The "CEO" of Women's Work Lives: How Big Five Conscientiousness, Extraversion, and Openness Predict 50 Years of Work Experiences in a Changing Sociocultural Context

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Few long-term longitudinal studies have examined how dimensions of personality are related to work lives, especially in women. We propose a life-course framework for studying work over time, from preparatory activities (in the 20s) to descending work involvement (after age 60), using 50 years of life data from the women in the Mills Longitudinal Study. We hypothesized differential work effects for Extraversion (work as pursuit of rewards), Openness (work as self-actualization), and Conscientiousness (work as duty) and measured these 3 traits as predictor variables when the women were still in college. In a prospective longitudinal design, we then studied how these traits predicted the women's subsequent work lives from young adulthood to age 70 and how these effects depended on the changing sociocultural context. Specifically, the young adulthood of the Mills women in the mid-1960s was rigidly gender typed and family oriented; neither work nor education variables at that time were predicted from earlier personality traits. However, as women's roles changed, later work variables became related to all 3 traits, as expected from current Big Five theory and research. For example, early personality traits predicted the timing of involvement in work, the kinds of jobs chosen, and the status and satisfaction achieved, as well as continued work participation and financial security in late adulthood. Early traits were also linked to specific cultural influences, such as the traditional feminine role, the women's movement, and graduate education for careers.

Keywords: adult development, five-factor model, longitudinal, retirement, women's movement

After considerable disagreement and debate, a large body of research now lends credence to the idea that personality traits matter at work (e.g., Barrick & Mount, 2005). However, few articles have used longitudinal designs that afford predictions over time. (For exceptions, see Judge, Higgins, Thoresen, & Barrick, 1999; Woods & Hampson, 2010.) Such longitudinal studies are critical to testing person–environment interaction models of personality effects on work, in particular the hypothesis that personality traits shape how individuals select themselves, and how they are selected, into particular work environments, as well as how individuals subsequently experience those environments and progress into retirement (e.g., Caspi & Roberts, 2001; Roberts, Caspi, & Moffit, 2003). Thus, there is a need for studies in which the hypothesized personality antecedents are measured prior to subsequent work outcomes observed across the life span within the same sample.

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In addition, much less is known about the longitudinal links between personality and work for women than is known for men. In both the Terman sample (e.g., Terman & Oden, 1959) and the Institute of Human Development (IHD) samples (e.g., Stroud, 1981), the primary role for most women was homemaker. When women did work outside the home, their roles were stereotyped: They usually found jobs as clerical workers or schoolteachers. Only well into their middle age, after much cultural change, did women begin to participate more broadly in the world of work (Clausen & Gilens, 1990; Holahan & Sears, 1995). Terman observed, "The careers of women are often determined by extraneous circumstances rather than by training, talent, or vocational interest" (Terman & Oden, 1959, p. 144)—that is, chance or random factors rather than systematic individual differences. Note that Terman did not use the term *personality.* Indeed, these studies of work did not employ personality inventories in common use by other investigators. Much later, Judge et al. (1999) constructed a Big Five measure from interviewer Q-sort items for use in the IHD sample, but in their analyses, they combined women with men, thus leaving unexplored the potentially unique work lives of women.

The present research was designed to address these and other limitations in the literature. Whereas research on work and careers has often recruited research participants from a common workplace or type of industry, we used a cohort sample of women born in the late 1930s who had in common their college experience in the late 1950s, namely, the women participating in the Mills Longitudinal Study (e.g., Helson, 1967). Therefore, we were able to conduct a true prospective study: The personality traits used as predictors were all measured at age 21, well before the women entered the workforce. As the women in this sample were studied in young adulthood, through middle age, and most recently into their 70s, we were able to investigate individual differences not only in status and satisfaction in work but also in the timing of work lives, the nature of jobs chosen, factors related to retirement decisions, and financial security at age 70.

