
**Predicting Young
Adult Competencies:
Adolescent Era Parent
and Individual Influences**

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This study was designed to investigate adolescent era parent behaviors and adolescent personality development as unique and joint predictors of young adult competencies. The study sample consisted of 79 two-parent with an adolescent families who, at the time the data used in these analyses were gathered, had been followed in longitudinal research for 11 years. Parent behaviors theoretically associated with (a) the development of adolescent autonomy while maintaining relatedness to the family (Autonomy and Relatedness Coding) and (b) adolescent ego development (Constraining and Enabling Coding) were used to predict young adult educational attainment and ego resiliency. Results indicated that (a) adolescent era parenting behaviors and (b) adolescent ego development contribute to the prediction of young adult educational attainment and ego resiliency. The influence of parenting behaviors was mediated through ego development. Parent talkativeness and parent behavior interacted in the prediction of ego resiliency.

Longitudinal research programs have laid the groundwork for identifying processes that underlie adaptive functioning in children and adolescents. Key contributions of research programs in the area of adaptive functioning have been clarifying the construct of competence and then identifying correlates and predictors of competence (e.g., Masten et al., 1988; Masten, Coatsworth, Neeman, Gest & Hubbard, 1995). This current study extended the research of Garmezy and colleagues into young adulthood by exploring adolescent era parent behaviors and adolescent personality development as unique and joint predictors of young adult competencies. A specific question provided the framework for study design and analyses: Does adolescent ego development

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mediate relations between adolescent era parent behavior and young adult competencies?

The research of Garnezy and Masten (Masten et al., 1988) indicated that competence is a multidimensional construct. Moreover, dimensions of competence vary with age. Social competence, school achievement, and behavioral cooperation constitute competence during the elementary school years (Masten et al., 1988). Interpersonal intimacy and work competence become additional indicators of competence during the late adolescent and young adult years (Coatsworth, 1991; Masten et al., 1995). In this study, competence was defined broadly, including both overt behavioral adaptation and personality development (in this article, educational attainment and ego resiliency, respectively) in the young adult years. (Note that the study's focus was on competencies; it is not presumed that the relations among parenting, adolescent personality development, and problem behaviors are similar.)

Garnezy (1985) has argued that three constellations of resources foster individual competence: parenting and family processes, individual attributes, and community support. Certainly, parenting is a proximal and powerful influence on individual development, a belief bolstered by findings from the seminal work on parenting typologies (e.g., authoritarian, authoritative) of Baumrind and colleagues (Baumrind, 1971; Baumrind & Black, 1967) and the research it has generated (Darling & Steinberg, 1993). Studies have supported the significance of aspects of parenting behavior on individual development. Parenting skills, parent monitoring, parent/child communication, and parent and child intelligence are associated with middle childhood as well as late adolescent competencies (e.g., Best, 1992; Hillman, 1988; Masten et al., 1988).

In the interest of further clarification of the contributions of parenting, Barber (1997) emphasizes the importance of disaggregating parenting typologies to understand how components subsumed in a particular parenting style (e.g., authoritarian parenting) influence a child's development and competencies in the near and distant future. Barber posits that parental behaviors predict individual functioning to the extent that they are associated with the development of an individual's autonomy, behavioral regulation, and connection with others. In these analyses, the focus was whether behaviors that foster autonomy while maintaining connection to others predict competencies.

Relevant to parenting and individual development analyses in the adolescent years are those studies that have pointed to relations between specific parental behaviors (toward the child or adolescent) and adolescent personality development as indexed through ego development (Allen, Hauser, Bell, &

O'Connor, 1994; Hauser et al., 1984; Hauser, 1991; Loevinger, 1976). Ego development represents individual impulse control, interpersonal style, current concerns, and cognitive complexity (Hauser, 1976, 1993; Loevinger, Wessler, & Redmore, 1970). Other findings have indicated relations between parenting and the capacity to adapt flexibly to change and challenge, referred to as *ego resiliency* (Block & Block, 1980). The ego resiliency construct emerged from long-term longitudinal studies of preschoolers: those who thrived found ways to do well in a wide variety of situations (Block & Block). Finally, recent work has identified relations among aspects of parenting by mother and father, young adult occupational status, and years of education completed (Bell, Allen, Hauser, & O'Connor, 1996).

Although much is known about ties from parent behaviors to both ego development and competencies (e.g., Allen et al., 1994; Bell et al., 1996; Hauser, et al., 1984; Masten et al., 1988), less clear are linkages among those three constructs. Thus, the current study was designed to complement and extend the work cited previously through examination of the complex relations among parent behavior, adolescent personality, and young adult competencies. For example, the association between adolescent era parent behaviors and subsequent young adult competence might be understood best by the relation of parenting to earlier adolescent development. The primary focus of this study, then, was to understand the extent that parental behaviors in the adolescent era—directly and as mediated by adolescent ego development—would contribute to the prediction of young adult competencies over an 11-year time period.

Two questions provided the framework for this study of relations between parent behavior and young adult development: Do parental behaviors and adolescent ego development predict competence in the young adult era? Are relations between adolescent era parent behavior and young adult competencies mediated by adolescent personality development? Two complementary indices of parenting were used to identify and measure aspects of parent behavior. The micro-analytic system identified and measured specific aspects of parental speech theorized to facilitate or impede adolescent ego development (Hauser et al., 1992; Hauser et al., 1984). The molar coding system indexed broader aspects of parenting style posited to facilitate or impede the development of autonomy and relatedness (Allen, Worrell, Borman & Hauser, 1991; Allen et al., 1994).

