

Effects of family connection and family individuation

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This prospective longitudinal study explores the differential effects of family connection and family individuation measured during adolescence on later midlife well-being. Home interviews were held in the 1970s with 99 families of 245 adolescents. Connection and individuation in the family system were measured by self-report, a projective exercise, and coding of taped family interactions. Twenty-five years later, telephone interviews were conducted with 54 men and 120 women (representing 82 families) who had been adolescents in the 1970s interviews. Family connection (measured during adolescence) was associated with self-acceptance and positive relationships at midlife partially mediated by marriage. Family individuation (measured during adolescence) was associated with personal autonomy at midlife.

Keywords: longitudinal; family; attachment; connection; individuation; marriage

Introduction

Family researchers have long argued for the importance of the childhood family on adult outcomes. The family creates a primary reality for children and adolescents as they absorb their family's culture. Models, thought patterns, expectations, and meanings absorbed in the family pervade the rest of life, both through the filtering of perceptions and through expectations of what is and what can be (Bowen, 1978; Dickstein, Seifer, & Albus, 2009; Litz, 1992; McGoldrick, Gerson, & Petry, 2008). Family effects have been observed in adolescence (L.G. Bell & Bell, 1982; Belsky, Lerner, & Spanier, 1984; Grotevant, 1997; Powers, Hauser, Schwartz, Noam, & Jacobson, 1983), in young adulthood (Aquilino, 1997; White, Speisman, & Costos, 1983), and at midlife (L.G. Bell & Bell, 2005).

The family system and each of its subsystems, particularly the parents' relationship, contribute to the health and well-being of children (Bowlby, 1949; Cowan & Cowan, 2009; George, 2009). For example, both parental adult attachment and parental couple attachment influence children's adaptation to elementary school (Cowan, Cowan, & Mehta, 2009). Marital quality and parental conflict affect the long-term well-being of children: commitment, closeness, and equality in marriage are associated with children's psychological health (Lewis & Looney, 1984; Lewis,

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Beavers, Gossett, & Phillips, 1976). Parental divorce increases the likelihood of insecure adult attachment in adult children (Crowell, Treboux, & Brockmeyer, 2009). Parents' ability to conceptualize and talk about their emotions affects the ability of their children to understand and regulate their own emotions (Gottman, Katz, & Hooven, 1997). Parents who avoid the tension in the marital relationship by focusing together on an adolescent's problem, or pull the adolescent into a cross-generational coalition with one parent against the other, inhibit the child's ego development (L.G. Bell, Bell, & Nakata, 2001). Inter-parental conflict affects the child's emotional security (Davies & Cummings, 1994) and has been associated with greater anxiety, greater depression, lower self-esteem, and conduct disorders in children (Forsstrom-Cohen & Rosenbaum, 1985; Gonzales, Pitts, Hill, & Roosa, 2000; Higgins & McCabe, 1994), as well as with lower satisfaction in couple relationships in young adulthood (Andrews, Foster, Capaldi, & Hops, 2000) and poorer relationships later with their own children (McNeal & Amato, 1998).

Connection and individuation have been core concepts in our 25-year prospective longitudinal study of family process and family effects on children. A major component of this project has been the taping and coding of whole-family interactions during structured home interviews. Family connection (as reflected in mutual affection, warmth and supportive communication among family members) and family individuation (as reflected in mutual respect, clear interpersonal boundaries and validation of individuality) have been at the heart of this work over the years, ever since a distinction between *support* and *acknowledgement* became clear to us through the work of Mishler and Waxler (1968), Riskin and Faunce (1969), and others. We have looked at connection and individuation both in the United States and in Japan (D.C. Bell, Bell, Nakata, & Bell, 1996; L.G. Bell, 1989). Our cross-cultural experiences have greatly informed our understanding and conceptualization of these concepts. The work of Takeo Doi has been particularly helpful (Doi, 1981).

Although connection and individuation and related concepts have been of consistent interest in family research (Bengtson & Grotevant, 1999; Grotevant & Cooper, 1998), and researchers and theorists acknowledge their centrality for understanding the family-individual interface (Benson & Deal, 1995), their association has been theoretically problematic. Connection and individuation have sometimes been described as independent processes (D.C. Bell & Bell, 1983; Bengtson & Grotevant, 1999; Grotevant & Cooper, 1998; İmamoğlu, 2004). However, other researchers have conceptualized them as inherently conflictual: as opposite ends of one continuum, with a mid-range balance between connection and individuation seen as the healthier position (Minuchin, 1974; Olson, 1993). In this view, connection is seen as a centripetal process involving warmth, support, and nurturance, while individuation is seen as a centrifugal process involving independence and personal mastery. In summary, most family research has focused on two related (but conceptually distinct) concepts even though some see them as polar opposites. Our goal in this work as has been to conceptualize them as independent processes with differential effects on development.

