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PSYCHOSOCIAL DEVELOPMENT AND LIFE EVENTS IN ADULTHOOD:
A 22-YEAR SEQUENTIAL STUDY

A Thesis Presented

by

KAREN-JO WILLS

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University of Massachusetts in partial fulfillment
of the requirements for the degree of

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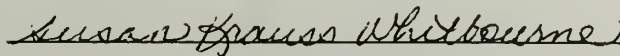
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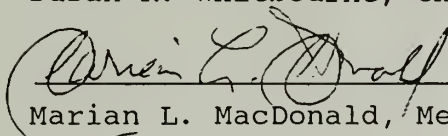
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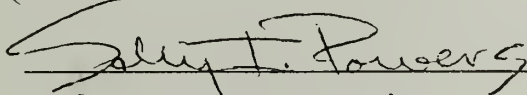
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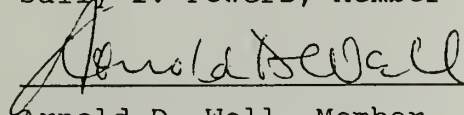
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CHAPTER 1

INTRODUCTION

The potential for change in personality during adulthood has been the focus of an ongoing debate in developmental research. Does personality continue to develop after adolescence, or is character so firmly set by early adulthood that it is resistant to change? Traditional psychodynamic theories presume that personality is formed during infancy and childhood and remains relatively stable throughout the remainder of the life span (e.g., Freud, 1923/1962). In contrast, several theorists, some working within a psychodynamic perspective, have proposed models of personality development which emphasize universal sequences of stages or processes through which personality develops during adulthood, prompted by inner maturational drives (e.g., Buhler, 1935; Gould, 1978; Jung, 1933; Levinson, 1978). Others have pointed out that individuals must adapt to shifting social roles throughout adulthood; changing their personality in the process (Clausen, 1972; Gurin & Brim, 1984). Similarly, psychologists who emphasize the importance of situational determinants of behavior (e.g., Mischel, 1973) have maintained that behavior patterns change in response to the changing environment and that personality is therefore continually adapting to the experiences of adult life.

Empirical research in the area of adult personality development focuses almost exclusively on age-related personality changes in adulthood. Change has typically been estimated by comparing individuals of different ages on measures of various personality traits, or by following a group of people over a period of years and estimating mean level changes in the group and comparing the relative ordering of individuals on particular traits over time.

Overall, the evidence has been interpreted as supporting the view that personality is relatively stable and enduring after adolescence, impervious to the life experiences that occur during the adult years (Costa & McCrae, 1980). Evidence of age-related personality changes in adulthood from either cross-sectional or longitudinal studies of personality is surprisingly sparse. In a comprehensive review of the research on adult personality development, McCrae and Costa (1984) concluded that "no matter how you view it, the only consistent evidence points to stability" (p. 28). Several more recent analyses of longitudinal data on personality traits provide additional evidence that personality is relatively stable in adulthood (e.g., Conley, 1985; Costa & McCrae, 1988).

However, while there is substantial support for continuity of personality in adulthood, there is also some evidence of change. The results of a few studies have shown that individuals exhibit change as well as stability in

various personality dimensions during adulthood (e.g., Haan, Millsap, & Hartka, 1986; Helson & Moane, 1987; Stevens & Truss, 1985), and that certain individuals are more likely to exhibit change in personal characteristics than others (Block, 1971; Block, 1981). According to one interpretation of the literature on human development:

Humans have a capacity for change across the entire life span...Many individuals retain a great capacity for change and the consequences of the events of early childhood are continually transformed by later experiences, making the course of human development more open than many have believed (Brim & Kagan, 1980, p.1).

A number of researchers have criticized the existing research on adult development for its generally atheoretical basis. Several authors have noted that most of the longitudinal studies have not been guided by a developmental theory of personality (Moss & Susman, 1980; Ryff, 1984). Furthermore, it has been pointed out that the personality measures typically used in these studies were designed to assess stable traits, and thus may not have been particularly sensitive to developmental processes (Lerner & Lerner, 1983; Whitbourne & Waterman, 1979). According to Moss and Susman (1980), "It is not possible to study the ontogenesis of personality without using the guiding framework of some theory of personality." (p. 538).

Another major criticism of the research on personality development is its emphasis on personality change as a function of age and its neglect of the situations within

which personality is expressed. Several researchers have suggested that investigators stop searching for age-related changes in personality, and begin to study personality development within the context of life events (e.g., Caspi, 1987; Neugarten, 1977). Neugarten maintains that "age itself is an empty variable, for it is not merely the passage of time, but the various biological and social events that occur with the passage of time that have relevance for personality change" (p. 633).

This view is suggested by the "life span" perspective of human development, which has become increasingly popular among personality theorists (Featherman, 1983). Life span theorists emphasize the power of life experiences, particularly the changes in roles that individuals encounter throughout the life span (e.g., new jobs, marriage, parenthood, retirement, and divorce) to alter personality (Baltes, 1979; Neugarten & Datan, 1973). In general, the life span perspective suggests that there is a reciprocal relationship between the person and the social context throughout the life course; personality both continually affects and is affected by the sociocultural environment (Lerner & Lerner, 1983).

In keeping with the widespread acceptance of the life span perspective, researchers in the adult development literature are beginning to identify reciprocal relationships between personality and life experiences. For

example, with data from a longitudinal study of employed men spanning 10 years, Kohn and Schooler (1983) found evidence to indicate that there are reciprocal causal relationships between occupational conditions and psychological functioning. Similarly, results from a longitudinal study of self-concept and life experiences in a variety of realms such as occupation and family suggest that the self-concept both affects and is affected by life experiences during adulthood (Mortimer, Finch, & Kumka, 1982). In addition, with data from a 22-year longitudinal study of women college graduates, Helson, Mitchell, and Moane (1984) found evidence to support the hypothesis that personality traits (measured by the California Personality Inventory) influence the subsequent timing of and commitment to life events in the realms of family and career, while these experiences, in turn, partially determine later changes in personality.

The present study was an investigation of such reciprocal relationships using a measure of personality rooted in Erikson's psychosocial life span developmental theory of personality. Relationships among psychosocial development and ongoing life experiences in the areas of education, occupation, and family were explored in order to examine the reciprocal influence of personality during the adult years and of the life events that occur over the same time. The model underlying this investigation predicted change in personality as an interaction between the

individual's life experiences and behavioral tendencies as expressed in work and family situations. The data were obtained from a sequential study of college graduates over a 22-year period, part of a longer term follow-up of college students first tested in 1966. In contrast to the studies cited above, this investigation analyzed data from both men and women and included two cohorts, separated by a decade, thus allowing an examination of gender differences in psychosocial development as well as providing an opportunity to replicate the findings across two different cohorts.

This research was guided by Erikson's model of psychosocial development (1963; 1968), which is perhaps the most influential theory of developmental processes throughout the life span. This theory was considered particularly appropriate for the study because it emphasizes the interaction of inner maturational processes with environmental conditions. Further, Erikson's theory was used to identify dimensions of personality on which change would be expected to occur, and a measure constructed to assess these dimensions was used in the longitudinal study.

According to Erikson's (1963; 1968) model, development is characterized by eight psychosocial crises or critical steps which occur throughout the life span. The crises represent turning points or stages of development during which certain conflicts become particularly important for the individual. The conflicts result from the interaction

of inner biological, psychological, and social forces. The underlying assumptions of Erikson's model are:

(1) that the human personality in principle develops according to steps predetermined in the growing person's readiness to be driven toward, to be aware of, and to interact with, a widening social radius; and (2) that society, in principle, tends to be so constituted as to meet and invite this succession of potentialities for interaction...(1963, p. 270).

The resolutions of the crises are seen as having consequences for the future development of personality, the individual's ability to adapt to internal and external demands, and the individual's self-evaluation. There is the potential for a new psychosocial "strength" or quality to evolve out of each new crisis resolution. The eight psychosocial stages are 1) Basic Trust versus Basic Mistrust; 2) Autonomy versus Shame and Doubt; 3) Initiative versus Guilt; 4) Industry versus Inferiority; 5) Identity versus Identity Diffusion; 6) Intimacy versus Isolation; 7) Generativity versus Stagnation; and 8) Ego Integrity versus Despair.

Each of these issues becomes important at a particular period during the life cycle; for example, the issue of identity versus role confusion typically becomes critical during adolescence. However, according to Erikson, there may be considerable individual variability in the age at which a particular stage is reached; thus, the stages are only loosely tied to chronological age. Moreover, Erikson emphasized that these stages are never completely "achieved"

once and for all. Instead, the crises are continually re-resolved, and the same issue is also present in preceding and later stages.

Another important feature of the model is that it is "epigenetic," that is, the stages evolve through a process such that a resolution of the crisis at any one stage has an influence on all subsequent stages. According to Erikson, in order to resolve successfully the conflict at one stage the individual must first have resolved the issues of the preceding stages.