Parental behaviors that foster parent/adolescent communication and/or encourage the development of autonomy while maintaining relatedness to the family were hypothesized to be associated positively with young adult educational attainment and ego resiliency. In addition, it was hypothesized

that parental speeches that interfere or discourage adolescent expression of thoughts and emotions (e.g., distracting, devaluing) would be associated negatively with educational attainment and ego resiliency. Because ego development has been linked to intelligence and perspective-taking (Newman, 1995), it was hypothesized that adolescent ego development would predict young adult educational attainment and ego resiliency. Finally, because parenting behavior has been linked to adolescent personality development, it was hypothesized that the influence of parenting behavior on young adult competence would be mediated by adolescent ego development. To consider whether specific combinations of parent behaviors and adolescent ego development function as predictors (as moderators) of young adult competence, exploratory analyses to test for interactions between parent behavior and relevant variables were included.

METHOD

Participants

Participants were involved in an ongoing study of individual development, now entering its twentieth year. Participants were recruited in two cohorts when approximately 14 years of age. Recruitment sites were selected to maximize the probability of variance in adolescent ego development—a construct of central and continuing interest to the principal investigator (e.g., Hauser, 1976, 1993; Hauser et al., 1992). Seventy participants were enrolled while inpatients at a private psychiatric hospital. The patients represented consecutive adolescent admissions, excluding those with diagnoses of mental retardation, thought disorder, and psychiatric impairment associated with medical illness. Although homogeneous in terms of experiencing major stresses associated with adolescent hospitalization (e.g., separation from home, new peer and adult community, often involuntary admission), chart reviews indicated that the hospitalized group was heterogeneous with respect to reason for hospitalization, functional impairment, and symptomatology. Among reasons noted for hospitalization were court ordered evaluations secondary to allegations of criminal activity, evaluations secondary to school refusal/truancy, suicide attempt(s), and non-compliant behavior. The diagnostic system used when these participants entered the study was the Diagnostic and Statistical Manual-II (DSM-II; American Psychiatric Association, 1968). Major changes between DSM-II and the current version (DSM-IV; American Psychiatric Association, 1994), make it difficult to interpret chart diagnoses in terms of current nosology.

Seventy-six adolescents from a local high school constituted the second cohort, which was created to match the hospitalized sample with respect to gender, birth order, and family structure (one-parent or two-parent figures). The adolescent participants and their families were studied initially for each of 3 years during adolescence (a small subsample of participants was studied a fourth year). Approximately 11 years after they joined the study, at about 25 years of age, all participants were located and 98% of those living were reassessed (by the time of the young adult assessment, one participant had died). For 25-year-old participants, the assessment included measures of attachment representation, ego development, symptomatology, and several other behavioral and sociodemographic variables.

Analyses reported here are based on the 79 participants who participated, with two parent figures, in the family assessment procedure the first year of the study. (Preliminary analyses indicated that the relations between parent behavior and young adult functioning were different in one-parent/adolescent as compared to two-parent/adolescent interactions. Until demonstrated that behaviors exhibited in the two-person as compared to three-person interactions have the same relation to outcome variables, it is premature to merge the groups for analyses.) One-way analyses of variance (ANOVA) indicated that the one-parent and two-parent participants did not vary in adolescent age, Year 1 ego development, number hospitalized or family socioeconomic status (Duncan Socioeconomic Index; Hauser & Featherman, 1977).

Of the 79 participants, 40 were recruited at a high school (females = 22, males = 18) and 39 at a hospital (females = 21; males = 18). One-way ANOVA compared the high school and hospitalized cohorts on several relevant measures. As expected, over 2 successive years the hospitalized sample was significantly lower in ego development: Year 1, $F(1, 77) = 78.56, p < .001$; Year 2, $F(1, 67) = 21.33, p < .001$. In addition, the parent sociodemographic status of high school participants was higher: $F(1, 74) = 19.03, p < .001$. However, the mean level of each group fell in the middle to upper middle class, indicating that neither group suffered economic hardship and that the practical significance of the difference may have been minimal. Parent behavior did not vary systematically between groups. Parents displayed similar levels of parent-to-adolescent (a) total speeches (talkativeness) and (b) enabling speeches. Parents of the hospitalized adolescents displayed less promotion of autonomy and relatedness ($F[1, 75] = 14.98, p < .001$) and a trend toward fewer constraining speeches ($F[1, 78] = 2.85, p < .10$). Because of the interest in how parenting (as behavior and style; Darling & Steinberg, 1993) and ego development (as a developmental status and as influenced by parenting) would contribute to competence across time, observations were

TABLE 1: Relation of Hospitalization Status to Demographic Attributes, Parenting, Adolescent Personality Development, and Young Adult Competencies

Variable	Hospitalized Cohort		High School Cohort	
	\bar{X}	SD	\bar{X}	SD
Gender ^a	1.5	.5	1.6	.5
SES	53.2	18.9	69.7	12.6
Talkativeness ^b	64.5	28.8	65.0	38.2
Density Constraining ^c	.2	.1	.3	.2
Density Enabling ^d	1.3	.2	1.3	.2
Encourage A/R ^e	4.5	.9	5.3	.8
Inhibit Autonomy	1.9	.8	1.8	1.0
Inhibit Relatedness	1.0	1.0	1.0	1.2
Adolescent Ego Development ^{***} (Year 2; Age 15) ^e	141.9	22.8	165.8	20.3
Total Education ^{***}	2.6	.8	4.0	.6
Ego Resiliency ^{**}	.2	.3	.5	.2

a. male = 1, female = 2.

b. parent to adolescent speeches.

c. total parent to adolescent constraining divided by parent to adolescent talkativeness.

d. total parent to adolescent enabling divided by parent to adolescent talkativeness.

e. item sum score.