A longitudinal study by Allen et al. (1994) highlights both the value and difficulty of differentiating connection and individuation in family process. Their study, like ours, uses coding of family process during discussion of differences in opinion as a basis for evaluating interaction during adolescence. A factor analysis of their coding

categories did not differentiate positive connection (relatedness) from positive individuation (autonomy), supporting the mutuality of these aspects in healthy family process. This combined factor was related to both self esteem and ego development in adolescents. However, negative aspects of connection and individuation were differentiated. The difficulty in conceptualizing connection and individuation as independent processes is, at least in part, because they are empirically related. A coding scheme which successfully differentiated the two found them to be correlated .53 with each other (L.G. Bell & Bell, 2005). In a secure attachment relationship, a *secure base* for exploration and individuation is intertwined with the *safe haven* of a warm, connected relationship (Bowlby, 1969/1982). Not surprisingly, then, it can prove difficult to write interaction process coding procedures which clearly differentiate the two. The fact that Allen et al. found one *autonomous-relatedness* factor may have been due to a lack of positive items which clearly differentiated connection from individuation. Items such as *confidence in stating one's position* or *attending to the other person's statements* (Allen et al., 1994) may reflect both concepts.

In this paper, we investigate the independent effects of family connection and family individuation on adult well-being. The analyses focus on how particular midlife attributes of well-being develop out of the adolescent family, in particular how self-esteem and the ability to form trusting relationships develop out of family connection processes, while autonomy develops out of family individuation processes. It builds specifically on two earlier studies. D.C. Bell and Bell (1983) demonstrated the effects of family system variables on adolescent development; L.G. Bell and Bell (2005) demonstrated long term effects of the adolescent family system on well-being at mid-life. In the latter study, family connection and family individuation were the two measures used evaluate the adolescent family system, but their particular effects were not differentiated. This paper follows up on that study by seeking to quantitatively differentiate the two concepts using a combination of insider and outsider measures of family process, as well as by looking at the differential expected effects of family connection and family individuation measured in the adolescent family system on self-acceptance, trusting relationship, and personal autonomy at mid-life. Our model of the connection and individuation processes is given in Figure 1.

Connection

Children, like adults, have a fundamental need to be cherished and nurtured (Bakan, 1966; McAdams, 1989). The basis for this need is an attachment circuit in the brains of all mammals; in humans, the attachment circuit motivates the desire for physical contact and emotional support (Bowlby, 1969/1982; Panksepp, 1998). Attachment experiences shape an individual's self-image (Bowlby, 1973). The sense that the child is valued nurtures trust and self-esteem in the child (Mikulincer, 1995; Sroufe & Fleeson, 1986). The complementary process of caregiving is motivated by a separate brain circuit active in the parent (D.C. Bell, 2001; Panksepp, 1998). Caregiving functions in the connection process as a "safe haven" for the child (Bowlby, 1969/1982, 1988). When the parent's caregiving is matched with the child's attachment, we observe a relationship that is based on the child's active depending on the parent for safety, security, comfort, and warmth (Doi, 1981; Stern, 1985). In this process, the child's depending is met with

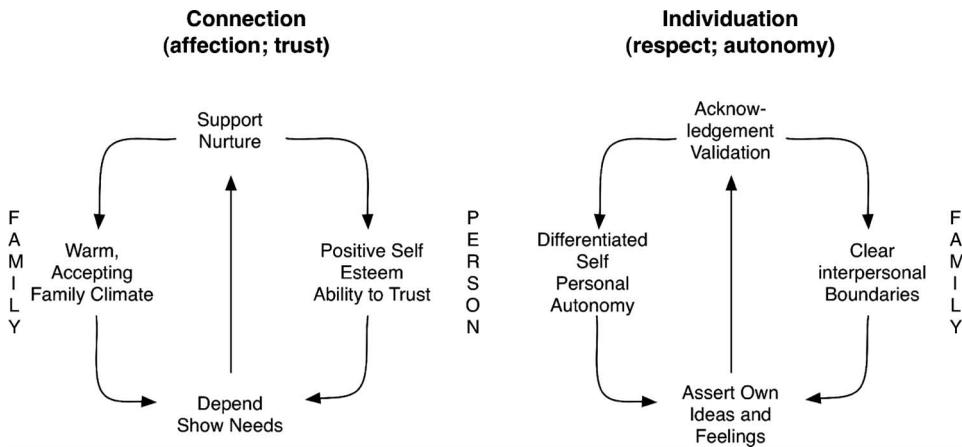


Figure 1. Connection and individuation processes.

affection and nurture by the parent(s). Repetition of these nurturing exchanges create a warm, accepting family climate and support the development in the child of self-esteem and the ability to trust. Self-esteem and trust, in the context of a warm, accepting family climate, encourage children to show their needs and depend on others for support. Children's increasing ability to trust enhances their ability to create affectionate, nurturing relationships with others. We refer to the combination of parental caregiving with child attachment as a *connection process*. Although we describe the connection process relative to the child, a similar, mutual process can exist in adult relationships or sibling relationships. This connection cycle is similar to that described by Collins and Feeney (2000) in their study of support-seeking and caregiving among dating couples. In that study, partner disclosure of a personal problem was enhanced in relationships characterized by more secure attachment (specifically a less anxious caregiver and less avoidant support-seeker).

What we are describing here is closely related to ideas within attachment theory. While attachment style is an individual construct, attachment theory highlights the importance of relationship (Duemmler & Kobak, 2001) and also the importance of both attachment and care-giving systems (D.C. Bell, 2001; Bowlby, 1969/1982). However, we avoid using some attachment terminology because of differences in this account from the usual attachment account. For example, we refer to the caregiving-attachment process as a "connection process" (rather than as an "attachment process") because attachment per se refers properly to the child's behavior and internal process (Bowlby, 1969/1982). The connection process we describe consists of both attachment and caregiving processes. In addition, we prefer to avoid the term "secure attachment" because secure attachment is usually operationalized in attachment research as a nominal rather than as an interval variable (Brennan, Clark, & Shaver, 1998).