Despite the wide acceptance of Erikson's theory, empirical research on the stages has been somewhat limited in scope. Most studies of Erikson's theory have focused on adolescence and early adulthood and have been conducted on college undergraduates (e.g., Constantinople, 1969; Waterman & Goldman, 1976), although a few have included middle aged or elderly people (e.g., Kahn, Csikszentmihalyi, & Getzels, 1985; Tesch, 1985; Walaskay, Whitbourne, & Nehrke, 1983-84). Moreover, while the findings have been interpreted as providing support for Erikson's model, most researchers have examined psychosocial development as a function of age (e.g., Whitbourne & Waterman, 1979). Few have addressed the issue of development within the context of life events in the social environment.

For the present study, the eight psychosocial stages were defined as personality dimensions or behavioral

tendencies that form the basis for the individual's interactions with the environment. The emphasis was on stages four through seven, as these stages were judged to be most directly relevant to the life experiences of the current sample. Stage 4, Industry versus Inferiority, which is typically considered a childhood issue, was seen as relevant to our adult sample because it involves the development of a sense of competence and productivity, an eagerness to work and to acquire skills and self-discipline that might eventually be expressed in an occupation. The lack of these qualities can lead to a sense of inadequacy or inferiority. Stage 5, Identity versus Identity Diffusion, refers to the ability to integrate earlier roles, identifications, and skills, and the development of a sense of inner sameness and continuity which can be expressed in the opportunities offered in social roles, particularly in a career. The negative outcome on this dimension is identity diffusion, which is frequently expressed in the inability to settle on a career. Stage 6, Intimacy versus Isolation, refers to the capacity to establish and maintain a strong commitment to another person in a close relationship that is mutually satisfying. The avoidance of intimacy can lead to a sense of isolation and self-absorption. For Stage 7, Generativity versus Stagnation, the critical task is the development of the capacity to care for younger persons, a concern for guiding and teaching the next generation, and a

sense of responsibility to those younger in age. Generativity can also include a sense of contributing to future society through creative accomplishments. The failure to develop concern for younger generations can lead to a sense of stagnation and "personal impoverishment" (Erikson, 1963, p. 267).

Each of these psychosocial dimensions was expected to have reciprocal relationships with particular life events. It was hypothesized that personality would have an important influence on the life course, since it predisposes people to select their environments and initiate experiences within the realm of controllable events (Costa & McCrae, 1980). At the same time, it was hypothesized that life experiences would affect psychosocial dimensions and lead to further growth, stability, or regression on these dimensions.

The model underlying this investigation (see Figure 1, p.11) presumed that the effect of personality on life events would occur gradually over time. The rationale for this assumption is that it will take time for the individual to modify the environmental situation to suit his or her personality. Current personality will not bring about immediate changes in the current situation, but it will have an important effect on the further course of life events (Kohn & Schooler, 1983). In contrast, life experiences will have both an immediate and a gradual impact on personality. Features of the current situation will have an immediate

influence on the individual's current beliefs, self-conceptions, expectations, and values. Life events will also have a more gradual effect on personality over time as the individual adapts to his or her experiences. This general model is supported by findings from Kohn and Schooler's longitudinal investigation of the reciprocal causal relationships between personality and occupational conditions.

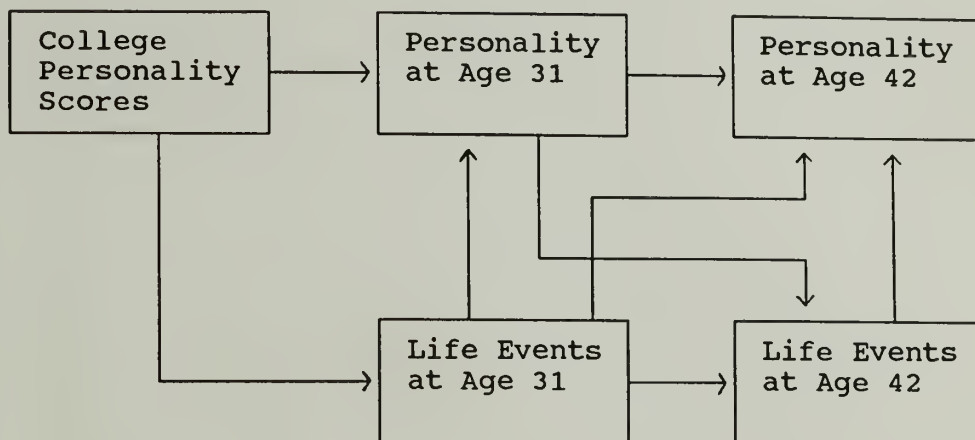


Figure 1. Reciprocal Relationships between Personality and Life Events Variables

Within this general model, several specific hypotheses were examined. First, it was expected that individuals' sense of industry would both affect and be affected by their educational and occupational attainment, with a strong sense

of industry being associated with high achievement, and inferiority with low achievement. A similar relationship was hypothesized for individuals' sense of identity and the continuity they experience in their occupational histories. A strong sense of identity was hypothesized to lead to a relatively continuous career path, which, in turn, would foster an inner sense of continuity. Third, it was hypothesized that individuals' sense of intimacy would both influence and be influenced by their success in establishing and maintaining intimate relationships, with a sense of intimacy being positively related to a stable, committed relationship. Fourth, individuals' sense of generativity was hypothesized to both affect and reflect whether or not they were parents. It was expected that a high level of generativity would increase the likelihood of having children, while the experience of being a parent would contribute to the development of a sense of generativity. Additional relationships were expected between generativity and marital stability as, in the population from which the present sample was drawn, marriage is almost always a precursor to having children. Thus, it was hypothesized that a strong sense of generativity would lead to marriage as part of the process of starting a family, while a stable marital relationship would promote a sense of generativity.

Both research findings and theory suggest that there may be gender differences in relationships between

personality and life experiences. For instance, findings from a longitudinal study of females who graduated from a large Midwestern University in 1967 suggest that women who are categorized as high on an index of "work involvement," (which includes ratings of educational and occupational attainment) are more likely to be single, divorced or separated, and less likely to have children than women classified as moderate or low on the index (Ruggiero & Weston, 1988). This appears to contradict Erikson's theory, which suggests that there would be positive relationships between educational and occupational attainment, relationship stability, and number of children.

Moreover, several theorists have criticized Erikson's developmental model regarding its relevance to women, asserting that it is based on male experience and is less applicable to females (e.g., Gilligan, 1979). These critics have argued that the theory overemphasizes the importance of autonomy and achievement at the expense of attachment and intimacy. Literature on the psychology of women stresses the greater interpersonal orientation of women and their more "relational" nature (e.g., Chodorow, 1978). This suggests that women would be more likely than men to develop and express a sense of identity within the context of their relationships. Furthermore, because western society has traditionally encouraged women to define themselves in terms of their roles in the family rather than the workplace, it

is hypothesized that women's identities will be related to their roles and commitments in the family domain, as well as to their occupational commitments. Results from one study of gender differences in psychosocial development (Kahn et al., 1985) support this hypothesis; the findings indicate that women's sense of identity in college predicts the stability of their marital relationships during the subsequent 18 years. Therefore, in the present study, it was expected that for women, sense of identity would be reciprocally related to success in establishing and maintaining intimate relationships as well as to the experience of being a parent.

CHAPTER 2

METHOD

Sample

The data were obtained from University of Rochester alumni who were first studied when they were undergraduates and were subsequently followed up at 11-year intervals. Participants were grouped into two cohorts based on the time of their initial testing. Participants who were first tested in the years 1966-1968 comprise Cohort 1. Cohort 2 consists of those who were first tested in 1976-1977. Data from another cohort of college students (Cohort 3) were collected in 1988-1989, however these data were not included in the present study.

The study was initiated in 1966 by Constantinople (1969) with the testing of undergraduates from the classes of 1966, 1967, and 1968 (Cohort 1). Questionnaires were sent to students previously recruited from 22 classes in nine departments of the College of Arts and Science and 2 classes in the College of Education. Data were obtained from 219 males and 192 females, all full-time students.

Whitbourne and Waterman followed up these participants in the fall of 1976 and early spring of 1977. At the same time, they recruited a new sample of undergraduates (Cohort 2), from the classes of 1977, 1978, 1979, and 1980, for participation in the study. In the fall of 1988, both cohorts were tested again.

In the 1976-1977 testing (Whitbourne & Waterman, 1979), data from Cohort 1 were available for 166 males and 161 females. Of these, 27 could not be located. Of the 300 remaining participants, 155 (52%) returned questionnaires. Eight of these had incomplete data from 1966. Comparisons of attrition rate by class uncovered significant differences, with the class of 1967 having the least attrition (39%) compared with the classes of 1966 (56%) and 1968 (60%), $\chi^2 (2) = 6.52, p < .05$. Within the three classes, comparisons of attrition rate by sex revealed no significant differences. There were no significant differences on the 1966 IPD scores between those who were retested in 1976-7 and those who were not.

During 1976-1977, data were also obtained from 299 current University of Rochester undergraduates (Cohort 2). Of these, 75 were members of the class of 1980, 88 were from the class of 1979, 71 from the class of 1978, and 65 from the class of 1977 (Whitbourne & Waterman, 1979).