** $p < .01$. *** $p < .001$.

pooled to maximize variance on measures of interest. Characteristics by recruitment group are included in Table 1.

Procedures

Adolescent Phase

Participants and their parents completed an extensive assessment that included individual adolescent interviews, a family interaction task (source of parent-to-adolescent measures), pencil-and-paper measures (including the Washington University Sentence Completion Test [SCT] for ego development score; Loevinger et al., 1970), and a demographic questionnaire used to gather family structure and socioeconomic status information. Each year the assessment required three visits over a 2 month time period. The assessment in the initial year was conducted in a private room at the psychiatric facility (hospital cohort) or the high school (high school cohort), as appropriate. Assessments in subsequent years were completed in the project's laboratory space, private rooms at the psychiatric hospital or high school, and

other settings, when appropriate (e.g., other school or hotel facilities for participants who had moved from the area).

During the first session the adolescent completed the SCT and was interviewed by a staff member (psychiatrists, psychology graduate students, psychologists, or social workers) using a semistructured interview to inquire about aspects of the adolescent's family, school or hospital life, history and future aspirations (Hauser, 1991). During the second session, each participant completed a self-image Q-sort based on the individual interview (Hauser, Jacobson, Noam, & Powers, 1983). The third and final meeting included the adolescent and his or her parents. After parents completed the SCT, they and the adolescent participated an interaction procedure which will be described below. Adolescents and their families received honoraria for their extensive participation.

Young Adult Phase

As young adults, the same participants completed new semistructured interviews (e.g., Adult Attachment Interview [AAI]; Main & Goldwyn, 1994), oral questionnaires, and pencil-and-paper tasks (e.g., SCT; Loevinger et al., 1970). The assessment protocol required one visit approximately one-half day in length. Participants received \$120, in addition to travel and meal expenses, for their participation. In addition, each young adult nominated two friends, with whom they had a close relationship, to be informants (Kobak & Sceery, 1988). Those friends subsequently completed a Q-sort (Block, 1961) about the index participant. Whenever possible, the friend-informants traveled to the project laboratory to complete the sort. The friends who completed the Q-sort received travel expenses and a \$25 honorarium.

Measures

Adolescent and young adult data used in the following analyses were drawn from self-report and observer assessments. Measure means and standard deviations, by recruitment cohort, are included in Table 1.

Demographic Variables

Family socioeconomic status (SEI) was quantified with the Duncan Socioeconomic Index (Hauser & Featherman, 1977). Each parent's vocation was coded by general category using 1970 census occupation codes as guideline (professional = 75, manager = 57, sales = 49, clerical = 45, craftsman = 31, operative = 18, service = 17). The highest category in a family

(whether achieved by maternal or paternal figure) was used as the SEI for the family (range 17 through 75). Dummy variables represent cohort membership and gender (high school = 2 and hospital = 3; male = 1 and female = 2).

Parent Behaviors/Parenting Style

Two measures of parent behavior, each developed within this research program, were used to predict behavioral competence and ego resiliency. Differing sets of trained raters applied the Constraining and Enabling Coding System (CECS), a micro-coding system (rated from transcript; Hauser et al., 1992), and the Autonomy and Relatedness coding system (A-R), a molar-coding system (rated from transcript and audiotape review; Allen, Worrell, Borman, & Hauser, 1991) to the discussion generated by the family in a revealed differences task. As a micro-coding system, the CECS approach rates aspects of specific parent speeches (parent behaviors) theoretically and empirically associated with ego development. The A-R approach, a molar system created to assess family interactions conceptually relevant to attachment theory, generates indices of parenting style (for more elaborate discussion of the distinction between specific parenting behaviors and parenting style, see Darling and Steinberg, 1993).

To generate the parent-to-adolescent speeches, a revealed differences procedure was used (Strodtbeck, 1958). In application of this procedure, each family member was first presented with and asked to resolve a dilemma (Colby & Kohlberg, 1987). Then the family was gathered and interviewers presented specific sets of responses revealing clear disagreements among specific coalitions of family members (e.g., adolescent and mother versus father, mother and father versus adolescent). Each person was asked to defend his or her position and the adolescent and parents were instructed to reach, if possible, a family consensus. The revealed difference paradigm is considered an analogue of adolescent/parent attempts to negotiate controversial situations at home (a more extensive description of the procedure can be found in Hauser, 1991).