In a negative connection process, parental neglect, rejection, or abuse create a cold, rejecting, or hostile family climate, and inhibit both self-esteem and the ability to trust. These family and child processes reduce open dependency, leading instead to self-protection, defensiveness, and an unwillingness to become vulnerable by

exposing one's needs for nurture. This negative process is described in attachment literature as "attachment avoidance" (Ainsworth, Blehar, Waters, & Wall, 1978; Bartholomew & Horowitz, 1991; Bowlby, 1980).

Individuation

Over much of the child's early years, the parent is focused on meeting the child's attachment needs. However, just as people have a need to be cherished and nurtured, they also have a need to be autonomous and effective (Erikson, 1963). As toddlers begin to be capable of independent action, most parents partially refocus their caregiving actions on the young child's needs for autonomy and effectiveness (Brazelton & Cramer, 1990; Mahler, Pine, & Bergman, 1975). Individuation and self-differentiation are also prominent in the development of adolescents and young adults (Grotevant & Cooper, 1998). Parental caregiving toward these older children takes the form of acknowledgement and validation of the child's ideas, feelings, and accomplishments. We refer to the combination of this aspect of parental caregiving with the child's development of a differentiated self and a sense of personal autonomy as an *individuation process*. The child's assertions of ideas and feelings are respected and acknowledged by the parents. Caregiving functions in the individuation process as a "secure base" for the child's exploration and growth in mastery (Bowlby, 1969/1982).

To the extent that parents' caregiving efforts are directed toward promoting a family system with clear interpersonal boundaries, where members are encouraged to think for themselves, speak for themselves, and accept others' differences, children develop a differentiated self and a capacity for autonomous action, learning how to direct their efforts effectively toward mastering the environment (Grotevant & Cooper, 1985; Kerr & Bowen, 1988) and supporting their sense of psychological well-being (Bohlander, 1999; Tuason & Friedlander, 2000). Even the experience of conflict, in the right context, can be positive, assisting in identity formation, the development of conflict resolution skills, and assertive behaviors (Holmbeck, 1996). From validating interactions, a family system arises with clear interpersonal boundaries, in which individuals are comfortable with individuality and with interpersonal differences. Acknowledgement and validation support children's increasing differentiation of self and sense of personal autonomy (D.C. Bell & Bell, 1983; Grotevant & Cooper, 1985). Clear interpersonal boundaries within the family, an increasingly differentiated self, and a sense of personal autonomy encourage children in asserting their own ideas and feeling (Karpel, 1976; Stierlin, 1976). Experience in an individuated family process enhances the ability to form similar relationships with others outside of the family. The child grows up able to participate in mutually validating adult relationships. In a negative individuation process, invalidation and mystification have the effect of decreasing comfort with individual differences and blurring interpersonal boundaries, leading in turn to less accurate interpersonal perception. In this environment, it is difficult for the child to form a differentiated self or a sense of personal autonomy, thus further reducing self-assertion.

As mentioned above, connection and individuation are often empirically related. Attachment theory talks about the development of autonomy within the context of secure attachments (Ainsworth et al., 1978; Allen, Aber, & Leadbeater, 1990). Family connection in our model can be seen as congruent with a "safe haven"

provided by a reliable nurturing parent, while the family individuation process involves a “secure base” from which the adolescent differentiates and develops personal autonomy. Well-functioning young people report a close connection with parents while at the same time demonstrating high levels of autonomy and individuation (Apter, 1990; Cooper, 1999; Grotevant & Cooper, 1998; Hill & Holmbeck, 1986). Healthy connection (healthy parent–child caregiving/attachment relationship) is hypothesized to support healthy individuation in the child in the form of the child’s exploration and autonomous growth (Bowlby, 1969/1982; Bretherton & Munholland, 1999). Correlational studies support this hypothesis (Mikulincer, 1995). A founding father of family therapy, Carl Whitaker, argued that family members can only be as connected as they are separate:

We feel that the family’s capacity to be intimate and caring and their capacity to be separate and divergent increase in careful synchrony. People can’t risk being close unless they have the ability to be separate—it’s too frightening to be deeply involved if you aren’t sure you can be separate and stand on your own. They also can’t risk being truly divergent and separate if they are unable to count on a residual warmth and caring to keep them together. The more forceful and independent they become, the easier it is to risk being intimate and close. The more closeness, the easier it is to risk independence (Napier & Whitaker, 1978, p. 93).

Hypothetical model

In this paper, we test a model that includes the independent effects of family connection and family individuation (as experiences during adolescence) on psychological well-being 25 years later at mid-life (Figure 2). The model we present and test here makes differential predictions for connection and individuation: adolescent family connection is expected to be associated with self-acceptance and trusting relationships at midlife; adolescent family individuation is expected to be associated with personal autonomy at midlife. Because connection and individuation tend to be empirically correlated, it is often difficult to detect their independent effects. In this paper, we construct variables representing connection and individuation to minimize their overlap. In the model, we include marriage in order to investigate its role as a mediator of adolescent family environment on adult well-being, as well as its independent effect.