In the 1988 testing, the researchers were unable to trace 30 (19%) of the 155 subjects in Cohort 1 who were retested in 1976-7. Questionnaires were returned by 99 (79%) of the 125 who were located. Because of difficulties in obtaining current addresses of Cohort 2 (see Procedure section below), this group had a much larger attrition rate. Of the 299 respondents in Cohort 2 who were tested in 1976-7, 114 (38%) could not be located. Of the remaining 185, 83

(45%) returned the questionnaires (Whitbourne, Zuschlag, Elliot, & Waterman, submitted).

Of the 99 respondents from Cohort 1 who were tested in 1988, 41 (41%) were members of the class of 1968, 27 (27%) from the class of 1967, and 31 (31%) from the class of 1966. Of the 83 members of Cohort 2 who responded to questionnaires in 1988, 14 (17%) were from the class of 1980, 22 (27%) from the class of 1979, 27 (33%) from the class of 1978, and 20 (24%) from the class of 1977. There was no difference within either cohort in attrition rate by college class. For attrition rate by gender, however, there were differences. In Cohort 2, men were more likely to have dropped from the sample by not returning the questionnaires sent to them. For both cohorts, women were more likely to have been lost from the sample because they could not be located, $\chi^2 (2) = 17.67$, $p < .001$ for Cohort 1, $\chi^2 (2) = 19.44$, $p < .001$ for Cohort 2.

When 1976-77 scores on the Inventory of Psychosocial Development of those who were followed in 1988 were compared with scores of those who dropped from the sample, no multivariate main effect of attrition status was found, nor were interactions between attrition status and the other independent variables of gender and cohort found.

At the time of the initial study, the University of Rochester students generally came from middle- and upper-middle-class families who resided in New York State. Eleven

years later, 81% of Cohort 1 were in Social Classes I (50%) or II (31%) of Hollingshead's two-factor index of socioeconomic status (based on the social class of the head of household) (Whitbourne & Waterman, 1979). By 1988, nearly all members of Cohort 1 were in Social Classes I (46.4%) or II (49.5%).

In 1988 nearly half of the members of Cohort 2 (48.5%) were in Social Class I and 27.3% were in Social Class II, with another 18.2% in Social Class III and the remaining 6.1% in Social Class IV. Thus, the social class of members of Cohort 2 at age 31 was similar to that of Cohort 1 members at the same age. Comparisons of attrition rate by the socioeconomic status of the parents of members of Cohort 2 when they were in college revealed no significant differences.

At the time of the 1988 testing, subjects in Cohort 1 ranged in age from 40 to 44 ($\bar{M} = 42.64$, $SD = .95$). Men in this cohort had significantly higher occupational prestige ($\bar{M} = 7.53$) than did women ($\bar{M} = 6.16$), $t(98) = 3.77$, $p < .001$; with 61% of the men and only 16% of the women in occupations at the highest professional and managerial levels. Of the women, 13% were full-time homemakers. Men also had significantly higher educational status, $t(98) = 4.70$, $p < .001$, ($\bar{M}s = 3.47$ and 2.58 , respectively). Of the men, 63% had obtained doctoral or professional degrees, whereas 13% of the women had obtained these degrees.

Seventy-five percent of the members of Cohort 1 were married, and 74% had one or more children.

Cohort 2's age range was 28 to 34 years in 1988 ($\bar{M} = 31.55$, $SD = 1.29$). No significant differences were found between men and women on occupational prestige or educational status for this cohort. Forty-four percent of the men and 25% of the women were in occupations at the highest professional and managerial levels. Of the women, 15% were full-time homemakers. Advanced graduate and professional degrees were held by 37% of the men and 23% of the women. Sixty-five percent of subjects in Cohort 2 were married and 36% had children. Comparisons with Cohort 1 at the same age yielded a significant difference in number of children, with members of Cohort 2 having fewer children ($\bar{M} = .54$) at age 31 than members of Cohort 1 ($\bar{M} = .93$), $t(179) = 2.02$, $p < .05$.

Measures

Inventory of Psychosocial Development

Personality development was assessed with the Inventory of Psychosocial Development (IPD), a questionnaire measure developed by Constantinople (1969) and later expanded by Boylin, Gordon, and Nehrke, (1976) and Walasky, Whitbourne, and Nehrke (1983-84). The IPD is based on Erikson's (1963; 1968) theory of development. It consists of 80 items divided into 8 subscales, which represent the eight psychosocial stages described by Erikson. Each scale

contains 5 items describing positive outcomes and 5 describing negative outcomes of the crisis associated with the psychosocial stage. Responses are indicated on 7-point scales from 1= "definitely most uncharacteristic of you" to 7= "definitely most characteristic of you." In the present study, scores were obtained by subtracting the sum of scores on the negative items from the sum of scores on the positive items. This scoring procedure produces a composite, or difference score for each stage scale which indicates how favorably the crisis has been resolved. Each stage score can range from -30 to 30.

The IPD has been utilized in at least thirty studies since 1969. Waterman & Whitbourne (1981) reviewed most of these studies and evaluated the psychometric properties and validity of the IPD. They determined the one-week test-retest reliability with a sample of 73 undergraduates at a state college. Stage scale reliabilities of the first six stage scales ranged from .71 to .89 with a median of .80. The full-scale reliability was .88. Waterman & Whitbourne also analyzed data from the 1976-77 testing of University of Rochester undergraduates and alumni to check on the internal consistency of the IPD stage scales. They reported Cronbach's α coefficients for stage scales 4, 5, and 6 of .82, .68, and .72, respectively. There is moderate support for the discriminant validity of the first six stage scales, with the scales for stages 1, 5, and 6 having received the

strongest support (Waterman & Whitbourne, 1981). As predicted by the epigenetic principle of Erikson's model, the various stage scales are all positively intercorrelated (Tesch, 1985; Waterman & Whitbourne, 1979).

Scales 7 and 8 have not been used as extensively for research as have scales 1 through 6, thus there is much less evidence for the reliability and validity of these two scales. Tesch (1985) evaluated the internal consistency of the expanded inventory and reported Cronbach's coefficient alphas for scales 7 and 8 of .61 and .69. These stage scales were found to predict status on an interview measure of ego integrity (Walaskay, Whitbourne, & Nehrke, 1983-84).

Life Experiences Measures

Biographical data questionnaires measuring education, work, and family experiences were administered to respondents at each follow-up. These questionnaires requested respondents to list postgraduate educational, occupational and family experiences and relevant dates associated with each. Educational histories included institutions attended and degrees received, occupational histories included positions held, family histories included marital history (marriage, separation, divorce, death of spouse, etc.), history of "live-in" relationships, and number and current ages of children. Members of Cohort 2 were administered (in 1976-77, when they were in college) a demographic questionnaire which included information on the

student's status in college (year and major), family background, and 10-year career and family goals.

The coding of life events from this measure was made in the categories of education, occupation, marital history, and parenting for each of two measurement times, 1976-77 and 1988, by two independent raters. The raters were undergraduate psychology majors working for research credit and supervised by the author.

Achievement. The index of achievement was based on two factors, highest educational attainment and current occupational prestige. Highest educational attainment was rated on a 4-point scale (4= Doctorate or professional degree; 3= Masters degree; 2= Some education beyond the Bachelor degree; 1= Bachelor degree). Occupational prestige was rated using Hollingshead's classification of occupations (Hollingshead & Redlich, 1958). Current occupations were rated on an 8-point scale (8= Higher executives, proprietors of large concerns, and major professionals; 7= Business managers, proprietors of medium-sized businesses, and lesser professionals; 6= Administrative personnel, proprietors of small independent businesses, and semiprofessionals; 5= Clerical and sales workers, technicians, and owners of little businesses; 4= Skilled manual employees; 3= Machine operators and semi-skilled employees; 2= Unskilled employees; 1= Unemployed).

Hollingshead's scale is a modified version of the U.S. Census occupational system of classifying occupations into socioeconomic groups (Edwards, 1938) validated against expert opinion. Kohn and Schooler (1983) provide further validation of this classification scheme with a sample of 90 men drawn from an area probability sample of men in the United States in 1964. They report a correlation of .89 of Hollingshead's system with an alternative classification of occupational status (Duncan, 1961) which was based on the Census classification and modified to conform to judgements of occupational prestige held by society at large. Interrater reliability for this scale was .91.

Occupational Continuity. Two separate indexes of occupational continuity were used. One was a count of the number of jobs held during the previous 11-year period, with low numbers indicating greater continuity. The second was a count of the number of shifts between functionally unrelated lines of work (Wilensky, 1961) during the previous 11-year period. Interrater reliabilities were .93 and .86.

Relationship Commitment and Stability. Success in establishing and maintaining an intimate relationship was measured by rating current marital status on a 5-point scale (0= never married; 1= divorced; 2= separated; 3= cohabiting; 4= married). This scale is a refinement of a measure used by Kahn et al. (1985). Stability of intimate relationships

was also assessed by the length (in years) of current intimate relationships.

Parenting Status. Current parenting status was assessed by counting the number of children.