Constraining and enabling coding system. This micro-level system is based on the Steirlin (1974) observations and formulation that parent responses to the separating or individuating behavior of their offspring influence the development of those adolescents. The Stierlin model emphasizes negative sequelae of binding interactions—those through which parents discourage their adolescent's efforts to separate and individuate. Hauser and colleagues (1984) expanded the Stierlin model by conceptualizing: (a) types of binding or *constraining* behaviors; and (b) types of *enabling* behaviors—

which serve the opposite function of binding interactions by supporting adolescents' separation and individuation. (Although not used in current analyses, the Hauser expansion also includes variations in individual speech sequence—whether discourse complexity increases [progresses], decreases [regresses], or remains static [forecloses] for an individual member.) Parent constraining and enabling responses have been associated with adolescent ego development and other aspects of adjustment (e.g., Hauser et al., 1984; Hauser, 1991). Constraining refers to six aspects of speeches: (a) distracting, withholding, and judgmental (cognitive category) and (b) indifference, excessive gratifying, and devaluing (affective category). Enabling comprises six aspects of speeches: (a) explaining, focusing, problem solving, and curiosity (cognitive category); and (b) acceptance, and active understanding [empathy] (affective category). Each speech turn is coded for the presence of constraining and/or enabling. Up to one element in each category (e.g., affective or cognitive) of each dimension (e.g., constraining or enabling) is coded. Thus, by design, a speech unit may be coded for multiple elements and scores are not mutually exclusive. Responses are coded as 1 or 2, to reflect the intensity at which the specific element is present. Summary variables are computed to index each family member's cognitive enabling, affective enabling, cognitive constraining, and affective constraining behavior. Interrater reliability for constraining and enabling categories (affective and cognitive) ranges from .48 through .82 (κ) and percentage agreement ranges from 92% through 93% (Hauser et al., 1984).

Parent (mother plus father)-to-adolescent constraining and enabling scores were divided by number of parent-to-adolescent speech units. These summary variables were computed to capture the density of constraining and enabling; they were selected to index the tone of interaction and, by extension, of the parent/adolescent milieu.

Autonomy and relatedness coding system. The second set of family process dimensions are drawn from a molar-coding system (A-R) developed to assess the extent to which family members promote and obstruct autonomy and relatedness behaviors (Allen et al., 1991; Allen et al., 1994). The A-R system was developed to index behaviors relevant to attachment theory (e.g., parent behavior that supports individuation while providing access to a secure family base). The system examines the speech patterns of each family dyad (e.g., mother to adolescent, adolescent to mother, etc). Ten types of speech are coded and three summary scores are generated based on distribution rules: Summary scores subsume the intensity and frequency of behaviors. Summary scores are: (a) promoting autonomy-relatedness (subcodes: expressing and discussing reasons for disagreements, confidence in one's position, validation

of other's position, and attention to other's speeches); (b) inhibiting autonomy of the other person (over-personalizing disagreement, pressuring other to agree, recanting position to foreclose discussion); and (c) inhibiting relatedness (expressing hostility, interrupting or ignoring statements toward the other person). The measure is reliable (interrater reliability: .70 [inhibit autonomy], .82 [inhibit relatedness], .84 [exhibit autonomy-relatedness]) and has shown theoretically expected links with young adult attachment representations and adolescent self-esteem (Allen & Hauser, 1992; Allen et al., 1994).

The summary scale for parent-to-adolescent speeches promoting autonomy and relatedness was used for analyses to predict from adolescent era parenting to young adult competencies.

Individual Adolescent Dimensions

Ego development. Ego development, as defined previously here, refers to a specific sequential, stage-based view of personality development (Loevinger, 1976). The multifaceted construct is assessed through responses to a 36-item sentence completion test, for which there is considerable evidence of reliability and validity (Hauser, 1976, 1993; Loevinger, 1976, 1985; Loevinger et al., 1970). Trained coders, blind to participant characteristics (e.g., age; gender; recruitment site; year in study) scored each adolescent protocol. Individual scores were derived using the published manual (Loevinger et al.) and materials provided by Loevinger for those stems not included in the published manuals. Item sum scores were calculated by summing the sentence scores for each participant's 36 responses (Hauser, 1976). Inter-rater reliabilities ranged between .70 and .92 (intraclass correlations; Hauser et al., 1984). Ogive distribution rules were used to calculate stage scores for all protocols. In this sample, stage and item sum scores were related closely ($r = .90$ through $.96$; Hauser et al., 1984). Item sum scores were selected for analyses to maximize variance and provide a continuous measure.

Adolescent ego development item sum scores from the second year of the study were used to provide a stringent test of a mediational hypothesis. A mediational model purports that the effect of one variable, in this case parent speeches to adolescents, is realized through its effect on an intervening variable, in this case ego development. The 1 year time lag between measurement of parent behaviors and ego development and the 10 year lag between measurement of adolescent ego development and young adult competencies supports testing the directional hypotheses inherent in such mediational analyses.

Young Adult Competencies

Total education. Level of educational attainment was selected to index competence because attainment connotes adequacy (i.e., completion of a level of education, such as high school or its equivalent) rather than achievement (e.g., class rank, grade point average, standardized test scores, number of years of schooling). Scores ranged from 1 = *no greater than 10th grade*; 2 = *high school graduate or equivalent* (e.g., certificate of general educational attainment [GED]); 3 = *vocational education beyond high school, associate of arts degree or some college*; 4 = *college graduate*; through 5 = *graduate degree at master, doctorate, or professional level*.

Ego resiliency. Two friends, nominated by the participant, described him or her using a modification of the California Q-sort (Block, 1961; Kobak & Sceery, 1988). Items from the California Q-sort were reworded to maintain the meaning and yet be suitable for people with no training in psychology (e.g., Item 4: Is a talkative person. Item 15: Is playful and humorous in social situations. Item 99: Is dramatic, exaggerates feelings, behaves in attention-getting ways.) (Block, 1961). Sorters reviewed 100 cards and sorted them into three like-sized piles: one described the friend "the best" ($n = 33$), another described the friend "sometimes or not at all" ($n = 34$) and the final pile described the friend "the least" ($n = 33$). Each larger pile subsequently was resorted into three smaller piles, following the same directions for within each of three initial sorts. Each pair of sorts was composited. Ego resiliency was calculated as the correlation between the participant's composite sort and a prototype description of ego resiliency developed under the direction of Block and Block (1980). Ego resiliency scores have been associated with positive functioning and optimal development (Block & Block).