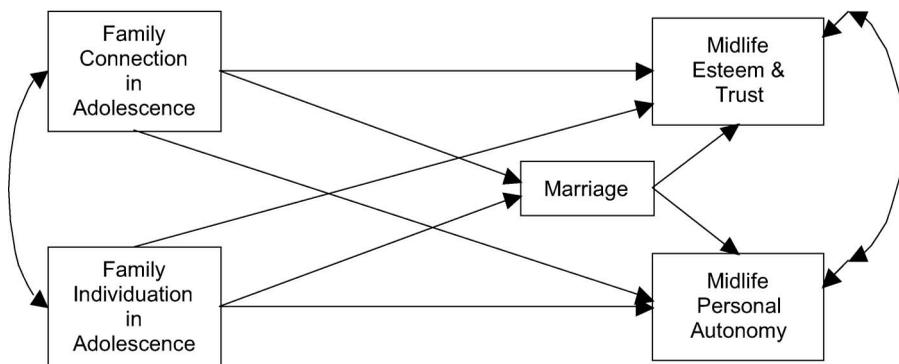


Figure 2. Initial model to be estimated.

Method

In the longitudinal study reported here, we relate family systems variables measured during adolescence with adult well-being measured at midlife. The quality of the family systems was measured using self-report, projective, and observer measures (coding of family interaction process) from structured home interviews in the 1970s. Data on well-being at midlife were taken from telephone interviews conducted 22–27 years after the original home interviews with individuals who were adolescents at the time of the 1970s interviews.

Sample Wave 1 (1975–1976)

Data were gathered on 99 families during structured home interviews. Families were recruited through one of three high schools in one school district; the area was white, middle class, suburban. All families had two parents and their two or three children, one of whom was a 15–17-year-old daughter. Almost all children were biological offspring, but adoptive families were not excluded. We sought a homogeneous sample in order to focus on the effects of family systems revealed in the family's interaction process. Coding of family interaction process was at the time an emerging technology (Riskin & Faunce, 1972) and, being limited to a relatively small sample, we wanted to minimize as many extraneous effects as possible (e.g., ethnicity, class, family structure) in order to increase the possibility of being able to test family system effects on individual development with minimal confounding.

A two-stage screening procedure was employed to select families. First, a questionnaire was given to all freshmen and sophomore students in the three high schools. This questionnaire included a sociometric measure and questions about family structure. Eligible girls were invited for a second stage of screening. Girls were excluded if both parents were foreign-born or if a family member had severe health problems. Two hundred and eighty-three girls (out of 485 who were invited) agreed to participate (with parental permission) in an after-school session in which they completed shortened forms of Loevinger's sentence completion measure of ego development (Loevinger, 1966; Loevinger & Wessler, 1970) and the California Psychological Inventory (CPI; Gough, 1987). They were paid US\$2 each. Girls were screened from the sample if they scored higher than 31 on the Good Impression scale of the CPI (implying that they might have been falsely giving a good impression) or lower than 19 on the Communal scale (implying that they may have been answering items randomly). Of 215 eligible girls, 100 girls and their families (99 families; two girls were sisters) agreed to be interviewed. There were no significant differences in interviewed vs. non-interviewed families on father's education, mother's education, number of children in the family, religion, or position of the identified adolescent (oldest, middle, or youngest). There was, however, a difference in the functioning of the identified adolescent as measured by the psychological and sociometric tests. Families who declined had, on average, adolescents who scored less well on a summary score of these measures (L.G. Bell & Bell, 1982). However, although the sample was drawn originally from a "normal" (i.e. non-clinical) population recruited through high schools, normality did not mean homogeneity. Instead, this sample represents a range of family functioning. When Wave 1 families were rated by coders trained in family therapy on family health, using a 5-point scale from "very functional" to "very non-functional," 45% of sample families were rated

as “very” or “fairly functional,” 28% as “somewhat non-functional but coping adequately,” and 27% as “fairly” or “very non-functional.”

Almost all of the parents were raised during the Depression and married after World War II. Of the fathers, 89% had graduated high school; 32% were college graduates. As for mothers, 97% had graduated high school; 18% were college graduates. The parents had stayed married and had two or three children. In total, the families included 245 adolescents, defined broadly as children age 9–21-years-old. This included the adolescent daughter through whom the family had been recruited and her adolescent siblings. Due to the recruitment method, there are more adolescent girls ($N = 163$, ranging in age from 9 to 21; Mean = 15.71; $SD = 2.46$) than boys ($N = 82$, ranging in age from 9 to 21; Mean = 15.22; $SD = 3.00$).

Measures Wave 1

The home interview included questionnaires, a family projective exercise, the Family Paper Sculpture (L.G. Bell, 1986), and a family revealed difference task (Strodtbeck, 1951). Family interactions during the revealed difference and projective exercises were audio-taped for later coding.

Family Environment Scale (FES; Moos, 1974)

Family members described their family on a shortened version of this true-false self-report instrument constructed to measure concepts such as cohesion (commitment to the family; helpful and supportive interactions), expressiveness (act openly and express feelings directly), conflict (open expression of anger and aggression), and independence (value assertiveness and self-sufficiency). The average score on each item (average of all family members) was taken as the family's score.