Procedure

In the initial testing of University of Rochester undergraduates in 1966 (Constantinople, 1969), participants were recruited from 24 different classes during the last 15 minutes of the class period. The students were told that the experimenter, a doctoral candidate in psychology, was studying the relationships between students' perceptions of themselves and of the college environment. A copy of the IPD was subsequently mailed to the participants in this original study with an explanatory cover letter inviting them to respond. In the 1976-77 follow-up study (Whitbourne & Waterman, 1979), members of the original sample (Cohort 1) who had completed the mailed questionnaires and for whom data were available were again contacted by mail and sent a questionnaire packet. The packet contained the IPD and the biographical data questionnaire. During the spring of 1977, current University of Rochester undergraduates were approached and asked to participate in the study. These subjects (Cohort 2) were offered snacks as incentives while they completed the questionnaire packets, either in the student union or on the lawn of the main quadrangle.

In the spring of 1988 follow-up (Whitbourne et al., submitted), current addresses of members of Cohorts 1 and 2 were obtained from the University of Rochester alumni office. Due to an unexpected revision of the University's computer records of student identification numbers, the researchers were unable to identify subjects who were members of Cohort 2 with the code numbers that were previously recorded. The respondents who were contacted were identified through hand searches of graduation records matched with social security numbers (the code numbers used in 1966-67). However, this procedure identified only a small percentage of subjects who were first tested in 1976-7. A greater proportion of subjects from Cohort 1 were able to be located because the researchers had kept records of this cohort's names as well as ID numbers.

In October of 1988, respondents from Cohorts 1 and 2 whose names and addresses were available to the researchers were mailed questionnaire packets with a cover letter which explained the purpose of the study. Included were the IPD and a biographical data sheet identical to the one that was administered to Cohort 1 in the 1976-7 follow-up. The packets also contained an addressed, postage-paid envelope and a consent form to be returned in a separate envelope. Follow-up letters and additional questionnaire packets were sent to those who had not responded by December 1988.

CHAPTER 3

RESULTS

All analyses were conducted separately for each cohort and for men and women. In order to simplify the presentation of results, the times of testing were labelled 1966, 1977, and 1988, and the ages of cohort members at each follow-up were rounded off to 31 and 42 years. Because the generativity scale had not yet been developed at the time of the initial testing of Cohort 1, analyses involving the 1966 testing did not include that scale.

The means and standard deviations of IPD stage scores four through seven at each time of testing by cohort and sex are shown in Table 1 (see p. 27). Correlations among the IPD stage scores at each time of testing are presented in Tables 2 - 5 (pp. 28-31). Stabilities over the 11 years since college and (for Cohort 1) between ages 31 and 42 are underlined. Stabilities over the entire 22-year time span since college for Cohort 1 are also underlined. Of 28 correlations for the four stage scores from one time period to another, 27 are significant at the .01 level, suggesting considerable stability of the personality dimensions over time - particularly when one considers that 11 to 22 years passed between measurements and that many important experiences and role changes occurred during this time. However, most of the correlations are under .60, leaving more than 64% of the variance in personality unaccounted

Table 1

Inventory of Psychosocial Development Scale Scores by Cohort and Sex

Stage Scale			Cohort 1		Cohort 2	
			Men	Women	Men	Women
Industry	1966	<u>M</u>	6.38	6.70		
		<u>SD</u>	8.40	8.12		
	1977	<u>M</u>	13.23	13.95	10.12	12.15
		<u>SD</u>	8.28	7.27	6.74	7.58
	1988	<u>M</u>	16.20	17.05	13.33	16.65
		<u>SD</u>	7.22	6.73	7.21	6.62
Identity	1966	<u>M</u>	7.89	7.21		
		<u>SD</u>	6.70	7.07		
	1977	<u>M</u>	9.61	9.82	7.09	8.03
		<u>SD</u>	6.49	5.97	6.67	6.36
	1988	<u>M</u>	10.25	10.62	8.88	10.67
		<u>SD</u>	6.73	6.44	7.14	6.30
Intimacy	1966	<u>M</u>	11.44	10.88		
		<u>SD</u>	6.59	7.28		
	1977	<u>M</u>	12.48	13.79	11.16	13.80
		<u>SD</u>	7.14	6.87	9.29	6.28
	1988	<u>M</u>	12.25	15.11	12.02	16.63
		<u>SD</u>	7.23	6.49	8.63	6.35
Generativity	1977	<u>M</u>	8.56	9.26	7.30	8.70
		<u>SD</u>	5.89	5.47	6.71	4.32
	1988	<u>M</u>	9.02	10.51	7.65	10.53
		<u>SD</u>	5.95	5.81	5.38	5.15

Table 2

Intercorrelations Between IPD Scale Scores for Women in Cohort 1^a

IPD Scale	1	2	3	4	5	6	7	8	9	10	11
College (<u>n</u> = 76)											
1. Industry	-										
2. Identity	.48	-									
3. Intimacy	.37	.67	-								
Age 31 (<u>n</u> = 76)											
4. Industry	<u>.47</u>	.28	.23	-							
5. Identity	.26	<u>.37</u>	.27	.60	-						
6. Intimacy	.15	.27	<u>.46</u>	.34	.38	-					
7. Generativity	.21	.35	.34	.45	.41	.58	-				
Age 42 (<u>n</u> = 37)											
8. Industry	<u>.48</u>	.42	.46	<u>.45</u>	.28	.40	.47	-			
9. Identity	.37	<u>.49</u>	.52	.23	<u>.33</u>	.43	.44	.69	-		
10. Intimacy	.45	.53	<u>.74</u>	.37	.23	<u>.60</u>	.56	.69	.74	-	
11. Generativity	.21	.49	.39	.14	.31	.48	<u>.44</u>	.62	.76	.65	-

^aStabilities over the eleven years since college, over the eleven years between ages 31 and 42, and over the entire 22 years are underlined.

Table 3

Intercorrelations Between IPD Scale Scores for Men in Cohort 1^a

IPD Scale	1	2	3	4	5	6	7	8	9	10	11
College (\bar{n} = 79)											
1. Industry	-										
2. Identity	.47	-									
3. Intimacy	.32	.54	-								
Age 31 (\bar{n} = 79)											
4. Industry	<u>.38</u>	.31	.25	-							
5. Identity	.39	<u>.55</u>	.41	.60	-						
6. Intimacy	.24	.33	<u>.51</u>	.45	.53	-					
7. Generativity	.23	.33	.41	.55	.58	.62	-				
Age 42 (\bar{n} = 62)											
8. Industry	<u>.29</u>	.13	.19	<u>.50</u>	.33	.33	.37	-			
9. Identity	.30	<u>.49</u>	.32	.39	<u>.57</u>	.35	.42	.64	-		
10. Intimacy	.17	.21	<u>.42</u>	.27	.41	<u>.70</u>	.52	.31	.44	-	
11. Generativity	.16	.28	.39	.23	.30	.39	<u>.60</u>	.63	.62	.53	-

^aStabilities over the eleven years since college, over the eleven years between ages 31 and 42, and over the entire 22 years are underlined.

Table 4

Intercorrelations Between IPD Scale Scores for Women in Cohort 2^a

IPD Scale	1	2	3	4	5	6	7	8
College (<u>n</u> = 40)								
1. Industry	-							
2. Identity	.32	-						
3. Intimacy	.39	.53	-					
4. Generativity	.32	.38	.52	-				
Age 31 (<u>n</u> = 40)								
5. Industry	<u>.38</u>	.13	.40	.39	-			
6. Identity	.07	<u>.42</u>	.34	.18	.46	-		
7. Intimacy	.18	.26	<u>.56</u>	.27	.56	.50	-	
8. Generativity	.23	.19	.35	<u>.40</u>	.73	.63	.47	-

^aStabilities over the eleven years since college are underlined.

Table 5

Intercorrelations Between IPD Scale Scores for Men in Cohort 2^a

IPD Scale	1	2	3	4	5	6	7	8
College (<u>n</u> = 43)								
1. Industry	-							
2. Identity	.49	-						
3. Intimacy	.44	.38	-					
4. Generativity	.55	.44	.68	-				
Age 31 (<u>n</u> = 43)								
5. Industry	<u>.67</u>	.47	.50	.37	-			
6. Identity	.46	<u>.62</u>	.47	.42	.62	-		
7. Intimacy	.26	.24	<u>.69</u>	.48	.39	.52	-	
8. Generativity	.41	.53	.56	<u>.56</u>	.62	.69	.67	-

^aStabilities over the eleven years since college are underlined.

for. This suggests considerable potential for change, even if one takes into account the unexplained variance due to measurement error.

The correlations among the variables of industry, identity, intimacy, and generativity and the life events variables of occupational and educational attainment, number of jobs, career shifts, marital stability, years in relationship, and number of children, for each time of testing are shown by cohort and sex in Tables 6 through 11 (pp. 33-38).