This research takes seriously the idea that personality traits do not exist in a vacuum but are always expressed within a broader sociocultural context. In particular, the women of the Mills Study lived through a transitional cultural era when gender roles and pronatal values in the United States changed dramatically, from the rigid gender-role conceptions of the 1950s to the current, more egalitarian values. The Mills women were college seniors in 1958 and 1960 when rigid gender roles defined women's roles as restricted to wife and mother and discrimination against women in education and employment was pervasive, unquestioned, and even legal (e.g., Bird, 1968). Over the next 50 years, however, as norms and expectations changed, these women developed considerable heterogeneity in the nature, amount, and circumstances of their subsequent work and in their patterning of work and family life. We are attentive to the influence of this cultural context and its link to personality in our hypotheses and in the variables we study. That is, in addition to commonly studied work outcome variables, we also consider important gender-role variables relevant to women's work lives such as commitment to wife and family roles, divorce as an option to dissolve conflicted marriages, and even the impact of the women's movement (e.g., Duncan & Agronick, 1995).

Previous research on personality and work in the Mills sample (e.g., Roberts, 1997; Roberts & Chapman, 2000; Roberts, Helson, & Klohnen, 2002) has focused primarily on personality change. That is, personality was treated as the dependent variable, influenced by the women's personal and work experience, not examined as an antecedent of work experience. We build on this work, but our concerns are different: We focus not on personality change but on the prediction of work variables over a newly available span of 50 years (e.g., Helson, George, & John, 2009), using recently constructed Big Five measures (Soto & John, 2009) as predictors assessed when the women were still in college. One of the advantages of such a 50-year study is that we can build on our earlier work, including a rich set of dependent variables that we can now use for our new, longer range purposes. Measures developed for previous studies and purposes are important to this study and are described and cited in appropriate context.

Studying Personality Effects on Work Lives Over Time

Our most basic hypothesis is that individuals who vary on the broad Big Five personality dimensions will differ in the way they interact with their environments, that is, in the way they select, act upon, and react to particular situations. Because individuals bring their preexisting personality traits with them to bear on potential work environments, these personality differences should affect their work lives as they unfold during adulthood and into retirement age. At the most general level, then, this research provides a strong longitudinal test of the predictive utility of personality, as emphasized in recent studies by Ozer and Benet-Martínez (2006) and Roberts, Kuncel, Shiner, Caspi, and Goldberg (2007).

We expected to find effects generally consistent with the current literature about links between the Big Five dimensions and aspects of work such as the nature of work and work satisfaction. However, here we are taking a broader life-span perspective on work, with a focus on capturing women's work lives—that is, the ways in which personality effects on work are related to developmental processes, such as when careers are launched and when they are set aside. To do so, however, we needed a life-course framework for studying work lives over time.

The sequence of life contexts in which adult personality is expressed and shaped was studied by Erikson (1950), Havighurst (1972), Kuhlen (1968), Levinson (1978), Super (1953), Vaillant (1977), and others, sometimes with particular attention to work lives. This literature contributed to the selection of ages at which follow-ups of the Mills women were conducted (mean ages 27, 43, 52, 61, and most recently 70) and to the questions the women were asked at each assessment. With the additional perspective of recent research on the differentiation of middle age (e.g., Helson, Soto, & Cate, 2006; Moen & Wethington, 1999; Staudinger & Bluck, 2001), we propose that women's work lives may be usefully sectioned into three main conceptual periods (see Table 1): an early period of exploring and preparing for work, a middle period including (a) ascending and (b) maintaining phases, and a late period including (a) early and (b) late phases of descending.

How does this life-course framework apply to the work lives of the Mills women? In their mid-20s, many Mills women did some exploration or preparation, but like most young women in the

Table 1
Overview of Study Design: Antecedent Personality Traits as Predictors Measured at Age 21 and Work Outcomes Measured in Three Main Periods of Work Life From the Mid-20s to Age 70