RESULTS

Overview

As the reader will recall, this newest set of analyses of these longitudinal data was designed to examine parent/adolescent behavior and adolescent personality development as unique and joint predictors of young adult competencies. Of interest was the question of whether adolescent personality development mediated the relation between adolescent era parenting and young adult competencies. More specifically, it was hypothesized that specific parent behaviors could facilitate adolescent ego development and pre-

dict educational attainment and ego resiliency over an 11 year period. Data analyses included three steps: correlational analyses, hierarchical multiple regressions (including exploratory tests for interaction effects; Cohen & Cohen, 1983), and tests for mediational role of ego development (Baron & Kenney, 1986).

Correlational Analyses

Table 2 displays zero order correlations among demographic, predictor, and outcome variables. Recruitment site, socioeconomic status, and Year 2 adolescent ego development were correlated significantly ($r = .43$ through $.49$). Each of these variables also showed significant relations with the dependent variables, educational attainment and ego resiliency ($r_s = .30$ through $.69$, all $p < .05$). Although gender did not correlate with family socioeconomic status or recruitment site, being female was associated significantly with parents' encouragement of autonomy and relatedness ($r = .24$, $p < .05$) and ego development ($r = .29$, $p < .05$).

The micro (CECS) and molar (A-R) coding systems were not significantly related. However, the CECS variables, density of constraining and density of enabling, were correlated moderately ($r = -.50$, $p < .001$). Encouragement of autonomy and relatedness was associated positively with competencies ($r = .29$ through $.43$, $p < .05$), as hypothesized. Density of constraining was related to educational attainment ($r = .33$, $p < .01$), but not to ego resiliency ($r = .05$, n.s.). Density of enabling was not significantly related to educational attainment nor ego resiliency. Year 2 (approximately age 15 years) ego development was associated positively with young adult educational attainment ($r = .45$, $p < .01$) and ego resiliency ($r = .30$, $p < .05$), and the competencies were correlated positively as well ($r = .31$, $p < .05$).

Hierarchical Multiple Regression Analyses

Hierarchical multiple regression analyses were conducted across the sample without controlling for recruitment site (high school or hospital) or parents' sociodemographic status. An episode of psychiatric hospitalization likely reflects and subsumes differences in parents' ability to manage adolescent behaviors, access to services and resources (insurance and finances), and key aspects of individual adolescent functioning (e.g., symptoms). Parental socioeconomic status, although a commonly used index of family rearing milieu, provides no information about the parental behaviors that underlie relations among parent occupational status, parent education, parent income, and adolescent competencies. Consequently, controlling for recruitment site

TABLE 2: Zero Order Correlations Among Variables^a

	1	2	3	4	5	6	7	8	9	10
Demographic Variables										
1. Socioeconomic Status										
2. Site ^b	-.46***									
3. Gender ^c	.10	-.01								
Parent Behaviors										
4. Talkativeness	-.03	-.01	.16							
5. Encourage A/R	.38***	-.41***	.24*	.34**						
6. Density Constraining	.06	-.19	-.08	.27*	.09					
7. Density Enabling	.06	.12	.09	-.12	.11	-.50***				
Young Adult Functioning										
8. Ego Development Year 2 ^d	.43***	-.49***	.29*	-.01	.41***	-.20	-.05			
Dependent Variables										
9. Educational Attainment	.53**	-.69***	.21	.12	.43***	.33**	-.11	.45**		
10. Ego Resiliency	.39***	-.50***	-.01	-.01	.29*	.05	-.15	.30*	.31*	

a. Socioeconomic Status ($n = 78$); Encouragement of Autonomy and Relatedness code ($n = 77$); Constraining and Enabling codes ($n = 79$); Ego Development ($n = 69$); Educational Attainment ($n = 75$); Ego Resiliency ($n = 70$).

b. High School = 2; hospital = 3.

c. Male = 1; female = 2.

d. Approximately age 15.

* $p < .05$. ** $p < .01$. *** $p < .001$ (2 tailed significance test).

or parental socioeconomic status would defeat the purpose of these new analyses because this likely would mask mechanisms (parenting, adolescent ego development) that predict competencies (for a different approach, see Bell et al., 1996).

Separate hierarchical regressions were completed for each set of parenting variables to maintain independence of measures (recall that each coding system was applied by separate coders, blind to all other data, to observations generated by the same interaction task). To control for possible influence of wide variation in parent-to-adolescent speech units (ranging from 6 through 167), all analyses included the total number of those speeches as a first step to a control for talkativeness. Parenting variables were added as the second step. This analytic strategy is concordant with the view that individual differences in personality development are proximal influences of young adult functioning and dictated inclusion of ego development item sum scores as the third step in the regression analyses. To examine the possibility that adolescent individual differences would be predicted by, and mediate the influence of parenting, Year 2 ego development scores were used (Baron & Kenney, 1984). To examine relevant moderator influences, appropriate interaction terms were included as a final step. Results are presented by competence area.