Influence of Personality on the Life Course

The degree to which dimensions of psychosocial development predict later life events was examined in order to evaluate the importance of individual personality in shaping the life course. The correlations among the personality variables measured in college and life experiences measured 11 years later (and 22 years later for Cohort 1) were examined for each cohort (see Tables 6 - 11). In addition, for Cohort 1, the relationships between dimensions of psychosocial development measured at age 31 and later life events were also explored. When significant relationships were found between variables that were hypothesized to be related, bivariate linear regression analyses were conducted, using life events variables (occupational or educational attainment, number of jobs

Table 6

Intercorrelations Between Life Events Variables at Age 31 and
IPD Stage Scores for Women in Cohort 1

<u>IPD Scales</u>	<u>Life Events at Age 31</u>						
<u>College</u> (<u>n</u> = 76)	OCC ^a	EDUC ^b	NJOB ^c	CRSH ^c	MARS	YREL ^c	CHILD
Industry	.08	.09	.12	.11	.07	.22	.25*
Identity	-.14	-.08	.16	.09	.15	.41*	.27*
Intimacy	-.06	-.24*	.05	-.01	-.03	.13	.23*
<u>Age 31</u> (<u>n</u> = 76)							
Industry	.04	.28*	.28	-.02	.06	-.11	.07
Identity	-.02	.02	.23	.14	.12	.25	.21
Intimacy	-.09	-.06	.21	.07	.33**	.06	.28*
Generativity	-.11	-.10	.24	-.05	.45**	.12	.42**
<u>Age 42</u> (<u>n</u> = 37)	OCC ^d	EDUC	NJOB	CRSH	MARS	YREL	CHILD
Industry	.08	-.06	.08	-.09	.06	.11	.27
Identity	.11	-.08	.17	-.11	-.04	.08	.42**
Intimacy	-.00	-.06	.11	-.04	-.14	.13	.22
Generativity	.09	-.10	.19	-.06	.17	.38*	.35*

^an = 55 (excludes students and homemakers)

^bn = 72 (excludes students)

^cn = 37 (excludes 1988 dropouts)

^dn = 25 (excludes 1988 dropouts, students and homemakers)

*p < .05, two-tailed. **p < .01, two-tailed.

OCC = Occupational attainment

EDUC = Educational attainment

NJOB = Number of jobs held in previous 11-year period

CRSH = Number of career shifts in previous 11-year period

MARS = Marital stability

YREL = Years in relationship

CHILD = Number of children

Table 7

Intercorrelations Between Life Events Variables at Age 42 and
IPD Stage Scores for Women in Cohort 1

<u>IPD Scales</u>	<u>Life Events at Age 42 (n = 37)</u>						
	OCC ^a	EDUC	NJOB	CRSH	MARS	YREL	CHILD
<u>College</u>							
Industry	-.20	-.07	-.10	-.14	.25	.24	.16
Identity	-.34	-.15	-.17	.01	.40**	.48**	.44**
Intimacy	-.18	-.24	-.30	-.20	-.06	.07	.17
<u>Age 31</u>							
Industry	.05	.13	-.25	-.17	-.03	.02	-.05
Identity	-.05	-.09	-.17	.08	.09	.23	.21
Intimacy	.07	-.03	-.24	-.13	-.06	.02	.19
Generativity	.19	-.16	-.27	-.22	.17	.21	.08
<u>Age 42</u>							
Industry	-.05	-.31	-.11	-.07	.09	.28	.07
Identity	-.16	-.17	-.14	.11	.11	.16	.24
Intimacy	-.11	-.08	-.16	-.18	.02	.09	.13
Generativity	-.19	-.18	.10	.04	.13	.24	.19

^an = 32 (excludes homemakers)

*p < .05, two-tailed. **p < .01, two-tailed.

OCC = Occupational attainment

EDUC = Educational attainment

NJOB = Number of jobs held in previous 11-year period

CRSH = Number of career shifts in previous 11-year period

MARS = Marital stability

YREL = Years in relationship

CHILD = Number of children

Table 8

Intercorrelations Between Life Events Variables at Age 31 and IPD Stage Scores for Men in Cohort 1

<u>IPD Scales</u>	<u>Life Events at Age 31</u>						
<u>College</u> ($\bar{n} = 79$)	OCC ^a	EDUC ^a	NJOB ^b	CRSH ^b	MARS	YREL ^b	CHILD
Industry	.05	.15	-.17	-.07	.21	.11	.04
Identity	-.01	.10	.04	.06	.06	.02	-.07
Intimacy	-.02	-.02	.02	.04	.01	.05	-.02
<u>Age 31</u> ($\bar{n} = 79$)							
Industry	.12	.19	-.09	-.02	.10	.04	.05
Identity	.18	.12	-.22	.01	.08	.09	-.01
Intimacy	.22	.21	-.11	-.17	.10	.20	.21
Generativity	.11	.11	-.19	-.20	.25*	.33**	.37**
<u>Age 42</u> ($\bar{n} = 62$)	OCC ^c	EDUC	NJOB	CRSH	MARS	YREL	CHILD
Industry	.06	.22	.01	.07	.03	.03	.19
Identity	.02	.20	-.07	-.03	-.06	-.01	-.01
Intimacy	.06	.06	-.12	-.24	.10	.17	.12
Generativity	.04	.14	-.11	-.13	.26*	.29*	.25*

^a $\bar{n} = 68$ (excludes students)

^b $\bar{n} = 62$ (excludes 1988 dropouts)

^c $\bar{n} = 52$ (excludes students)

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

OCC = Occupational attainment

EDUC = Educational attainment

NJOB = Number of jobs held in previous 11-year period

CRSH = Number of career shifts in previous 11-year period

MARS = Marital stability

YREL = Years in relationship

CHILD = Number of children

Table 9

Intercorrelations Between Life Events Variables at Age 42 and
IPD Stage Scores for Men in Cohort 1

<u>IPD Scales</u>	<u>Life Events at Age 42 (n = 62)</u>						
<u>College</u>	OCC	EDUC	NJOB	CRSH	MARS	YREL	CHILD
Industry	-.16	.01	.06	-.07	.08	.06	.10
Identity	-.22	-.12	.07	.09	-.04	-.20	-.01
Intimacy	-.17	-.10	.21	.13	.10	-.06	.04
<u>Age 31</u>							
Industry	.10	.14	-.04	-.15	.10	.16	.16
Identity	-.06	.04	-.05	-.02	.10	.08	.00
Intimacy	.09	.10	-.03	.03	.15	-.02	.18
Generativity	.17	.05	-.10	.08	.36**	.15	.41**
<u>Age 42</u>							
Industry	.11	.17	.14	-.09	.08	-.01	.13
Identity	-.09	.16	.14	-.01	.04	-.12	.03
Intimacy	.00	.01	.04	.04	.05	-.09	.05
Generativity	.08	.04	.11	-.01	.29*	.07	.22

*p < .05, two-tailed. **p < .01, two-tailed.

OCC = Occupational attainment
 EDUC = Educational attainment
 NJOB = Number of jobs held in previous 11-year period
 CRSH = Number of career shifts in previous 11-year period
 MARS = Marital stability
 YREL = Years in relationship
 CHILD = Number of children

Table 10

Intercorrelations Between Life Events Variables and IPD Stage Scores for Women in Cohort 2

<u>IPD Scales</u>	<u>Life Events at Age 31 (n = 40)</u>						
<u>College</u>	OCC ^a	EDUC ^b	NJOB	CRSH	MARS	YREL ^c	CHILD
Industry	.14	.39*	-.07	-.06	.21	.21	-.04
Identity	-.03	.14	-.07	-.09	.36*	.23	.09
Intimacy	.06	.07	.05	-.12	.37*	.24	.18
Generativity	.13	-.01	.03	-.15	.19	.05	.04
<u>Age 31</u>							
Industry	.01	.05	-.19	-.25	.21	.11	.10
Identity	-.28	-.17	.01	.24	.43**	.28	.28
Intimacy	.11	.10	-.33*	-.14	.50**	.41**	.39*
Generativity	-.03	.09	-.08	.01	.21	.11	.15

^an = 33 (excludes homemakers and students)

^bn = 39 (excludes students)

^cn = 39 (due to incomplete responses to follow-up material)

*p < .05, two-tailed. **p < .01, two-tailed.

OCC = Occupational attainment

EDUC = Educational attainment

NJOB = Number of jobs held in previous 11-year period

CRSH = Number of career shifts in previous 11-year period

MARS = Marital stability

YREL = Years in relationship

CHILD = Number of children

Table 11

Intercorrelations Between Life Events Variables and IPD Stage Scores for Men in Cohort 2

<u>IPD Scales</u>	<u>Life Events at Age 31 (n = 43)</u>						
	OCC ^a	EDUC ^a	NJOB	CRSH	MARS	YREL	CHILD
<u>College</u>							
Industry	.32*	.33*	.04	-.22	.18	.35*	.08
Identity	.11	.03	.22	.10	.36*	.21	-.01
Intimacy	-.09	-.05	.07	.21	.21	.28	.10
Generativity	.14	.18	-.06	-.02	.17	.26	-.02
<u>Age 31</u>							
Industry	-.03	.14	.21	.05	.38*	.39**	.23
Identity	-.03	.04	.05	.18	.46**	.33*	.22
Intimacy	.01	.01	-.03	.22	.38*	.26	.13
Generativity	-.05	.13	.00	.19	.34*	.29	.11

^an = 40 (excludes students)

*p < .05, two-tailed. **p < .01, two-tailed.