	Three main periods of work lives and some main variables studied		
Antecedent personality traits (at age 21)	Preparation and exploration (by mid-20s)	Ascending work involvement (ages 28–43) and work involvement maintained to age 52	Descending work involvement (ages 59–70)
Conscientiousness, Extraversion, and Openness	Graduate education Involvement in work Satisfaction in work Creative accomplishments	Timing of early career efforts Sociocultural factors linked to working: Commitment to wife and mother roles Importance of women's movement Catching up with graduate education Nature of work: Enterprising and social Occupational creativity Rewards of work: Satisfaction and status	Before retirement (age 59): Importance of work to identity Time expected until retirement Factors affecting decision to retire (age 61): Leadership, potential for advancement Difficult relationship with supervisor At age 70: Amount of paid work Financial security

culture of the early 1960s, they were much more focused on family than work. In the ascending phase of the middle period (ages 28–43), many were getting started in work and developing careers, and in the maintaining phase (tested at age 52), they were participating maximally, and the nature of their work was clearest. In the descending period, the women ages 59–61 were deciding when and how completely to leave the work world and what to put in its place. By age 70, most women had retired. Table 1 shows normative themes and major variables in the women's work lives, classified into the three main periods and several subphases.

Studying the Influence of Personality on Work Across a Changing Sociocultural Context

Hypotheses about links between personality and work lives need to take into account the sociocultural context in which individuals construct their lives. The Mills women, born in the late 1930s, went to college in a sex-traditional era. Women expected (and were expected) to marry and have children with little delay. Most women thought they might work at some times in their lives (before they had children or maybe after their children were older) but that their main responsibilities would be to their husbands and children. They expected an average of four children, though they eventually had only an average of two (Helson, Mitchell, & Moane, 1984). They started their adult lives in the early 1960s, a time when women were told their place was in the home and their job was to care for their husband and children; they were often not welcome in graduate school or higher level employment. As Bird (1968) documented in her book *Born Female,* there were quotas for women's admission to doctoral programs (e.g., in 1960, less than 10% of entering medical students were women), women who were employed were paid substantially less than men for the same work (e.g., with reasons including that women did not have to support a wife and children), and even highly educated women could not find employment commensurate with their qualifications (e.g., women with master's of business administration degrees from Harvard were told by recruiters that their companies did not have any women in positions higher than secretary, nor did they want any women higher than a secretary; see Bird, 1968, p. 44). The women in the Mills sample only later experienced the turbulence of the late 1960s and 1970s, which would include a rapidly increasing rate of divorce, concerns about overpopulation and the availability of birth control, and the entrance of increasing numbers of women into the labor force, including the professions. These trends are shown in Figure 1. Political events of the era included the passage of the Equal Pay Act (1963), requiring equal pay for men and women who performed substantially equal work; formation of the National Organization of Women (NOW) in 1966; Title IX passed by Congress, prohibiting discrimination in educational institutions that received federal funds (Title IX, Educational Amendments, 1972); and the legalization of abortion in *Roe v. Wade* (1973).

We expected personality to show the least relation to work experiences at the first, early adult follow-up in the mid-1960s. At this time, the women were in their mid-20s, and many were primarily concerned with finding or settling down with a partner, helping him get started in his career, and beginning a family. The women's movement had barely begun. If one considers the earliest phase of the women's movement to have begun with Betty Friedan's (1963) book *The Feminine Mystique,* the movement's broader impact would not have been felt until the Mills women were in their 30s.

In general, one expects correlations between predictors and criteria measured close in time (e.g., 5 years apart) to be stronger than correlations between variables measured further apart (e.g., Judge et al., 1999; Roberts & DelVecchio, 2000). In this context, however, we expected correlations between early adult personality and work outcomes to become substantial only as cultural changes took hold and women overall became more work oriented. By the early midlife assessment in 1981, when the women were in their early 40s, we should be able to see the effects of the loosening of the rigid gender-role expectations and thus a greater influence of personality traits on how women reacted to the newly emerging work opportunities.

