current partner. The interview procedure and scoring system for the CRI parallel those of the Adult Attachment Interview (Hesse, 1999). Participants are asked to provide adjectives describing their relationship with their partner and illustrative incidents that support the applicability of those adjectives. Participants are also asked about their comfort depending on their partner, their comfort providing support for their partner, and other factors that have influenced their relationship.

In our study, coders read each transcribed interview twice and then characterized the respondent's behavior, relationship, and discourse style using the following dimensions: relationship satisfaction, loving behavior, comfort with care seeking, comfort with caregiving, valuing of intimacy, derogation or devaluing of attachment, derogation or devaluing of the partner, and coherence of the narrative (i.e., the extent to which it provided an integrated, believable, and consistent account of the relationship and of the respondent's and the partner's attachment-related behaviors and their meaning). Ratings were made using Likert-type scales ranging from 0 to 9. Four coders who were unaware of the participants' other data were trained by an expert coder, in consultation with the author of the instrument (J. Crowell), until they reached a reliability criterion. Coding required on average 1 hr per transcript.

All the coders coded a randomly selected subsample of 25 CRI transcripts (15% of the total) so that we could determine interrater reliability. Agreement among the four coders ( $r$ ) was .70 or higher on all the scales. After reliability was ascertained, each transcript was coded by at least two coders. When two coders' ratings differed by no more than 2 points, the ratings were averaged to arrive at a final score for that scale. Discrepancies of 3 points or more were resolved

by averaging a third coder's rating with the other two coders' ratings. For each participant, a total score for security of attachment was calculated by averaging ratings across the nine scales; higher scores were indicative of greater security (see Waldinger et al., 2014, for additional details).

The CRI has good psychometric properties (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010), including stability over 18 months and discriminant validity (Crowell, Treboux, & Waters, 2002; Treboux, Crowell, & Waters, 2004). In addition, the CRI is associated in predicted ways with attachment ratings based on the Adult Attachment Interview (Hesse, 1999) and with self-reports of relationship satisfaction in octogenarian couples (Waldinger et al., 2014). Predictive validity of the CRI is supported by a study finding that security of attachment as measured by the CRI predicted a decrease in relationship conflict over the first 6 years of marriage (Treboux et al., 2004).

## Results

Preliminary analyses focused on examining the distributions for the three key variables and the patterns of missing data. To reduce skew in the security-of-attachment variable, we implemented a square-root transformation.<sup>1</sup> Following this transformation, all three variables showed minimal skew (skew and kurtosis values all less than 1.2). Data on emotion-regulatory style were not available for 8 of the 81 participants.<sup>2</sup> We addressed this small amount of missing data by using multiple-imputation procedures, implemented in SPSS v22, in the regression analyses testing our hypotheses. Studies have shown that analyses using multiple imputation are generally superior to those using listwise or pairwise deletion and other traditional approaches (Acock, 2005).

Because the participants in this study came from two distinct subsamples, we also ran preliminary analyses to examine whether the subsamples differed on the key study variables. As

indicated in Table 1, the subsamples' mean scores on these three variables were similar;  $t$  tests did not reveal significant differences.

*[Insert Table 1 about here.]*

Links among family environment in childhood, late-life security of attachment, and adaptiveness of emotion-regulation strategies in midlife were examined by calculating Pearson's correlation coefficients. Nurturing family environments were positively linked with late-life security of attachment,  $r(81) = .23$ , 95% confidence interval (CI) = [.01, .45],  $p = .042$ . In addition, the use of more adaptive emotion-regulatory strategies in midlife was significantly correlated with greater late-life security of attachment,  $r(73) = .28$ , 95% CI = [.05, .51],  $p = .018$ . Finally, more nurturing family environments were linked with more adaptive emotion-regulatory strategies in midlife,  $r(73) = .29$ , 95% CI = [.06, .50],  $p = .014$ .