Educational Attainment

Table 3 presents results of the hierarchical multiple regressions for educational attainment in the young adult years. As the figures in the first two columns illustrate for the regression equation using the A-R coding system, parent talkativeness was not associated with educational attainment. Parental encouragement of adolescent autonomy and relatedness was related positively to educational attainment (R^2 change = .16; $F[2, 62] = 6.07, p < .01$). Addition of Year 2 ego development significantly improved prediction of education, accounting for an additional 11% of the variance. The combination of ego development and autonomy/relatedness accounted for 27% of the variance in educational attainment. Interaction terms (e.g., Speech Units \times A-R, A-R \times Ego Development, Speech Units \times Ego Development) were constructed with centered variables (the variable mean was subtracted from each value to create a deviation score; Aiken & West, 1993). Interaction terms did not account for significant variance. Beta weights and significance levels are reported for the final three step regression equation.

Columns 3 and 4 of Table 3 present details of analyses with the constraining and enabling system (CECS). Again, parent talkativeness did not contribute to prediction of educational attainment. Density of constraining behavior

TABLE 3: Hierarchical Linear Regression Predicting Young Adult Competence From Parenting And Young Adult Ego Development

Predictor	Dependent Variables Educational Attainment			
	Beta ^a	ΔR^2	Beta ^a	ΔR^2
1. Parent/Adolescent Speech Units	.00	.01	.04	.01
2. Parent Behaviors				
Encourage A-R	.28*	.16***		
Parent Behaviors				
Density Enabling			-.01	
Density Constraining			.28*	.12*
3. Adolescent Qualities				
Ego Development	.36**	.11**	.40***	.15***
4. Interaction Terms		.00		.00
R ² Total		.27*** ^b		.28*** ^c

NOTE: The significance of the R^2 increment is indicated for each step (F test). If a set of variables produced a significant change in R^2 the contribution made by each component variable was investigated.

a. Beta weights are those from the simultaneous regression equation for all variables in the final equation.

b. $F(3, 61) = 7.63, p < .001$.

c. $F(4, 62) = 6.15, p < .001$.

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

(sum of distracting, withholding, judgmental, indifference, and excessive gratifying divided by total parent-to-adolescent speeches) predicted higher level of education completed. Enabling behaviors were not associated significantly with educational attainment. As hypothesized, adolescent ego development significantly increased the amount of variance explained (R^2 change = .15, $p < .001$). In combination, the parent constraining and ego development accounted for 28% of the variance ($F[4, 62] = 6.15, p < .001$). Centered interaction for Parenting \times Ego Development, Speech Units \times Parenting, Speech Units \times Ego Development did not improve significantly prediction of educational attainment.

Ego Resiliency

Results of regressions predicting ego resiliency are included on Table 4. When entered as the first step, talkativeness was not associated with ego resiliency (column 1). When entered as the second step, parent encouragement of autonomy and relatedness was not associated with ego resiliency (column 2). Addition of ego development did not improve model fit. Ego development interacted neither with parent talkativeness nor parenting be-

TABLE 4: Hierarchical Linear Regression Predicting Young Ego Resiliency From Parenting And Young Adult Ego Development

Predictor	Dependent Variables Ego Resiliency			
	Beta ^a	ΔR^2	Beta ^a	R ²
1. Parent/Adolescent Speech Units	-.22	.07	.00	.00
2. Parent Behaviors				
Encourage A/R	.15	.04		
Parent Behaviors				
Density Enabling			-.27	
Density Constraining			-.03	
3. Adolescent Qualities				
Ego Development	.17	.06	.29*	.08*
4. Interaction Terms				
A/R x Speech #	.38**	.12**		
CECS			.00	.00
R ² Total		.22** ^b		.15 ^{ac}

NOTE: The significance of the R^2 increment is indicated for each step (F test). If a set of variables produced a significant change in R^2 , the contribution made by each component variable was investigated.

a. Beta weights are those from the simultaneous regression equation for all variables in the final equation.

b. $F(4, 55) = 3.89, p < .01$.

c. $F(4, 57) = 2.60, p < .05$.

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

havior. However, parent encouragement of autonomy and relatedness interacted with parent talkativeness (R^2 change = .12, overall $F[4, 55] = 3.89, p < .001$). Beta weights reported in column 1 of Table 4 are those from the equation that included this interaction. Twenty-two percent of the total variance was explained by the combination of talkativeness, A-R, ego development, and this interaction term.

Solution of the regression equation indicated a threshold effect: above approximately 48 parent-to-adolescent speech units, higher scores of autonomy and relatedness behavior were associated with greater ego resiliency (the hypothesized relation); below 48 parent-to-adolescent speech units the relation was reversed and higher A-R scores were associated with decreases in ego resiliency (Figure 1). Scheffé post hoc comparisons pinpointed the significant group differences and supported the direction of effects: The ego resiliency of young adults with talkative parents who provided little encouragement of autonomy and relatedness was lower than the ego resiliency of young adults with either talkative parents who encouraged autonomy and relatedness or less talkative parents who provided little encouragement of autonomy and relatedness ($p < .05$).