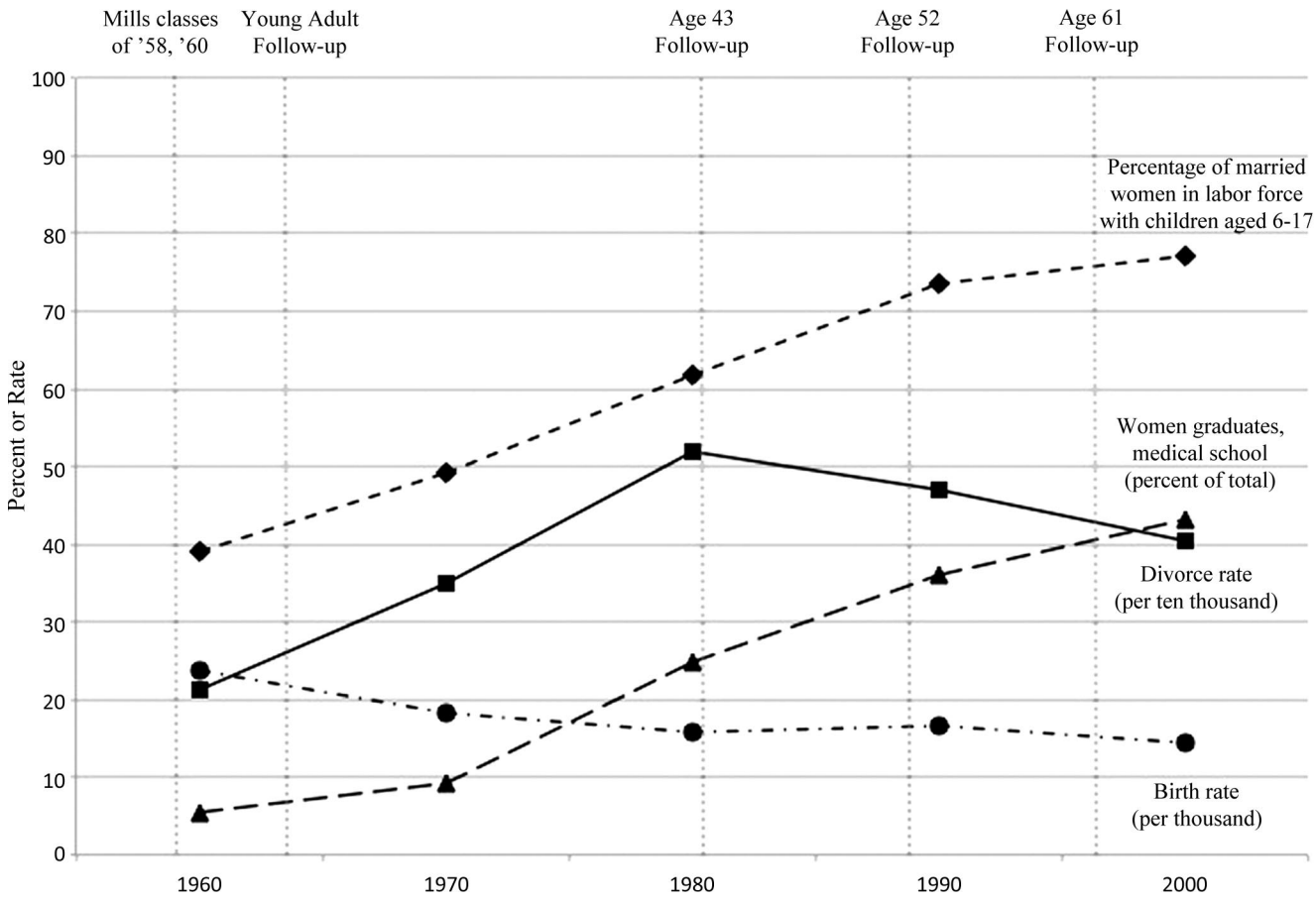

Figure 1. Sociocultural context for women's work lives in the United States: illustrative changes since 1960. Sources: Association of American Medical Colleges (n.d.), U.S. Census Bureau (2006), and U.S. Department of Labor, Bureau of Labor Statistics (2008).