Having established connections among these three variables, we proceeded to test the hypothesis that adaptiveness of emotion-regulation strategies in midlife partially mediates the link between childhood family environment and late-life security of attachment. In a hierarchical linear regression analysis with late-life attachment security as the dependent variable, family environment in childhood was entered as a predictor in Step 1, and adaptive emotion-regulatory strategies in midlife was entered as a predictor in Step 2. The results are presented in Figure 1.

*(Insert Figure 1 about here)*

Results were consistent with the correlational analysis. Family environment alone was a significant predictor of late-life security of attachment to spouses, accounting for 5% of the variance in attachment,  $p < .05$ . The introduction of adaptiveness of emotion-regulation strategies in Step 2 accounted for an additional 6% of the variance in late-life attachment,  $p < .05$ , and reduced the regression coefficient for family environment to nonsignificance. These results support the hypothesis that adaptiveness of emotion-regulation strategies in midlife partially mediates the link between childhood family environment and late-life attachment security. To estimate the 95% CI for the total indirect effect (i.e., the mediating effect), we used nonparametric bootstrapping estimation methods (Preacher & Hayes, 2008) with 5,000 bootstrapped samples. The 95% CI for the total indirect effect ranged from 0.008 to 0.026, which indicates that the indirect effect is statistically significant and provides additional evidence for the hypothesized mediational model.

To examine whether these effects were similar across the two subsamples, we conducted moderated mediation analyses using the PROCESS procedure developed by Hayes (2013). Results indicated that the total indirect effect did not differ between the two subsamples.<sup>3</sup>

### ***Discussion***

Does childhood family environment shape the way individuals regulate their emotions in adulthood and the way they experience relationships in old age? Data that can address these questions are almost nonexistent, because only a handful of longitudinal studies have survived to track individuals across the entire adult life span. An even smaller number have addressed the complexities of emotion and interpersonal functioning prospectively across six decades. Extending the findings of retrospective and shorter-term prospective studies, this investigation

provides rare empirical support for the idea that childhood experiences shape relationship functioning in late life. Our findings suggest that individuals raised in nurturing environments and those who have more adaptive emotion-regulatory styles are better able to meet two core developmental challenges of aging: accepting the vulnerability associated with depending on a partner for one's needs and with the responsibility of being depended on by that partner (Fraley et al., 2013)

These findings have important theoretical implications. This study joins others (e.g., Simpson et al., 2007) in pointing to lawfulness in how styles of emotion regulation and relationship functioning develop across the life span. Attachment theory accounts for this lawfulness by describing how warm, nurturing parenting fosters adaptive emotion-regulatory styles that facilitate effective relationship engagement later in life. Such continuity between childhood environments and late-life intimacy could be supported by additional mechanisms, including active selection of nurturing relational environments; repeated elicitation, from other individuals, of behaviors that reinforce adaptive relational patterns (Caspi, Bem, & Elder, 1989); and internalized beliefs about the availability and reliability of other people (Bowlby, 1969). Another theoretical implication of these findings is that emotion regulation is important for interpersonal functioning. Research on emotion regulation has paid insufficient attention to its interpersonal consequences (Butler & Gross, 2009). Our findings suggest that the way individuals habitually manage emotional arousal is related to how they negotiate intimacy. Some emotion-regulation strategies facilitate mutuality in relationships, whereas others hamper mutuality by fostering egocentric misperceptions or hindering communication. Suppression, for example, has been shown to reduce rapport with others and inhibit relationship formation (Butler et al., 2003).



Emotion regulation and attachment have often been studied separately, yet they share a common concern with managing emotions in challenging interpersonal situations. Spanning different but overlapping parts of the human life cycle, both the MLSRA (Sroufe et al., 2005) and the current study suggest that early relationships with caregivers shape later attachment, and that styles of regulating emotion constitute a key element in these pathways.