Family projective measure

The Family Paper Sculpture (L.G. Bell, 1986; L.G. Bell, Dendo, Nakata, Bell, Munakata, & Nakamura, 2004; L.G. Bell, Ericksen, Cornwell, & Bell, 1991; Wedemeyer & Grotevant, 1982) is a projective exercise. Family members were given a variety of colored circles (to represent people), red and black strips of various length (to show similarity and differences between people) and blue yarn loops (“boundary markers”) of various sizes. Family members were asked to jointly arrange the materials on a standardized white board in a way that described their family. The family's FPS was photographed. Various items were coded from the picture, including individual, marital, and family boundaries, as well as distance between circles representing family members.

Family revealed difference exercise

The family participated in a revealed difference task (Strodtbeck, 1951) on the basis of family members' individual answers to selected items from the FES. Items on which family members had disagreed were selected for discussion, and the family was asked to discuss these items and try to reach agreement. The same pattern of differences was used with each family (e.g. Mom against all, Dad against all, Mom and Dad vs. kids, Mom and oldest vs. Dad and youngest, etc).

Global coding of family interaction

Family system variables were coded from the tapes of the family interactions using the Global Coding Scheme (GCS; L.G. Bell, Cornwell, & Bell, 1983), a global outsider instrument. The GCS scales were derived from the Beavers-Timberlawn Family Evaluation Scale (Lewis et al., 1976) and the Family Behavioral Snapshot (Meyerstein, 1979). The items of the GCS included measures of family mood, warmth, boundaries, comfort with disagreement, conflict, and communication.

Micro-analytic coding of family interaction

Family interactions during the revealed difference exercise were also coded using a micro-analytic coding scheme (phrase-by-phrase and statement-by-statement coding). The Interaction Process Coding Scheme (IPCS; D.C. Bell, Bell, & Cornwell, 1982) provided an outsider view of family interaction at the micro-analytic level. Trained observers coded the family discussions from tapes and transcripts. The IPCS was developed from the work of Mishler and Waxler (1968), Riskin (1964), Riskin and Faunce (1969), and Raush and colleagues (1974). The items of the IPCS included measures of topic focus (on task/off task; behavior, feelings, thoughts), who spoke to whom, support (tone of voice), and acknowledgement.

Family system measurement model: connection and individuation

The development of measures of family connection and family individuation to be used in this study proceeded in a series of steps. The first step was theory based. Items expected to measure family connection (but not individuation) and family individuation (but not connection) were selected from the four domains of measurement. These four domains included insider perspectives: self-report (FES) and projective (FPS) measures, as well as outsider perspectives: global coding (GCS) and microanalytic coding (IPCS) of family interaction process.

Second, we conducted confirmatory factor analyses of each concept separately to reduce the number to items and to remove methods factors. Faced with the impossibility of testing a structural equation model with numerous indicators of family connection and family individuation with a relatively small sample, we decided to focus first on the creation of a single measure for each theoretical variable. We did this by conducting a separate confirmatory factor analysis for each variable. The purpose of this procedure was to extract measures of connection and individuation separately so as to minimize the overlap in their measurement. On the basis of theory and prior analyses of the Wave 1 data (D.C. Bell & Bell, 1983), we chose two criteria to anchor each factor analysis. We used self-esteem of participants' parents (measured at Wave 1) and participants' midlife esteem and trust (measured at Wave 2) to anchor the extraction of a family connection measure. We used parent ego development (Wave 1) and adult autonomy (Wave 2) to anchor the extraction of a family individuation measure.

We were aware of potential methods bias in the measures we wished to construct. Recent research has shown that family concepts measured by different methods inherently diverge (Lorenz, Melby, & Conger, 2007; Rueter & Piescher, 2007). Therefore, a measurement model was constructed in which each item was estimated as the result of two effects: the family-level construct (connection or individuation)

and a methods factor. We conducted confirmatory factor analyses using EQS (Bentler, 1995). Each analysis estimated a single conceptual factor (family connection or family individuation) and a set of methods factors. That is, each FES item was assumed to derive its value from the unobserved conceptual family-level construct as well as an unobserved FES measurement factor; each IPCS item was assumed to derive its value from the unobserved conceptual family-level construct as well as an unobserved IPCS measurement conceptual variable; and so on. In each factor analysis, Wald tests were used to drop items that were least consistent with the confirmatory model.

As a result of these analyses, 34 potential measures of family connection (8 from the FES, 10 from the GCS, 12 from the IPCS, 4 from the FPS) and 39 potential measures of family individuation (13 from the FES, 12 from the GCS, 11 from the IPCS, 3 from the FPS) were reduced to 14 items to measure family connection and 15 items to measure family individuation. These factor analyses gave unstandardized factor loadings for the methods factors. These methods factor loadings were subtracted out of the original item scores as a prelude to step three. The final items in each domain are given in Appendix 1. The procedure for removing methods effects was fully successful in measuring family connection ($\alpha = .83$), but less successful for family individuation ($\alpha = .64$).