Effects of Early Extraversion, Openness, and Conscientiousness on Women's Work Lives

We now consider specific hypotheses based on theoretical accounts and empirical findings regarding the Big Five dimensions (e.g., John, Naumann, & Soto, 2008; McCrae & Costa, 2008), as well as the growing research literature on Extraversion, Openness, and Conscientiousness in the workplace (e.g., Barrick, Mount, & Judge, 2001; Judge, Bono, Ilies, & Gerhardt, 2002). We focus on the effects of these three traits because they were of greatest interest here: Extraversion and Conscientiousness have been found to predict important work variables, including both subjective experiences and objectively scored outcomes, in both cross-sectional and longitudinal studies of work and personality, and although findings for Openness have varied somewhat from one study to another, there are good reasons to believe that Openness would be important in a sample of women who chose to attend a liberal arts college with a distinguished arts faculty (see McCrae, 1987, 1996) and showed considerable range in creative potential in college (Helson, 1967). We are not the first to emphasize these three traits in longitudinal research on personality and work; indeed, Woods and Hampson (2010) also focused on Extraversion, Openness, and Conscientiousness in their longitudinal study of predicting occupational choice from childhood personality. They found that these dimensions, but not Agreeableness or Neuroticism, predicted the nature of work in adulthood, as assessed by Holland's (1985) six categories of vocational interests and environments.

The sections that follow lay out the key aspects of personality functioning associated with high (vs. low) levels of Extraversion, Openness to Experience, and Conscientiousness in general and specifically in the world of work. For example, we consider how much women who were high in each trait would participate in work (or in preparation for work) in the young adult years and how the traits would be related to commitment to family and attainment of a satisfying career during the ascending and maintaining years, to the kind of work the women were engaged in during the maintaining years, and to factors in the descending years that would affect the maintenance of careers versus retirement and financial security (see Table 1).

Hypotheses About Extraversion: Work as a Pursuit of Rewards

In the Big Five taxonomy, Extraversion implies an energetic approach toward the social and material world and includes traits

such as sociability, energy, assertiveness, and positive emotionality (e.g., Costa & McCrae, 1992; John et al., 2008). In general, individuals high in Extraversion are expected to have the energy, assertiveness, and social interest to seek impact, status, and social interaction via work. However, when the Mills women were young adults in their mid-20s (i.e., in the mid-1960s), doing well in work was not yet generally admired in women, and individual differences in Extraversion should have had little effect on their work experiences. As the culture began to change, we expected extraverted women to develop committed work lives sooner than introverted women. Moreover, extraverts should experience more pleasure and feel less inhibition in the social interactions required in many work environments and seek out and enjoy the kinds of interactions and activities that lead to leadership and higher status while avoiding those that lead to low status (Anderson, John, Keltner, & Kring, 2001; Judge et al., 1999; Ng, Eby, Sorensen, & Feldman, 2005; Seibert & Kraimer, 2001). Thus, we expected extraverted women to attain higher status and enjoy their work more than introverted women. We also expected extraverts to be more receptive to current social trends and thus be influenced by the women's movement, which encouraged women to seek careers.

As to the nature of work, we expected to find, consistent with the literature, that Extraversion relates to an interest in work that is entrepreneurial and social, involving interaction with and influence exerted on others (Barrick, Mount, & Gupta, 2003; Costa, McCrae, & Holland, 1984; Judge et al., 2002; Watson & Clark, 1997). In general, extraverts should prefer work that allows them to assert their will and to act on their environment. Here, we predicted that women high in Extraversion would select themselves into work environments and leadership positions that provide an opportunity for initiative, such as occupations where they work for themselves.

Retirement age and other aspects of retirement changed considerably during the late 20th century, creating conditions under which personality traits should influence how long and how much women worked, how important work was to their identity, and what they turned to as they made work less central in their lives. We expected extraverts, with their higher energy levels and their interest in leadership, status, and social interaction, to remain engaged rather than retire, as shown by continued interest in paid work and in volunteer work in older age.

Hypotheses About Openness to New Experience: Work as Self-Actualization

Openness to new experience describes an individual's mental states and experiential life (e.g., interest, imagination, aesthetic reactions), the individual's originality and complexity, and the manifestation of these internal experiences in goals, attitudes, and behavior as shown by traits such as curiosity, adventurousness, broad interests, and progressive (vs. conventional) values (McCrae, 1996; McCrae & John, 1992). Increased access to the work world for women in the late 1960s and 1970s would have offered lifestyles that would be highly congenial to open women. In this cohort, Openness would have enhanced a woman's ability to imagine herself in a man's world, to seek congenial areas of work, and to take herself seriously in these endeavors. We therefore expected them to start their work lives early, relative to their cohort. In contrast, women low in Openness should be more conventional and tend to display resistance or ambivalence to entry into the workforce, preferring more conservative or constrained paths and lacking strong goals related to work.