The findings of this study also have important practical implications. Older adults make up an increasingly large proportion of the population, and research has consistently identified relationships and social support as key components of well-being in late life. Efforts to promote healthy aging must be informed by an understanding of the determinants of late-life relationship functioning (Waldinger & Schulz, 2010b). Our results highlight the importance of efforts directed at reducing childhood adversity. Moreover, the finding that early adversity may affect later relationships by shaping emotion-regulatory styles points to possible interventions to help adults who struggle with the sequelae of nonnurturing childhood environments—for example, psychotherapies aimed at improving emotion-regulation strategies (Mennin & Fresco, 2014).

This study has limitations that are important to note. First, the sample was relatively small and homogeneous; the findings may not be generalizable to women or non-Caucasian populations. However, the original selection criteria for the college and inner-city cohorts resulted in two groups that had markedly different economic and social circumstances in childhood and provided important socioeconomic diversity. Second, information about early childhood environments was obtained from interviewers' ratings and observations made when participants entered the study as adolescents. Thus, although the assessments of the adolescents' home environments were based on "eyewitness" accounts, our summary measure of childhood environment also incorporated retrospective perspectives on early childhood from the parents and adolescents.

Third, childhood environment and emotion-regulatory styles were rated using methods and standards from earlier eras of research. Finally, although the temporal separation of the predictor, mediator, and outcome variables and the rigorous mediational analyses are strengths of this study, causal conclusions cannot be drawn given the study's nonexperimental nature.

A particular strength of this study is that it extends across most of the human life span, from adolescence through the eighth decade of life. Data were obtained from multiple informants (participants, parents, and interviewers) using diverse methods. Fraley et al. (2013) cautioned that scholars should not expect large associations between early experiences and adult attachment styles because of the plethora of intervening experiences thought to affect relationship functioning. Thus, the links we found among quality of family environment in childhood, emotion-regulation strategies in midlife, and security of attachment in late life are particularly noteworthy.

This study captured the long reach of warm parent-child relationships and nurturing family environments in shaping key aspects of functioning later in life. In this respect, it joins numerous studies from divergent theoretical and empirical domains, ranging from psychology to economics (Heckman, 2006) to epigenetics (Curley, Jensen, Mashoodh, & Champagne, 2011). Such investigations highlight the importance of prioritizing children's well-being in allocating society's human capital and other precious resources.

### *Author Contributions*

Both authors contributed to the study's concept and design and to collecting, analyzing, and interpreting the data. R. J. Waldinger drafted the manuscript with assistance from M. S. Schulz, and both authors provided critical revisions. Both authors approved the final version of the manuscript for submission.

### *Declaration of Conflicting Interests*

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

### *Funding*

This work was supported by grants from the National Institute of Mental Health (R01MH42248) and the National Institute on Aging (R01AG045230).

### *Notes*

1. Following the transformation, the scale was rereflected so that higher values continued to indicate greater security of attachment.
2. Statistical comparisons indicated that participants with and without missing data did not differ on age, cohort membership, or length of marriage. Participants with missing data had more years of education, but the effect size was modest,  $r = .28$ .
3. The 95% CI for the index of moderated mediation (i.e., the difference between the total indirect effect in the college and inner-city cohorts) was between  $-.02$  and  $.12$ .

*References*

- Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family*, 67, 1012–1028. doi:10.1111/j.1741-3737.2005.00191.x
- Belsky, J. (2002). Developmental origins of attachment styles. *Attachment & Human Development*, 4, 166–170. doi:10.1080/14616730210157510
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. London, England: Hogarth.
- Brandt, J., Spencer, M., & Folstein, M. (1988). The Telephone Interview for Cognitive Status. *Cognitive and Behavioral Neurology*, 1, 111–117.
- Butler, E. A., Egloff, B., Wilhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion*, 3, 48–67. doi:10.1037/1528-3542.3.1.48
- Butler, E. A., & Gross, J. J. (2009). Emotion and emotion regulation: Integrating individual and social levels of analysis. *Emotion Review*, 1, 86–87. doi:10.1177/1754073908099131
- Cacioppo, J. T., & Hawkey, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences*, 13, 447–454. doi:10.1016/j.tics.2009.06.005
- Caspi, A., Bem, D. J., & Elder, G. H., Jr. (1989). Continuities and consequences of interactional styles across the life course. *Journal of Personality*, 57, 375–406.
- Crowell, J. A., & Owens, G. (1996). *Current Relationship Interview and scoring system*. Unpublished manuscript, State University of New York at Stony Brook.
- Crowell, J. A., Treboux, D., & Waters, E. (2002). Stability of attachment representations: The transition to marriage. *Developmental Psychology*, 38, 467–479. doi:10.1037/0012-1649.38.4.467