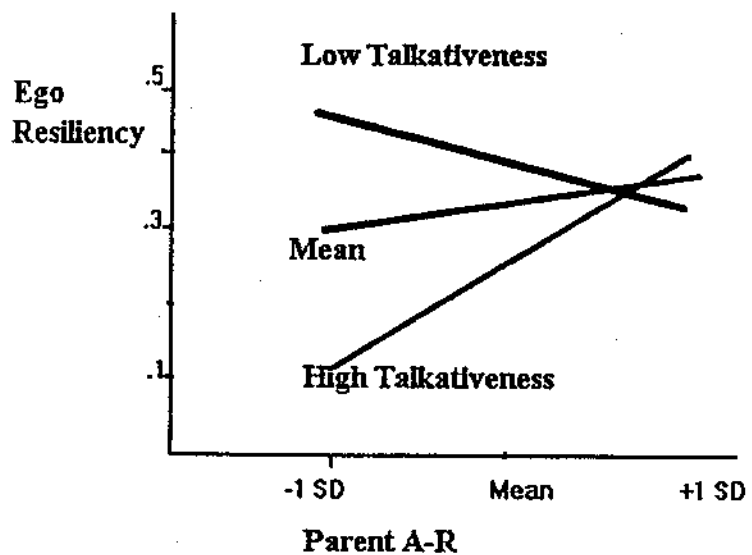


Figure 1: Interaction between parent talkativeness and adolescent era encouragement of autonomy and relatedness (A-R) as predictors of young adult ego resiliency.

In analyses with CECS system (Table 4, columns 3 and 4), neither parent talkativeness nor the combination of talkativeness and parent behavior accounted for a significant amount of the variance in ego resiliency. Addition of ego development significantly improved the model, accounting for 8% of the variance in ego resiliency. No interaction terms contributed to model fit. A total of 15% of the variance was explained by the combination of variables ($F[4, 57] = 2.60, p < .05$).

Mediation Effects

Because of research linking parenting both to ego development and competencies, these analyses were designed to focus on whether ego development mediates relations between parenting behaviors and young adult competencies. Tests for mediational (intervening variable) effects followed the guidelines offered by Baron and Kenney (1986). To test for mediational effects, the intervening variable (in this instance, ego development) was regressed on each parenting variable. The dependent variable (educational attainment or ego resiliency) was first regressed on the parenting variables and then on both the intervening variable and the independent variable. If the

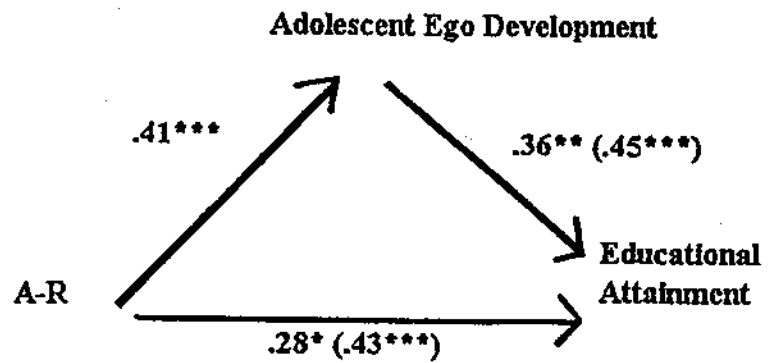


Figure 2: Mediation Model.

NOTE: Educational attainment at age 25 years as predicted by parent encouragement of autonomy and relatedness (A-R) and adolescent ego development (numbers in parentheses refer to beta weight of single predictor variable).
 $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

beta weight for the direct path from the parenting variable to the dependent variable is smaller when both parenting and ego development are in the regression than when ego development is not included, then a mediational hypothesis is supported.

Results supported the hypothesis that the effect of parent encouragement of autonomy and relatedness was mediated through Year 2 adolescent ego development for both educational attainment and ego resiliency. When ego development was included in the prediction of educational attainment, the standardized path coefficient for autonomy/relatedness dropped from .43 ($p < .001$) to .28 ($p < .05$) (Figure 2). Ego development also mediated the influence of parent A-R on the prediction of ego resiliency. The beta weight for A-R dropped from .29 ($p < .05$) to .08 (p n.s.) with the inclusion of ego development (Figure 3).

DISCUSSION

This study's overarching goal was to identify and understand mechanisms that underlie and facilitate specific and general competencies. The focus was on adolescent era parent behaviors theoretically associated with the development of adolescent autonomy and adolescent ego development as unique and joint predictors of young adult competencies because of the belief that psychological autonomy facilitates competence in numerous arenas. The

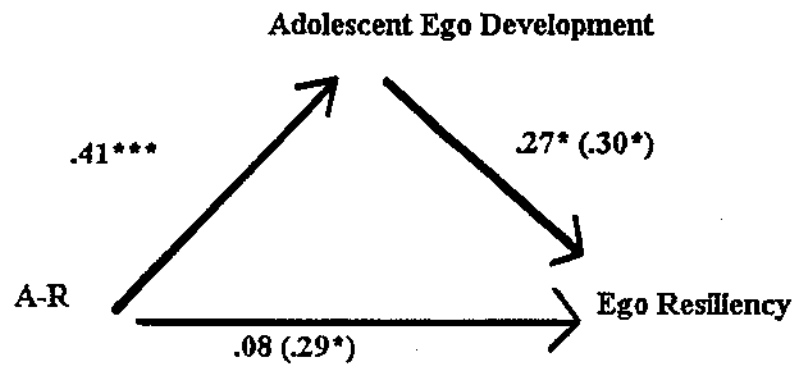


Figure 3: Mediation Model.

NOTE: Ego resiliency at age 25 years as predicted by parent encouragement of autonomy and relatedness (A-R) and adolescent ego development (numbers in parentheses refer to beta weight of single predictor variable).