Due to their liking for the new and complex, women high in Openness (as compared to those low) should be generally interested in intellectual work that requires advanced education or work that is self-expressive, such as the arts (Barrick et al., 2003; Costa et al., 1984; Larson, Rottinghaus, & Borgen, 2002). They should be uninterested in routine, detail-oriented, and highly structured work and resistant to gender-role expectations that would limit them. We expected them, consistent with previous research, to seek out higher levels of education than women lower in Openness (Costa et al., 1986; McCrae, 1996). They should enjoy the autonomy of working for themselves rather than for others (Roccas, Sagiv, Schwartz, & Knafo, 2002). They should demonstrate creativity in their work and perform well in creative aspects of their work or in jobs that allow for creative expression (e.g., McCrae, 1987; Williams, 2004).

Openness has not been associated with consistent career maintenance: An openness to new opportunities and challenges can be detrimental to focused, sustained efforts at the same job or career (e.g., Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004). For women high on Openness, the start-up phase of a career might be most appealing and engaging. Yet they cannot always find the kind of work they would like, or it does not pay well. If their work is not challenging or does not sustain them, they may explore new avenues. Thus, we expected them to give up or change careers more often than women low in Openness. This is consistent with the finding that Openness is associated with the experience of many life events, both favorable and adverse (Headey & Wearing, 1989).

Women high in Openness attach low value to financial rewards; therefore, they would not choose work or partners with financial security in mind (Seibert & Kraimer, 2001). Indeed, Helson (1967) found that creative women and their partners were less likely to endorse economic values than less creative women and their partners. Furthermore, open women who work for themselves would be less likely to have pensions and other remunerative benefits than women who worked for organizations (Pienta & Hayward, 2002). Thus, we expected open women to be more likely to develop concerns about financial security as they approached retirement age.

Hypotheses About Conscientiousness: Work as Duty

Conscientiousness involves socially prescribed impulse control that facilitates task- and goal-directed behavior—thinking before acting; delaying gratification; following norms and rules; and planning, organizing, and prioritizing tasks (e.g., John & Srivastava, 1999). In other words, highly conscientious people are not only dutiful and careful but also practical and cautious, and they exercise prudent judgment. In most work environments today, Conscientiousness is associated with a responsible, hardworking orientation and good performance regardless of type of job (Barrick & Mount, 1991; Barrick et al., 2003; Roccas et al., 2002). In the 1960s, however, when the Mills women were making their initial life choices, women's duties were culturally defined in relation to husband and family, not in terms of work outside the home. We therefore predicted that conscientious women would

show a high level of adherence to the traditional responsibilities of wife and mother and that this adherence would compete with their early work engagement. As a result, the work involvement of highly conscientious women should tend to be similar to that of women lower in conscientiousness during the ascending period.

A second and related factor should further offset a strong work involvement in conscientious women: their lower likelihood of divorce. The divorce rate doubled in the United States between 1966 and 1976 (Cherlin, 1981), and women who divorced were much more likely to join the labor force than were women in stable marriages (e.g., Helson & Picano, 1990; Hoffman, 1977; Roberts et al., 2002). However, women high in Conscientiousness would be expected to choose a partner prudently, with an eye to practical and family matters. They should work particularly hard to make their marriages successful and be reluctant to make the risky decision to divorce. Thus, they should be less likely to get divorced by early midlife and have less need than less conscientious women to participate in the labor force at an age when their children were still young.

Only as their family responsibilities waned and as paid work became more widely accepted (if not expected) for women would conscientious women shift to stronger work involvement. We expected them to transfer their sense of duty to the workplace later in midlife, as their children left home, and value their later participation in work as an important part of their identity.