- Curley, J., Jensen, C., Mashoodh, R., & Champagne, F. (2011). Social influences on neurobiology and behavior: Epigenetic effects during development. *Psychoneuroendocrinology*, *36*, 352–371. doi:10.1016/j.psyneuen.2010.06.005
- Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013). Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology*, *104*, 817–838. doi:10.1037/a0031435
- Glueck, S., & Glueck, E. (1968). *Delinquents and nondelinquents in perspective*. Boston, MA: Harvard University Press.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348–362. doi:10.1037/0022-3514.85.2.348
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, *312*, 1900–1902. doi:10.1126/science.1128898
- Hesse, E. (1999). The Adult Attachment Interview. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 395–433). New York, NY: Guilford Press.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, *7*(7), Article e1000316. doi:10.1371/journal.pmed.1000316

- Landes, S. D., Ardel, M., Vaillant, G. E., & Waldinger, R. J. (2014). Childhood adversity, midlife generativity, and later life well-being. *The Journals of Gerontology, Series B: Psychological Sciences & Social Sciences*, *69*, 942–952. doi:10.1093/geronb/gbu055
- Luo, Y., Hawkey, L. C., Waite, L. J., & Cacioppo, J. T. (2012). Loneliness, health, and mortality in old age: A national longitudinal study. *Social Science & Medicine*, *74*, 907–914. doi:10.1016/j.socscimed.2011.11.028
- Martin-Joy, J. M., Malone, J. C., Cui, X., Johansen, P., Hill, K. P., Rahman, M. O., . . . Vaillant, G. E. (2016). Development of adaptive coping from mid to late life: A 70-year longitudinal study of defense maturity and its psychosocial correlates. Manuscript submitted for publication.
- McLaughlin, K. A., Kubzansky, L. D., Dunn, E. C., Waldinger, R., Vaillant, G., & Koenen, K. (2010). Childhood social environment, emotional reactivity to stress, and mood and anxiety disorders across the life course. *Depression and Anxiety*, *27*, 1087–1094. doi:10.1002/da.20762
- Mennin, D. S., & Fresco, D. M. (2014). Emotion regulation therapy. In J. J. Gross (Ed.), *Handbook of emotion regulation* (2nd ed., pp. 469–490). New York, NY: Guilford Press.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press.
- Neppl, T. K., Conger, R. D., Scaramella, L. V., & Ontai, L. L. (2009). Intergenerational continuity in parenting behavior: Mediating pathways and child effects. *Developmental Psychology*, *45*, 1241–1256. doi:10.1037/a0014850
- Pietromonaco, P. R., Uchino, B., & Schetter, C. D. (2013). Close relationship processes and health: Implications of attachment theory for health and disease. *Health Psychology*, *32*, 499–513. doi:10.1037/a0029349

- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. doi:10.3758/BRM.40.3.879
- Ravitz, P., Maunder, R., Hunter, J., Sthankiya, B., & Lancee, W. (2010). Adult attachment measures: A 25-year review. *Journal of Psychosomatic Research*, *69*, 419–432. doi:10.1016/j.jpsychores.2009.08.006
- Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships*, *1*, 23–43. doi:10.1111/j.1475-6811.1994.tb00053
- Schulz, M. S., & Lazarus, R. S. (2012). Emotion regulation during adolescence: A cognitive-mediational conceptualization. In P. K. Kerig, M. S. Schulz, & S. T. Hauser (Eds.), *Adolescence and beyond: Family processes and development* (pp. 19–42). New York, NY: Oxford University Press.
- Simpson, J. A., Collins, W. A., Tran, S., & Haydon, K. C. (2007). Attachment and the experience and expression of emotions in adult romantic relationships: A developmental perspective. *Journal of Personality and Social Psychology*, *92*, 355–367. doi:10.1037/0022-3514.92.2.355
- Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005). *The development of the person: The Minnesota Study of Risk and Adaptation from Birth to Adulthood*. New York, NY: Guilford Press.
- Treboux, D., Crowell, J. A., & Waters, E. (2004). When new meets old: Configurations of adult attachment representations and their implications for marital functioning. *Developmental Psychology*, *40*, 295–314. doi:10.1037/0012-1649.40.20.295

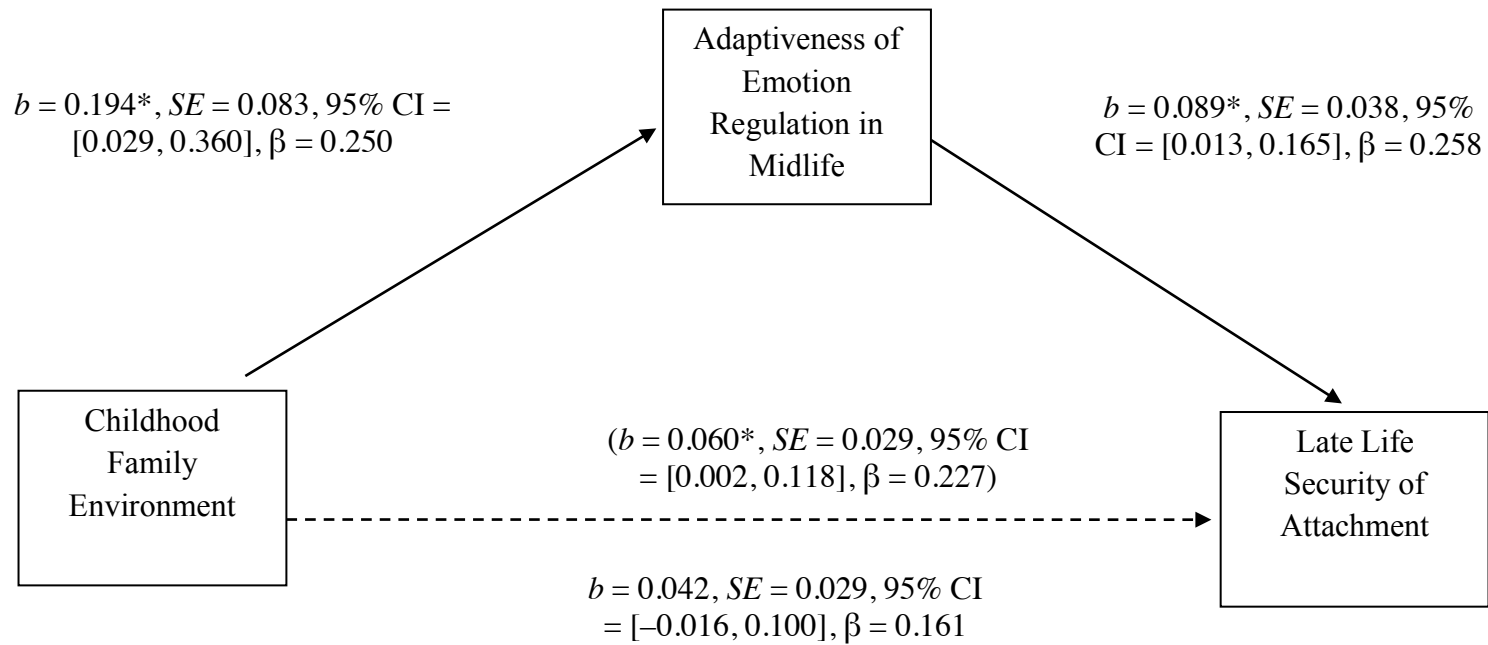
- Umberson, D., & Williams, K. (2005). Marital quality, health, and aging: Gender equity? *The Journals of Gerontology, Series B: Psychological Sciences & Social Sciences*, 60(Special Issue 2), S109–S113.
- Vaillant, G. (1977). *Adaptation to life*. Boston, MA: Little, Brown.
- Vaillant, G. (1979). Natural history of male psychologic health. *New England Journal of Medicine*, 301, 1249–1254. doi:10.1056/NEJM197912063012302
- Vaillant, G. (1992). *Ego mechanisms of defense: A guide for clinicians and researchers*. Arlington, VA: American Psychiatric Press.
- Waldinger, R. J., Cohen, S., Schulz, M. S., & Crowell, J. A. (2014). Security of attachment to spouses in late life: Concurrent and prospective links with cognitive and emotional well-being. *Clinical Psychological Science*, 3, 516–529. doi:10.1177/2167702614541261
- Waldinger, R. J., & Schulz, M. S. (2010a). Facing the music or burying our heads in the sand? Adaptive emotion regulation in mid- and late-life. *Research in Human Development*, 7, 292–306. doi:10.1080/15427609.2010.526527
- Waldinger, R. J., & Schulz, M. S. (2010b). What's love got to do with it? Social functioning, perceived health, and daily happiness in married octogenarians. *Psychology and Aging*, 25, 422–431. doi:10.1037/a0019087
- Whitton, S. W., Waldinger, R. J., Schulz, M. S., Allen, J. P., Crowell, J. A., & Hauser, S. T. (2008). Prospective associations from family-of-origin interactions to adult marital interactions and relationship adjustment. *Journal of Family Psychology*, 22, 274–286. doi:10.1037/0893-3200.22.2.274