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

analyses were designed to examine whether, and how, adolescent era parent behaviors would predict both adolescent ego development and young adult competencies (educational attainment and ego resiliency) over time. The 11 years between measurement of independent and dependent variables provided a stringent test of relations over time.

These analyses revealed that broad and narrow aspects of adolescent-era parent behavior predict subsequent young adult educational attainment and ego resiliency, although not always as hypothesized. In correlational analyses, a dimension from the molar coding system (Encouragement of Autonomy and Relatedness) was associated consistently with competencies. In hierarchical multiple regressions, encouragement of autonomy and relatedness significantly predicted educational attainment and, in a complicated moderator relation, ego resiliency. These linkages were as hypothesized: Higher levels of parent encouragement of autonomy and relatedness style were associated with competencies. Talkativeness and encouragement of autonomy relatedness behaviors interacted in the prediction of ego resiliency: Among talkative parents, higher levels of encouragement of autonomy and relatedness were associated with higher levels of ego resiliency; among relatively non-talkative parents, lower levels, rather than higher levels, of autonomy and relatedness were associated with higher levels of ego resiliency.

One interpretation of this moderator (interaction) effect is that parents' lack of participation undermines the positive content of any verbal exchange;

perhaps lower levels of parental verbal participation impede an adolescent's opportunity to model behavior and to develop flexibility and skills to manage changing circumstances. Perhaps, too, parents who speak less are those who practice a more permissive style (Baumrind, 1971) of parenting, encouraging their adolescent to make decisions and neither actively encourage nor discourage their adolescent's bids for independence. In other words, results indicate that higher levels of A-R among parents who speak little is experienced differently than higher A-R among more talkative parents.

Relations between the micro coding system (Constraining and Enabling) and competencies were also hypothesized. Parent constraining behavior was expected to predict diminished competence. However, parent constraining predicted greater educational attainment. These results were surprising. Parent constraining speeches (e.g., distracting, withholding, judgmental, devaluing) may prepare adolescents to succeed in a structured, demanding, and competitive school setting or may spur adolescents to seek success in another realm, for the reward inherent in such success, as another attempt to garner acceptance and support from parents, or for the satisfaction of proving their parents wrong.

Analyses revealed that adolescent ego development was a predictor of young adult educational attainment and ego resiliency, both directly and as a conduit (mediator) of parenting behavior. Its role as a mediator between parental behavior and educational attainment and ego resiliency indicates that adolescent ego development may be one mechanism through which parenting predicts subsequent competencies. The significance of ego development, as an index of cognitive complexity and of the ability to appreciate and assess multiple views, again indicates the importance of psychological autonomy.

These results support the Garmezy (1985) belief that parenting/family processes and individual development are two potent predictors of individual competence and, more important, begin to reveal delineate how parent behavior facilitates offspring competencies. A body of literature indicates that parenting fosters ego development through example and teaching. These analyses revealed that the influence of parenting on young adult functioning is mediated through its influence on adolescent ego development. This evidence, in combination with previous work (e.g., Garmezy, 1985; Masten et al., 1988), indicate the importance of studying parenting behavior and style with a careful eye on individual differences in the child or adolescent's personality and developmental course. On the other hand, the exploratory analyses indicated adolescent ego development and adolescent era parent behaviors do not interact to predict competencies. Lack of such moderator effects supports the importance of positive aspects of parenting to all adolescents, regardless of developmental level.

Interpretation of findings and generalizability may be limited by the sample's characteristics, size, and the analytic strategy. The sample was selected to maximize variance in ego development and is neither random nor population-based. For example, families were virtually all Caucasian, middle to upper-middle socioeconomic status, and residing in urban and suburban locations. In addition, the data set lacked information to control for adolescent educational attainment (variance was minimal due to state requirements that adolescents be enrolled in school), ego resiliency, and concurrent symptomatology. As a result, it was impossible to control for the stability of these constructs over time. These analyses, by deliberate design, examined linkages among parent behavior, adolescent personality, and young adult competencies without controlling for recruitment site and family sociodemographic status. This strategy suited this study's purpose—to better understand proximate parent and adolescent predictors of young adult competencies that may be masked by more global and distal predictors such as socio-demographic status and history of hospitalization. It remains important, however, to understand and acknowledge the strength of relations between global predictors and young adult competencies (e.g., Bell et al., 1996).

Important steps to enhancing understanding of mechanisms and processes that predict competencies are (a) to replicate findings in larger, representative samples; (b) to study the separate contributions of maternal and paternal speeches; (c) to study parenting and ego development as predictors in single-parent families; (d) to study parenting and ego development as predictors of problem behaviors; and (e) to identify those aspects of ego-development that may predict multiple competencies. Intriguing and significant questions to pursue include: Does ego development show a main and mediational role in the prediction of competencies in other samples? Are molar indices of parenting behaviors representing parenting style stronger predictors of competencies than are indices of specific parent behaviors? Do aspects of adolescent ego development contribute to subsequent young adult competence, such as problem solving abilities, perspective taking, analytic skills, or global intelligence?

Taken together, these analyses indicate that parental support of adolescent autonomy has long term and positive consequences, consequences that are realized, at least in part, through adolescent ego development. Although much work remains to be done, these results point to the importance of studying (a) the impact of parenting behaviors in the context of individual differences, such as ego development and intelligence, and (b) the impact of parenting style in the context of parents' talkativeness.

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