In terms of retirement, we expected women high in Conscientiousness to demonstrate a relatively conventional retirement process in their mid-60s, in line with their still-traditional gender-role commitment. That is, we expected them to shift their focus from work to retirement at the culturally expected, dutiful age. Even though this would, overall, give them only a brief period of personal earnings, their financial situation should be assisted by their tendency to choose a partner with an eye for stability and security and to avoid divorce.

Summary: Work Patterns for Extraversion, Conscientiousness, and Openness

We expected women high in Extraversion and Openness to be similar in their strong attraction to work and early success. We expected them to differ in their motivation for work (to interact with people and gain status vs. to learn, create, and self-actualize), as well as in the nature of their work. We expected extraverts to differ from open women and conscientious women in their energy for leadership and social interaction. Open women, we suggest, would differ from extraverted and conscientious women in their creative interests and accomplishments, in less respect for social norms, and in lower financial security in retirement. Conscientiousness should be characterized by a sense of duty and respect for the prevailing sociocultural norms, leading the women in this cohort to put family first and invest in a career later, eventually considering work an important part of their identity.

Overview

As shown in Table 1, we relate scores on Extraversion, Openness, and Conscientiousness obtained when the women were college seniors in the late 1950s to measures relevant to their work lives obtained on five subsequent occasions between age 27 and age 70, organized into three phases of work lives: (a) early, (b) ascending and maintaining, and (c) early and late descending phases. We tested hypotheses about how the three personality traits relate to career trajectories and nature of work in this cohort of women and how the influence of personality changed with the changing sociocultural contexts that accompanied their lives from the 1960s to the 2000s.

Method

Participants

Participants were members of the Mills Longitudinal Study born between 1935 and 1939. This sample consisted of 123 women who were first studied at age 21 when they were college seniors, either in 1958 or 1960, and who subsequently participated in at least one of the subsequent follow-ups, conducted approximately at ages 27, 43, 52, 61, and, most recently, 70. Participation rates during these follow-ups were substantial, averaging 85% for the first four follow-ups. Even at age 70, when a total of 14 women had died, 80% of the women still living provided data. Careful record keeping, extensive recruitment and contacting efforts, and the commitment of the women to this study have contributed to the low rate of attrition. Moreover, multiple analyses have shown no evidence for systematic attrition effects in terms of personality and life outcome variables, with health problems and death by age 70 being the one (expected) exception (e.g., Helson et al., 2009; Helson, Jones, & Kwan, 2002; Helson & Wink, 1992).

Because this research addresses aspects of the women's work lives, we focus on the data from those women who participated substantially in the labor force, that is, women who worked part-time (at least 10 hr/week) or full-time for at least 20 years. These 91 women constitute the work sample and thus the participants for the current research. The sample includes women in a wide range of jobs and work environments, some self-employed in occupations such as studio artist, self-employed accountant, freelance photographer, consultant, or real estate salesperson; others worked for organizations. Like the entire Mills sample, they were primarily Caucasian, reflecting the composition of the student body typical in the late 1950s when the Mills Study was begun. Attrition analyses showed that our work sample did not differ from the larger Mills Longitudinal Study sample on any of the three personality predictors (i.e., Extraversion, Openness, or Conscientiousness) measured at age 21. The analyses reported in this study include data available from all participants in the work sample at any given time of testing, and therefore, sample sizes vary somewhat across analyses.

As shown in Table 1, we used data on personality traits from age 21 as antecedent predictors and data on work involvement, work experiences, and work outcomes from all five follow-up assessments as subsequent dependent variables. The age 21 personality data were obtained in group testing sessions. Work data were obtained by mail at ages 27, 43, 52, and 70. For the age 61 follow-up, the women returned some initial data by mail at age 59 and then came to the Institute of Personality and Social Research (IPSR; Berkley, CA) at age 61 for intensive interviews that included detailed coverage of their work lives.