OCC = Occupational attainment

EDUC = Educational attainment

NJOB = Number of jobs held in previous 11-year period

CRSH = Number of career shifts in previous 11-year period

MARS = Marital stability

YREL = Years in relationship

CHILD = Number of children

held, number of career shifts, marital stability, years in relationship, or number of children) as dependent variables and personality dimensions of industry, identity, intimacy, and generativity as independent variables. The results of these analyses are summarized in Tables 12 - 15.

For women in Cohort 1 (Table 12 - stages four through six only), sense of identity in college was a significant predictor of both length of relationship and number of children by age 31. Further, sense of identity in college was a significant predictor of marital stability, length of relationship, and number of children at age 42, 22 years later. No other college personality variable was significantly related to later life events, nor were any personality variables measured at age 31 significantly correlated with life events at age 42.

For men in Cohort 1 (Table 13), none of the college personality measures (stages four through six only) was shown to be significantly associated with life experiences eleven years later, at age 31, nor were they significantly related to events measured 22 years later, at age 42. However, generativity measured at age 31 was a significant predictor of both marital stability and number of children at age 42.

For women in Cohort 2 (Table 14), sense of industry in college was a predictor of educational attainment at age 31, and both identity and intimacy measured in college were

Table 12

Results of Regression Analyses Indicating the Effects of College Personality on Later Life Events for Women in Cohort 1

Age 31 Life Event	College IPD Scale	β Value	R ²	F
(\bar{n} = 76) Years in relationship ^a	Identity	.415	.173	7.09*
Number of children	Identity	.275	.076	6.05*
Age 42 Life Event	College IPD Scale	β Value	R ²	F
(\bar{n} = 37) Marital stability	Identity	.400	.160	6.85*
Years in relationship	Identity	.484	.234	11.01**
Number of children	Identity	.441	.194	8.68**

^a \bar{n} = 36 (excludes 1988 dropouts).

* p < .05. ** p < .01.

Table 13

Results of Regression Analyses Indicating the Effects of Personality on Later Life Events for Men in Cohort 1

Age 42 Life Event	Age 31 IPD Scale	β Value	R ²	F
(\bar{n} = 62) Marital stability	Generativity	.373	.139	9.40**
Number of children	Generativity	.411	.169	12.03**

* p < .05. ** p < .01.

Table 14

Results of Regression Analyses Indicating the Effects of College Personality on Later Life Events for Women in Cohort 2

Age 31 Life Event	College IPD Scale	β Value	R^2	F
($n = 40$) Educational ^a attainment	Industry	.389	.151	6.85*
Marital stability	Identity	.362	.131	5.73*
Marital stability	Intimacy	.368	.136	5.97*

^a $n = 39$ (excludes students)

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

Table 15

Results of Regression Analyses Indicating the Effects of College Personality on Later Life Events for Men in Cohort 2

Age 31 Life Event	College IPD Scale	β Value	R^2	F
($n = 43$) Occupational ^a attainment	Industry	.321	.102	4.36*
Educational ^a attainment	Industry	.328	.108	4.46*
Marital stability	Identity	.356	.127	5.96*

^a $n = 40$ (excludes students)

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

significant predictors of later marital stability. For women, no other personality variable measured in college was significantly associated with later life events.

For men in Cohort 2 (Table 15), sense of industry in college predicted both educational and occupational attainment eleven years later. In addition, sense of identity in college was a significant predictor of marital stability at age 31. No other college personality variable was found to have a significant relationship to later life experiences.

Influence of Life Experiences on Personality Development

Results thus far have suggested that a number of life experiences are partially determined by the individual's earlier personality. The next issue to address is whether the data is consistent with the hypothesis that the life experiences have independent effects on personality development, not mediated by the previous, considerably stable personality dimensions. To accomplish this, hypothesized correlations were examined between each of the IPD stage scales and life events, both measured at age 31 (see Tables 6 - 9). For each pair of variables that were significantly related, I followed a procedure used by Mortimer et al. (1982). First, the personality variable was regressed on the life event variable; then, the corresponding college personality variable was added as a second predictor to the regression equation. The partial

beta coefficients reflect the unique effects of the life events on the personality dimensions (i.e., the changes in the personality dimensions associated with the changes in the life experiences), holding earlier personality constant. The difference between the zero-order (unpartialled) coefficient and the partial beta coefficient indicates the degree to which the predictability of the age 31 personality dimension from the life event is attributable to the covariation of each with the college personality dimension. For Cohort 1, the college intimacy scale was added as the second predictor to the regression equation for later generativity, as the two scales were moderately correlated for both men and women and a measure of generativity was not used in the college testing for this cohort.

The results of these analyses are summarized in Tables 16 - 19. As can be seen from these tables, life events significantly predicted personality at age 31, independent of earlier personality. For women in Cohort 1 (Table 16), educational attainment at age 31 was a predictor of sense of industry, independent of earlier sense of industry. In addition, marital stability was positively associated with both intimacy and generativity, controlling for sense of intimacy measured in college, and number of children was also a predictor of generativity, independent of earlier intimacy. For men in Cohort 1 (Table 17), marital stability, years in relationship, and number of children

Table 16

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality at Age 31, and Controlling College Personality for Women in Cohort 1

Age 31 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
(n = 76) Industry ^a	Educational attainment	.279*	.219*	.29
Intimacy	Marital stability	.332**	.346**	.33
Generativity ^b	Marital stability	.448**	.459**	.33
Generativity ^b	Number of children	.419**	.360**	.24

^an = 72 (excludes students).

^bControlling for intimacy measured in college.

*p < .05. **p < .01.

Table 17

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality at Age 31, and Controlling College Personality (Intimacy) for Men in Cohort 1

Age 31 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
(n = 79) Generativity	Marital stability	.245*	.239*	.48
Generativity	Years in relationship	.328**	.310**	.47
Generativity	Number of children	.278*	.285**	.25

*p < .05. **p < .01.

Table 18

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality, and Controlling College Personality for Women in Cohort 2

Age 31 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
($n = 40$) Identity	Marital stability	.435**	.325*	.27
Intimacy	Marital stability	.497**	.335*	.41
Intimacy	Years in relationship	.414**	.296*	.39

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

Table 19

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality, and Controlling College Personality for Men in Cohort 2

Age 31 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
($n = 43$) Identity	Marital stability	.456**	.270*	.45
Identity	Years in relationship	.331*	.207	.43
Intimacy	Marital stability	.384*	.251*	.54
Generativity	Marital stability	.344*	.254*	.38

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

were all significant predictors of sense of generativity at age 31, independent of intimacy measured in college.

For women in Cohort 2 (Table 18), marital stability was a predictor of both identity and intimacy at age 31, net of earlier identity and intimacy, respectively. In addition, length of relationship had a positive effect on sense of intimacy, controlling for earlier intimacy.

Finally, for men in Cohort 2 (Table 19), marital stability measured at age 31 had a positive effect on sense of identity, intimacy, and generativity, independent of the corresponding college personality dimensions. Length of relationship was no longer a significant predictor of sense of identity at age 31 when controlled for identity measured in college.

Data from Cohort 1 were analyzed further to assess the extent to which personality is predictable from life events at age 42. Age 42 personality variables shown to be significantly correlated with the life events variables (see Tables 7 and 9) were regressed on life events at ages 31 and 42, and in each analysis the corresponding age 31 personality variable was added as a second predictor to the regression equation. Tables 20 and 21 present the results of these analyses.

For women (Table 20, p. 47), number of children by age 31 had a significant positive effect on both identity and generativity at age 42, holding the corresponding

personality variables at age 31 constant. In addition, length of relationship at age 31 had a significant positive effect on sense of generativity measured at age 42, independent of generativity measured at age 31. For men (Table 21, p. 48), the effects of marital stability, length of relationship, and number of children on generativity at age 42 were no longer significant when controlled for generativity at age 31.

Table 20

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality at Age 42, and Controlling Earlier Personality for Women in Cohort 1

Age 42 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
($n = 37$) Identity	Number of children	.416**	.340*	.20
Generativity ^a	Years in relationship	.380*	.319*	.29
Generativity	Number of children	.346*	.239	.24

^a $n = 35$ due to incomplete responses to follow-up material.

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

Table 21

Results of Regression Analyses Indicating the Effects of Life Experiences on Personality at Age 42, and Controlling Earlier Personality for Men in Cohort 1

Age 42 IPD Scale	Age 31 Life Event	β Value	Partial β	R^2
$(n = 62)$				
Generativity	Marital stability	.258*	.074	.36
Generativity	Years in relationship	.288*	.103	.37
Generativity	Number of children	.255*	.035	.36
Age 42 IPD Scale	Age 42 Life Event	β Value	Partial β	R^2
Generativity	Marital stability	.290*	.036	.37

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

CHAPTER 4

DISCUSSION

Reciprocal Relationships Between Personality and Life Experiences

The purpose of this study was to test a model positing reciprocal relationships between adult personality development and life experiences in the areas of education, occupation, and family. This model was tested in two stages of analyses. In the first stage, I assessed the lagged effects of personality dimensions on the life events experienced a decade or more later. In the second stage, I assessed the contemporaneous and lagged effects of life experiences on the personality dimensions independent of personality stability.