The third step in constructing conceptual measures of family connection and family individuation was to compute construct scores based on the items resulting from the confirmatory factor analysis (14 items for family connection; 15 for family individuation). Standard scores on these items were averaged to create a single measure of family connection and a single measure of family individuation for each individual in the sample. The fourth step checked the measures of family connection and family individuation for variation according to age of children in the family. The targeted girls in each family were 16–17 years old; however, the ages of their siblings varied, since some of the targeted girls were the oldest child, some the middle, some the youngest. During adolescence, families are expected to show a greater amount of family individuation as the children become older (Carter & McGoldrick, 2005). We regressed family connection and family individuation on the mean age of children in the family. The effect of age on family connection was not significant ($\beta = -0.02$, $p > .70$). The effect of age on family individuation was significant ($\beta = 0.26$, $p < .001$), so we corrected the individuation measure to reflect the predicted level of these variables for a family with a mean child age of 16.

Sample Wave 2 (1998–2002)

Telephone interviews were completed with 174 now midlife adults, former Wave 1 adolescents. We located 199 former adolescents from 82 of the 99 original families through high school alumni directories and old records (quite a few of the parents still lived in the same house). Of these, 10 had died or were too ill to participate; 14 refused the interview either directly ($n = 9$), or indirectly by continually postponing it ($n = 5$). One person started the interview but then withdrew after giving only basic demographic information. Of those we contacted who were not too ill to participate, 95% of the women and 87% of the men completed an interview by phone. The analyses reported here are based on telephone interviews with these 120 women and 54 men in their late 30s or early 40s (for men, mean age = 37.6, $SD = 2.6$; for women, mean = 38.0, $SD = 2.8$). All of the participants were high school graduates.

Seventy percent of the men and 66% of the women were college graduates; 20% of the men and 27% of the women had postgraduate degrees.

Measures Wave 2

Marital status

Seventy-nine percent of the women and 72% of the men were currently married. For the purpose of our analyses, persons self-identified as being in a committed relationship (who said they lived with a partner, mate, husband, or wife) were coded as married.

Well-being at midlife

The Wave 2 telephone interview included a well-being scale (Ryff, 1989; Ryff & Keyes, 1995) consisting of 18 statements to which respondents stated their agreement or disagreement at levels of *slight*, *moderate*, or *strong*. Three subscales were used in the analyses reported here: self-acceptance, positive relationships, and autonomy. Self-acceptance includes having a positive attitude toward one's self. Positive relationships involves having warm, satisfying, trusting relationships with others which involve empathy, affection, and intimacy (Ryff & Keyes, 1995). In our sample, these two scales correlate .45 for women and .58 for men. They were averaged to create a measure of esteem and trust. Personal autonomy at midlife was measured by the autonomy subscale of the Ryff. Autonomy involves being self-determining and independent and able to resist social pressures (Ryff & Keyes, 1995).

Results

In the creation of the connection and individuation scales, items were examined individually for normality. Items that showed high levels of kurtosis or skewness were transformed to minimize their non-normality. As a result, skew and kurtosis were in acceptable ranges, so maximum likelihood estimation was used for the structural equation analysis (Kline, 2005). Because each concept was measured by a single variable, there was no separate measurement model. Correlation matrix, means, and standard deviations for study variables are given in Table 1.

Table 1. Description of study variables (means, standard deviations, correlations): descriptive statistics for men ($N = 54$) are below the diagonal; those for women ($N = 120$) are above the diagonal.

	Mean	SD	1	2	3	4	5
Mean			0.02	-0.02	0.78	5.13	4.83
Standard Deviation			0.55	0.40	0.41	0.76	0.83
1. Family Connection	-0.04	0.57	1.00	0.34	0.10	0.30	0.08
2. Family Individuation	-0.08	0.37	0.46	1.00	-0.05	0.13	0.15
3. Marriage	0.72	0.45	0.30	-0.03	1.00	0.23	-0.01
4. Midlife Self Esteem & Trust	4.85	0.97	0.18	-0.01	0.49	1.00	0.37
5. Midlife Autonomy	4.96	0.79	0.06	0.25	0.05	0.33	1.00

All effects were estimated as unstandardized (raw) regression parameters. Diagnostic indicators were then used to improve the fit of the model to the data (Dunn, Everitt, & Pickles, 1993; Hoyle & Panter, 1995; Kline, 2005). Following procedures recommended by Byrne (2006), initially structural equation models (SEM) were conducted separately for men and women. The model for both men and women assumed an association between family connection and family individuation. Direct effects from each family system concept were estimated to the two midlife well-being concepts. Marriage was estimated as an intervening variable between the family system and the midlife well-being. In a previous analysis (L.G. Bell & Bell, 2005), we found that the effects of mothers' and fathers' education and ego development on the midlife well-being of their children were fully mediated by family system measures, so these potential control variables were not included in the current analysis. Furthermore, we checked for clustering of adult well-being by family and found no significant level of clustering (intraclass correlation was .00 for self-acceptance and positive relationships and .07 for autonomy). The error terms on the well-being concepts were allowed to covary to capture evidence of other common factors that might have affected these well-being measures. Crossover effects (e.g., from family connection to midlife personal autonomy) were included. To the extent that connection and individuation represent a single concept, such crossover effects would be expected. Our theoretical analysis, which suggested that the two concepts are independent, predicted nonsignificant crossover effects.

Both models gave good fit to the data (final model for men: normed fit index, NFI = .933, comparative fit index, CFI = 1.000, goodness of fit index, GFI = .978, root mean square error of approximation, RMSEA = .000; for women: NFI = .911, CFI = 1.000, GFI = .984, RMSEA = .000). Significant effects were found for men of family connection on marriage; marriage on adult relatedness; and family individuation on adult autonomy. Significant effects were found for women of family connection on adult relatedness and of marriage on adult relatedness.