**Table 1. Comparison of the Subsamples on Key Study Variables**

Variable	Sample			Comparison of the subsamples		
	Total sample	College subsample	Inner-city subsample	95% CI for the difference between subsamples	Standardized mean difference	<i>t</i> test
Family environment ( <i>n</i> = 81)	<i>M</i> = 2.88, 95% CI = [2.62, 3.15]	<i>M</i> = 3.04, 95% CI = [2.74, 3.34]	<i>M</i> = 2.62, 95% CI = [2.12, 3.13]	95% CI = [-0.96, 0.12]	0.35	<i>t</i> (79) = -1.53
Adaptiveness of emotion-regulation strategies ( <i>n</i> = 73)	<i>M</i> = 4.48, 95% CI = [4.34, 4.61]	<i>M</i> = 4.50, 95% CI = [4.37, 4.62]	<i>M</i> = 4.45, 95% CI = [4.15, 4.75]	95% CI = [-0.37, 0.27]	0.09	<i>t</i> (71) = -0.31
Security of attachment (transformed) ( <i>n</i> = 81)	<i>M</i> = 0.93, 95% CI = [0.86, 1.00]	<i>M</i> = 0.94, 95% CI = [0.86, 1.02]	<i>M</i> = 0.90, 95% CI = [0.77, 1.03]	95% CI = [-0.18, 0.10]	0.13	<i>t</i> (79) = -0.55

Note: The standardized mean difference between the subsamples is equivalent to a *d* effect size. CI = confidence interval.



**Figure 1.** Results of the mediation analysis: Adaptiveness of emotion regulation in midlife as a mediator of the effect of childhood family environment on security of attachment in late life. Results of Mediation Analysis. The values above the arrow from family environment to attachment security are derived from Step 1 in the model, and the values below the arrow are from Step 2, after the mediator was included. Asterisks indicate significant coefficients ( $p < .05$ ). CI = confidence interval.