As hypothesized, several of the life events experienced by the subjects were predicted by personality variables measured in college, although a number of the predicted relationships were not supported by the results. However, when one considers that 11 (and in some cases) 22 years passed between the measurement times, the relationships are nevertheless impressive. Taken as a whole, these findings were interpreted as evidence that the individual personality has an important influence on the life course; that individuals actively select or create their life experiences to a certain degree. While this point may seem rather obvious, it has frequently been overlooked in the literature

on environmental determinants of personality change (Caspi, 1987; Mortimer, Finch, & Kumka, 1982).

The results were also consistent with the hypothesis that life experiences have a significant impact on personality development during the years following graduation from college. While most theorists would probably agree that extreme or traumatic life events are likely to cause personality change, advocates of personality stability may underestimate the influence of normative life experiences (such as those explored in this study) on personality. The present results suggest that even life events that are experienced by the majority of adults in our society have an important impact on personality development. Once again, however, a number of the hypothesized relationships between the biographical variables chosen for this study and the dimensions of psychosocial development were not supported; thus, this interpretation must be considered somewhat tentative. In particular, very few of the predicted effects of life events on personality at age 42 for Cohort 1 were significant. Therefore, the conclusion that life events affect personality development in adulthood must be limited to the decade or so following graduation from college.

Specific Relationships Between Psychosocial Dimensions and
Life Experiences

Industry

The hypothesis that sense of industry would be related to occupational attainment was supported only in the case of Cohort 2 men, with college industry predicting occupational attainment at age 31. Occupational attainment was not shown to have an effect on industry at age 31. Either occupational attainment does not affect one's sense of industry or (more likely) this measure of achievement was too coarse; that is, more differentiation within a narrow range of occupational categories was needed for this "advantaged" sample. The latter explanation may be particularly pertinent for Cohort 1 men, who were even more homogeneous in terms of their occupational status than were Cohort 2 men.

In addition, the lack of a significant relationship between sense of industry and occupational attainment for women in this sample may reflect a gender difference. Perhaps these women were less likely to express a sense of industry in occupational achievements than were men because they were afforded less opportunity and encouragement within the sociocultural environment to achieve in the occupational domain.

The expected relationships between industry and educational attainment, however, were supported in three

analyses. For both men and women in Cohort 2, sense of industry in college predicted the amount of postgraduate education by age 31. For Cohort 1 women, sense of industry at age 31 was influenced by educational attainment at the same age, controlling for industry in college. Thus, it appears that a strong sense of industry while in college is conducive to later achievement in the academic sphere. This academic achievement, in turn, may reinforce the perceptions of competence, productivity, and self-discipline that comprise a strong sense of industry in subsequent stages of development.

Identity

The hypothesis that identity would be related to occupational continuity received no support. It seems likely that the number of jobs held over an eleven-year period was too crude a measure of occupational continuity, in part because it failed to discriminate between job changes that were consistent with a particular career path and those that represented major shifts. An attempt was made, however, to determine the number of shifts between functionally unrelated lines of work, and this measure also failed to yield significant relationships between identity and occupational continuity.

Interestingly, identity was reciprocally related to marital stability and commitment for both women and men in Cohort 2. Furthermore, sense of identity predicted later

marital stability and commitment for women in Cohort 1, and identity was also reciprocally related to parenting status for Cohort 1 women. Identity and parenting status were not significantly related for Cohort 2. This may simply reflect a tendency for members of Cohort 2 to postpone having children (relative to members of Cohort 1). In order to evaluate this hypothesis it would be necessary to conduct another follow-up of participants in Cohort 2.

In general, however, for both men and women, social roles and commitments in the family realm appear to be important bases for and expressions of the development of identity. This is not surprising if one considers that an individual's self-definitions are connected to the roles to which he or she is committed. It seems likely that the stronger one's sense of identity, the more one will be able to commit to a variety of important social roles; while the more dedicated one is to various role commitments, the more secure will be one's sense of identity. For example, the decisions to marry and have children may require the perception that one's fundamental beliefs, values, and goals will persist over time. The lack of such a sense of continuity may result in an inability to commit oneself to enduring relationships. Changes in ongoing relationships that result in a loss of role commitments, such as through death or divorce, may cause a decline in one's sense of identity.

Alternatively, the findings regarding identity may be explained as a reflection of the relationship between social norms and expectations on one hand, and individual values, motives, and interests on the other. When these are in conflict, the individual may have more difficulty developing and maintaining his or her sense of identity. For the current sample, particularly for the women, there were normative pressures to marry and have children. Individuals who did not conform to these expectations may have received less validation of their identities from the social environment than those who did.

The fact that sense of identity and success in establishing and maintaining intimate relationships were positively related for men in Cohort 2, while no such relationship was found for Cohort 1 men, may reflect an increased tendency for men to define themselves in terms of family relationships and commitments. The social roles enacted in the realm of family may have become increasingly important for men as the structure of the American family, particularly in the functions of individual family members, has changed (Caspi, 1987). That is, marriage and parenting may have become significantly more important to men in the past decade as roles from which they derive their self-definitions.

Intimacy

Sense of intimacy at age 31 was significantly related to marital stability, independent of intimacy measured in college, for women in Cohort 1. In addition, for Cohort 2 women, college intimacy predicted later marital stability, while, in turn, marital stability and years in relationship predicted intimacy at age 31. Similarly, for men in Cohort 2, marital stability measured at age 31 predicted sense of intimacy at age 31, independent of college intimacy. Analyses of men in Cohort 1 did not show significant relationships between intimacy and the establishment or stability of intimate relationships.

These results provide substantial support for the hypothesis that an individual's sense of intimacy both influences and is influenced by his or her success in establishing and maintaining intimate relationships. Thus, development toward a greater sense of intimacy will be accompanied by increased stability of relationships, which will, in turn, promote an increase in sense of intimacy. In contrast, disruption of interpersonal relationships or failure to establish enduring relationships may lead to an increasing sense of isolation.

Generativity

The findings were also consistent with the hypothesis that sense of generativity is reciprocally related to parenting status. In addition, there were significant

reciprocal relationships between generativity and relationship commitment and stability. For women in Cohort 1, marital stability and number of children predicted generativity at age 31, whereas years in relationship and number of children at age 31 predicted age 42 generativity, independent of generativity measured at age 31. For Cohort 1 men, marital stability, years in relationship, and number of children at age 31 predicted generativity measured at age 31. For Cohort 2 men, generativity measured at age 31 was predicted by marital stability at age 31, independent of generativity measured in college for men in Cohort 2. The absence of any significant relationships between generativity and number of children for Cohort 2 may reflect this cohort's relative postponement of having children (similar to the explanation offered above regarding identity and parenting status for this cohort). Again, an additional follow-up is necessary to determine whether or not this explanation is plausible.

In general, these findings suggest that a strong sense of generativity motivates individuals to begin the process of creating a family and raising children. In turn, these experiences may promote a sense of nurturance, concern, and responsibility for future generations.

Conclusion

Overall, the results support the hypothesis that there is a reciprocal relationship between personality and life

experiences during the adult years. Specifically, the data are consistent with the hypothesis that personality partially determines life experiences. In turn, these experiences may have important consequences for personality development, at least until age 31, and possibly beyond.

These findings have implications for our understanding of the mechanisms by which stability of personality may be maintained. Costa and McCrae (1980) hypothesize that individuals choose or create environments that sustain the behavior that characterizes them, thus maintaining personality stability. The present study supports this hypothesis. If people tend to choose or create experiences and environments that reflect certain personality dimensions, and these experiences and environments in turn reinforce the personality dimensions, then a feedback system is formed that may continue throughout the life span, maintaining considerable stability over time.

The results also have implications for our understanding of change in personality during adulthood. Clearly, although life experiences are partially determined by an individual's personality, many of the events an individual experiences are outside of his or her personal control. Therefore, the finding that life experiences may have an impact on personality beyond adolescence suggests that there is potential for considerable personality change in adulthood. Thus, the influence of life experiences on

personality can help explain further progression or regression on certain personality dimensions as well as explaining stability on those same dimensions of personality.

These conclusions should be regarded as only tentative, however, because of several serious limitations of this research. First, personality and life events variables were analyzed as though they affect one another at discrete points in time, whereas it seems likely that these variables would continuously influence one another over time in an ongoing, interactive process. Analysis and description of the many strands of the actual process would at the very least require collecting data at more frequent intervals. A related problem concerns the hypothesized directions of causality and the relative influence of the variables. Personality was assumed to have a gradual effect over time whereas life experiences were hypothesized to have more immediate, as well as gradual, effects. While there is some previous evidence to support this model (Kohn & Schooler, 1983), this analysis does not disconfirm other plausible causal models.

In addition, this analysis has not, of course, ruled out the possibility that the significant relationships may be explained by other variables not included in the study. For example, it might be important to control for income, or to take into account other important events that have

occurred in the lives of these men and women over the period of the study.

Another limitation of this investigation is the fact that because the stage scores are intercorrelated, and many of the life events variables are also interrelated, it is difficult to determine which relationships are spurious or to tease out direct versus indirect effects. For instance, the relationship between identity and marital stability may be an artifact of the relationships of both those variables with intimacy.