Parameters that were found to be nonzero in either men's or women's models were then estimated in a two-sample structural equation model in which parameter estimates for women were constrained to be equal to parameter estimates for men. Both Lagrange multiplier tests to identify inequality constraints that should be relaxed (indicating differences between men and women) and Wald tests to identify parameters that did not differ from zero were conducted. No tests suggested changes to the combined model. Since no significant differences were found between the men's and women's models, we re-analyzed the data for men and women together to create a final model.

The final model is shown in Figure 3. The figure shows all parameters that are significantly different from zero. Although estimates were computed using unstandardized values, the figure converts parameters to standardized values to improve interpretability. The final model had a chi-square of 2.20 ($df = 4$, $p = .698$), indicating that the predicted data given the model were not significantly different from the observed data. There was a very good fit to the data (NFI = .975, CFI = 1.000; GFI = .995; RMSEA = .000).

Results from the SEM were consistent with the hypotheses. Family connection (measured during adolescence) was associated with self-acceptance and positive (trusting) relationships at midlife around 25 years later. Family individuation (measured during adolescence) was associated with personal autonomy at midlife. For both men and women, family connection affected the likelihood of marriage,

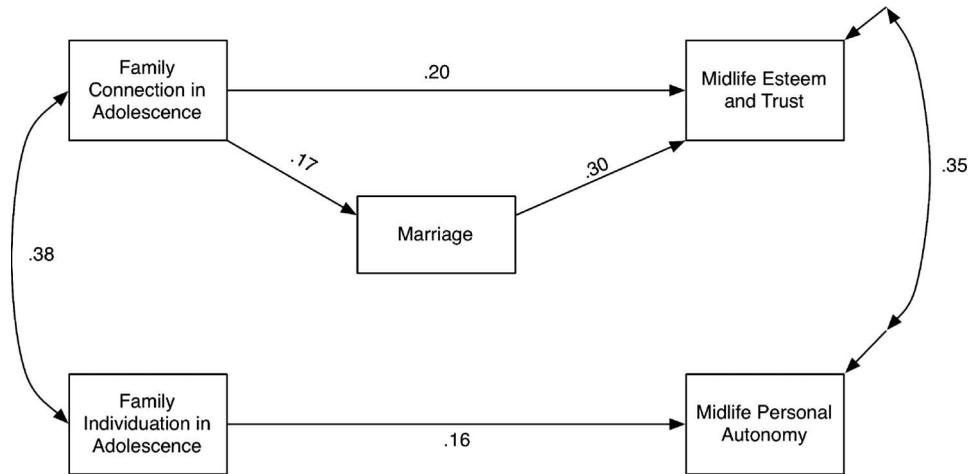


Figure 3. Final structural model.

and marriage increased self-acceptance and positive (trusting) relationships at midlife (this effect was marginally larger for men than for women by the Lagrange Multiplier test, $p = .085$). The adolescent family measures of connection and individuation were positively correlated. There was also a correlation of error terms for esteem/trust and personal autonomy consistent with the existence of factors other than those measured in this model (e.g. adult life experiences) which also influence these variables.

Discussion

A number of family scientists have developed useful maps for looking at the family as a system, including Bob Beavers (Beavers & Hampson, 1990), Larry Constantine (1986), David Olson (1981), and David Reiss (1981). Each of these theories describes an interplay between, on the one hand, being close, caring, and supportive and, on the other hand, having clear interpersonal boundaries, individual identity, and autonomy. It has been strongly suggested that these two constructs are central for understanding the interface between the family system and individual functioning (Bengtson & Grotevant, 1999; Benson & Deal, 1995). Like other family researchers interested in the association between family relationships and individual development, we have tried to find ways of conceptualizing family relationships and family systems that are useful to that endeavor. The research reported in this paper builds on previous work showing that marital and family systems affect child development in adolescence (D.C. Bell & Bell, 1983; L.G. Bell & Bell, 1982; L.G. Bell et al., 2001) and work showing that the family system also mediates the effects of parental resources (education, ego development) on the well-being of adult children (L.G. Bell & Bell, 2005). The results reported here support the value of differentiating family connection and family individuation and conceptualizing them independently of each other, each with potentially unique effects on children growing up in the family, even though the two tend to be correlated with each other in the real world. Even though attempts to distinguish their effects may be methodologically difficult, we suggest that the effort is worthwhile.

The analyses presented here support a model of connection which associates a warm family climate in which dependency needs are met with the development of self-esteem and trust in children growing up in the family. This warm family climate also contributes to the likelihood of marriage. Both family connection and marriage contribute to midlife self esteem and ability to form trusting relationships. In addition, the data support a model of individuation which associates clear interpersonal boundaries in a family and validation of individuality with the development of personal autonomy in children growing up in the family. The relationship between family connection and midlife self esteem/trust was stronger for women in our sample; the relationship between family individuation and midlife autonomy was stronger for men. The differences between men and women, however, were not significant. Likewise, the effect of marriage on midlife self esteem/trust was marginally stronger for men, but the difference was not significant.