A further limitation is that the data was not corrected for measurement error, which could result in weaker effects. Moreover, several of the life events variables were relatively diffuse and general, and may have been inadequate to discover more subtle but important relationships between personality and life experiences. For example, relationships between the amount of education (highest degree earned) and sense of industry were examined, but the measure did not take into account other indicators of academic attainment, such as academic awards or honors. Measures of relationship commitment and stability did not include an assessment of satisfaction with the relationship. Similarly, the measure of parenting status did not take into account the perceived quality of the parent-child relationship. A substantial amount of research is needed to understand these distinctive relationships.

A final limitation of this study is that the sample was not representative of the general population. The participants were generally white, upper-middle class, self-selected college graduates, and generalizations beyond this sample should be made with caution.

These limitations notwithstanding, the results are clearly consistent with the hypothesized reciprocal relationships between personality and life events, suggesting that the personality dimensions derived from Erikson's theory of psychosocial development both affect and are affected by life experiences in the domains of work and family. The fact that several of these relationships were replicated across the two different cohorts provides further support for this model. Future research in this area should include additional sequential studies utilizing data from different cohorts and including individuals beyond the age of 42, as well as men and women of different socioeconomic levels, in order to further address the issue of generalizability. Future research should also examine historical and cultural factors that may influence relationships among variables. For example, norms and opportunities regarding family role relationships may change over time, with different norms operating for different cohorts.

APPENDIX

QUESTIONNAIRES

Post-College Experience Form

Please write your answers to these questions in the space provided below.

1. Age _____

2. Sex _____

3. Educational background

School	Dates of Attendance	Part-or Full-time	Major	Degree
--------	---------------------	-------------------	-------	--------

4. Employment background

Position	Firm	Dates of employment
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5. Current marital status

Single____ Married____ Separated____ Divorced____ Widowed

Marital background

Please describe your marital history including as many of the following as apply: Marriage, separation, reconciliation, divorce, death of spouse.

Event

Date

6. Number of children _____

Sex and present age of each child

7. Spouse's education

- _____ High school
- _____ Some college
- _____ Bachelor's degree
- _____ Master's degree
- _____ Doctorate/professional degree

8. Spouse's vocation

Inventory of Psychosocial Development

Following these instructions you will find a list of 80 terms and phrases which were used by students to describe themselves. Please use the list to describe yourself as you honestly feel and believe you are. Following each phrase are numbers from 7 to 1. Circle the seven (7) for phrases that are definitely most characteristic of you, the six (6) for phrases that are very characteristic of you, etc. Circle the one (1) if the phrase is definitely most uncharacteristic of you. In other words:

- 7 = definitely most characteristic of you
- 6 = very characteristic of you
- 5 = somewhat characteristic of you
- 4 = neither characteristic nor uncharacteristic of you
- 3 = somewhat uncharacteristic of you
- 2 = very uncharacteristic of you
- 1 = definitely most uncharacteristic of you

Be sure when you do these ratings that you are guided by your best judgment of the way you really are. There is no need to ponder your ratings excessively; your first impressions are generally the best. Do the phrases in order. Be sure to answer every item.

1. placid and untroubled 7 6 5 4 3 2 1
2. an automatic response
to all situations 7 6 5 4 3 2 1
3. adventuresome 7 6 5 4 3 2 1
4. can't fulfill my ambitions 7 6 5 4 3 2 1
5. confidence is brimming over 7 6 5 4 3 2 1
6. little regard for the
rest of the world 7 6 5 4 3 2 1
7. incapable of absorbing frustration
and everything frustrates me 7 6 5 4 3 2 1
8. value independence above security 7 6 5 4 3 2 1
9. sexually blunted 7 6 5 4 3 2 1
10. conscientious and hard-working 7 6 5 4 3 2 1
11. a poseur, all facade and pretense 7 6 5 4 3 2 1
12. candid, not afraid to expose myself 7 6 5 4 3 2 1

13. accessible to new ideas 7 6 5 4 3 2 1
14. meticulous and over-organized 7 6 5 4 3 2 1
15. dynamic 7 6 5 4 3 2 1
16. don't apply myself fully 7 6 5 4 3 2 1
17. natural and genuine 7 6 5 4 3 2 1
18. preoccupied with myself 7 6 5 4 3 2 1
19. can't share anything 7 6 5 4 3 2 1
20. free and spontaneous 7 6 5 4 3 2 1
21. afraid of impotence 7 6 5 4 3 2 1
22. interested in learning
and like to study 7 6 5 4 3 2 1
23. spread myself thin 7 6 5 4 3 2 1
24. warm and friendly 7 6 5 4 3 2 1
25. imperturbable optimist 7 6 5 4 3 2 1
26. cautious, hesitant, doubting 7 6 5 4 3 2 1
27. ambitious 7 6 5 4 3 2 1
28. fritter away my time 7 6 5 4 3 2 1
29. poised 7 6 5 4 3 2 1
30. very lonely 7 6 5 4 3 2 1
31. pessimistic, little hope 7 6 5 4 3 2 1
32. stand on my own two feet 7 6 5 4 3 2 1
33. think too much about the
wrong things 7 6 5 4 3 2 1
34. serious, have high standards 7 6 5 4 3 2 1
35. attempt to appear at ease 7 6 5 4 3 2 1
36. have sympathetic concern
for others 7 6 5 4 3 2 1
37. able to take things as they come 7 6 5 4 3 2 1

38. feel as if I were being followed 7 6 5 4 3 2 1
39. inventive, delight in finding new
solutions to new problems 7 6 5 4 3 2 1
40. ineffective, don't amount to much 7 6 5 4 3 2 1
41. know who I am and what
I want out of life 7 6 5 4 3 2 1
42. cold and remote 7 6 5 4 3 2 1
43. dim nostalgia for lost paradise 7 6 5 4 3 2 1
44. quietly go my own way 7 6 5 4 3 2 1
45. big smoke but no fire 7 6 5 4 3 2 1
46. accomplish much, truly productive 7 6 5 4 3 2 1
47. never know how I feel 7 6 5 4 3 2 1
48. tactful in personal relations 7 6 5 4 3 2 1
49. deep, unshakable faith in myself 7 6 5 4 3 2 1
50. always in the wrong, apologetic 7 6 5 4 3 2 1
51. sexually aware 7 6 5 4 3 2 1
52. a playboy/playgirl,
always "hacking" around 7 6 5 4 3 2 1
53. pride in my own character
and values 7 6 5 4 3 2 1
54. secretly oblivious to the
opinions of others 7 6 5 4 3 2 1
55. never get what I really want 7 6 5 4 3 2 1
56. good judge of when to comply
and when to assert myself 7 6 5 4 3 2 1
57. inhibited and self-restricted 7 6 5 4 3 2 1
58. excel in my work 7 6 5 4 3 2 1
59. afraid of commitment 7 6 5 4 3 2 1
60. comfortable in intimate
relationships 7 6 5 4 3 2 1

61. want to be remembered 7 6 5 4 3 2 1
62. think about my failures 7 6 5 4 3 2 1
63. concerned about my health 7 6 5 4 3 2 1
64. reached my goals 7 6 5 4 3 2 1
65. like to care for others 7 6 5 4 3 2 1
66. afraid of getting old 7 6 5 4 3 2 1
67. enjoy spending time by myself 7 6 5 4 3 2 1
68. proud of what I've done 7 6 5 4 3 2 1
69. feel productive in my work 7 6 5 4 3 2 1
70. regret the mistakes I've made 7 6 5 4 3 2 1
71. bored by work 7 6 5 4 3 2 1
72. satisfied with my life so far 7 6 5 4 3 2 1
73. creative 7 6 5 4 3 2 1
74. don't have enough time
to do what I want 7 6 5 4 3 2 1
75. have little interest in
family affairs 7 6 5 4 3 2 1
76. take responsibility for my actions 7 6 5 4 3 2 1
77. enjoy making plans for the future 7 6 5 4 3 2 1
78. wish I could change myself 7 6 5 4 3 2 1
79. preoccupied with myself 7 6 5 4 3 2 1
80. wouldn't change my life
if I lived it over 7 6 5 4 3 2 1

Stage Scale Item Composition

Stage 1	Basic Trust	1, 13, 25, 37, 49
	Basic Mistrust	7, 19, 31, 43, 55
Stage 2	Autonomy	8, 20, 32, 44, 56
	Shame and Doubt	2, 14, 26, 38, 50
Stage 3	Initiative	3, 15, 27, 39, 51
	Guilt	9, 21, 33, 45, 57
Stage 4	Industry	10, 22, 34, 46, 58
	Inferiority	4, 16, 28, 40, 52
Stage 5	Identity	5, 17, 29, 41, 53
	Identity Diffusion	11, 23, 35, 47, 59
Stage 6	Intimacy	12, 24, 36, 48, 60
	Isolation	6, 18, 30, 42, 54
Stage 7	Generativity	61, 65, 69, 73, 77
	Stagnation	63, 67, 71, 75, 79
Stage 8	Integrity	64, 68, 72, 76, 80
	Despair	62, 66, 70, 74, 78

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