It is interesting that an individuated family system was not associated with marriage at midlife, suggesting that warmth and acceptance does more to support future marriage than respect and validation. It is possible, however, that our measure of individuation was also tapping into avoidant attachment (with items such as “We can come and go as we want in our family,” and “When there’s a disagreement in our family, we try hard to soothe things over and keep the peace”) and a more precise measure of individuation might provide a different result. In our sample, removing these two items from the scale changed the correlation between individuation and marriage from $-.03$ to $+.06$ for men, and from $-.05$ to $-.04$ for women; it did not change the results of the SEM. When we created our measures of connection and individuation, we were focusing on creating “pure” measures of each, i.e. measures in which one was not confounded with the other. It would be useful going forward to likewise create a measure of individuation which is clearly not confounded with avoidant attachment.

The results of this study support the usefulness of differentiating connection and individuation conceptually. They are consistent with a qualitative study of four families representing combinations of high and low scores on connection and individuation (L.G. Bell, Meyer, Rehal, Swope, Martin, & Lakhani, 2007). The qualitative study suggests that connection and individuation combine synergistically to create qualitatively different family processes. An example is how disagreements were discussed. Neither family scoring low on individuation was able to resolve disagreements. However, the family scoring low on both connection and individuation fought angrily about disagreements while the family scoring low on individuation and high on connection simply ignored them, keeping the peace without acknowledging differences.

There are several limitations in the reported analyses. The original sample of families was recruited through high schools. It was a non-clinical sample in which the families of the least well-functioning adolescents were less likely to agree to a home interview. It might be argued that results would be stronger if they were more representative of less well functioning families. The sample was also quite homogeneous: white, intact, middle-class, suburban families whose children became relatively well educated. The homogeneous sample was an intentional design decision, in order to examine effects of family process without the confounds of family structure or race- and ethnicity-based cultural differences. This initial choice, while making the effects of the family system easier to discern in a small sample, at the same time limits generalizability to other populations. We fully expect that the

connection and individuation processes which we have identified will be relevant to other families, but we cannot at this point analyze the additional relevance of ethnicity, class, or family structure.

Our theoretical model emphasized the effects of the family on the personality of children growing up in the family. However, there are many effects that were not considered in this study, such as child temperament and peer influences during adolescence. For instance, we are unable to test an alternative explanation that the effect of the family system on well-being resulted from adolescent characteristics or experiences which affected both the family and midlife well-being. At the same time, research has suggested that many external experiences such as peer relationships are substantially influenced by the family experience (L.G. Bell, Cornwell, & Bell, 1988; Kerns, Contreras, & Neal-Barnett, 2000). Factors from multiple contexts (e.g., family, school, and peer group) might best be seen as having reciprocal effects.

There are also several strengths in this research. One of the strengths is that the whole family was included, and they were interviewed in their home. Another strength is that the family variables were based on multiple measures of family process. Audio-taped family interaction process was coded on both global and microanalytic scales by individuals trained in family systems concepts. Self-report and projective measures were also included. Another strength is the longitudinal nature of this research: a prospective study over a period of 25 years in which a high percentage of the original sample was found and interviewed.

The results of the research presented here argue for the usefulness of clearly differentiating a connection process from an individuation process. Although individuation and connection may be seen as two kinds of strength a family can enjoy, they should not be seen as interchangeable; it makes a difference where a family's strengths lie. The results of this study also reinforce the importance of the family environment throughout the life course, supporting the idea that the family system as experienced in adolescence can have life-long implications for well-being. Although there are a large number of experiences that occur to people after they leave their families of origin, there are significant effects of that family which can be detected even after an interval of 25 years.

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Appendix 1. Measures of connection and individuation during revealed difference task. Family members discuss differences of opinion and try to reach agreement (negative/false items in italics).

Connection	Individuation
<u>Self-report (FES)</u>	
Family members really help and support one another	In our family we are strongly encouraged to be independent
Family members hardly ever lose their tempers	We can come and go as we want in our family
There is a feeling of togetherness in our family	We can do whatever we want in our family
<i>Family members sometimes get so angry they throw things</i>	We think things out for ourselves in our family <i>When there's a disagreement in our family, we try hard to soothe things over and keep the peace</i>
<u>Global Coding of Family Interaction Process (GCS)</u>	
Family has an atmosphere of openness, comfortableness, optimism and warmth	Family members take responsibility for their own actions, feelings, and thoughts, and not for those of others
Quality of laughter is warm and responsive	Feelings are directly and openly expressed
<i>Overt conflict in the family is severe and impairs group functioning</i>	<i>Covert conflict in the family is severe and impairs group functioning</i>
<i>The family has an atmosphere of depression, sadness, hopelessness</i>	Family members are comfortable with differences and disagreements among family members
<i>Family members isolated, disconnected, apathetic towards each other</i>	Feelings and thoughts are clearly expressed
The family's mood is very warm (vs. <i>very cold</i>)	<i>Anxious laughter</i>
Family members are accepting of each other (vs. <i>rejecting</i>)	
<u>Micro-analytic Coding of Family Interaction Process (IPCS)</u>	
Supportive tone of voice	Family members acknowledge what the others say Increase over time: statements that give information (<i>rather than argue own position</i>) <i>Anxiety (measured from tone of voice)</i>
<u>Family Projective Exercise (FPS)</u>	
Boundary placed around whole family	Number of boundaries in the picture (individual and relational)
<i>Greater distance between family members</i>	
Family Connection	Family Individuation
Resubmit	

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