Sociocultural Background and Age as Shapers of Work Involvement

Most of the Mills women began families in early adulthood, and they devoted much more time to mothering than to any other role because the gender roles now considered traditional were normative in terms of both societal norms and personal expectations. From the 1960s through the 1980s, however, the structure of their lives changed in ways consistent with the societal changes going on during that time (see Figure 1). In 1980–1981, when labor-force participation by women in the United States with school-age children had increased above 60%, the level of involvement in work had become as high for the Mills women (who were then on average 43 years old) as that in mothering (Helson & Moane, 1987). Work involvement continued to increase while involvement in mothering decreased from ages 43 to 52 (Helson & Wink, 1992). From ages 52 to 59, the number of women who described themselves as continuing to build their careers (as opposed to maintaining or reducing their career efforts) decreased, and the number who retired increased (Helson et al., 2006). At age 61, about half of the women who had worked had either retired or were expecting to retire within a few years. By age 70, 36% of the respondents in the work sample were still working full- or part-time for pay.

Antecedent Personality Predictors at 21: Extraversion, Openness, and Conscientiousness

When they were seniors in college (mean age = 21), the Mills women completed the California Psychological Inventory (CPI; Gough, 1957; Gough & Bradley, 1996). The CPI was developed to study personality characteristics that were of basic importance in social life, across cultures. Though its standard scales do not make good contact with the Big Five constructs (McCrae, Costa, & Piedmont, 1993), the CPI item pool is rich and varied and has been used in the construction of many additional scales, such as managerial potential (Gough, 1984), the Haan coping and defending scales (Joffe & Naditch, 1977), and ego-resilience (Klohnen, 1996). Thus, it seemed possible to develop Big Five scales from the CPI item pool.

Soto and John (2009) undertook this task and developed new Big Five domain scales that can be scored from the CPI item pool and show good reliability and validity evidence in large samples of both college students and community adults. More specifically, the CPI Big Five scales have good alpha reliabilities, with alphas for the three CPI domain scales used here, namely, CPI Extraversion, Openness, and Conscientiousness, all exceeding .80 in each of three large samples and averaging .85 overall. Most important, the CPI Big Five scales show low intercorrelations, as well as excellent convergent and discriminant validity, both with Costa and McCrae's (1992) NEO Personality Inventory—Revised (NEO-PI–R) scales and with independent peer ratings (see Soto & John, 2009). For example, in the community replication sample, the convergent validity correlations with the corresponding NEO-PI–R scales were .72 for CPI Conscientiousness, .71 for CPI Openness, and .68 for CPI Extraversion, even though the CPI and NEO-PI–R were administered more than 6 months apart.

As in Soto and John's (2009) samples, the three scales of interest here had good alpha reliabilities in the Mills sample at age 21, with alphas of .85 for Extraversion, .82 for Openness, and .86 for Conscientiousness. The magnitude of the intercorrelations among the three scales was again low, with none of the three intercorrelations even reaching .30, which compares favorably with those found for other Big Five measures (see John et al., 2008). Specifically, Extraversion correlated −.01 with Conscientiousness and −.25 ($p < .05$) with Openness, and Conscientiousness correlated −.28 ($p < .05$) with Openness.[1] We conducted multiple regression analyses for this study to control for any overlap among the three predictors in the prediction of the work outcome variables.

Work Measures: Overview

This study began with the assessment of personality at age 21, before our participants entered the workforce. We followed them from a period when they had little knowledge of the world of work, through a period of maximum work participation, to a period when most of them were retired. Table 1 shows normative themes and major variables in the women's work lives, grouped into the three main periods that we have defined within the Mills Study.

Variables Relevant to Work in Young Adulthood

In view of the emphasis on early marriage and childbearing for women in the early 1960s, we expected relationships between early adult personality and subsequent work to emerge primarily after the women had become more work oriented in early middle age. To test the strength of personality–work links prior to early middle age, we used four broad measures, all obtained at age 27.

Work involvement. At the age 27 follow-up, the women described their work experiences. Their open-ended written responses had been coded in terms of each woman's work involvement since college, using a three-step scale, with 1 indicating little or no work involvement and 3 indicating consistent work involvement (see Pals, 1999; Roberts, 1994).

Satisfaction with work. Pals (1999) also scored work satisfaction from the women's descriptions of their current and past work. The scale ranged from 1 = *Completely unsatisfied* to 7 = *Completely satisfied.*

Graduate education. During their early and mid-20s, women might defer work because they were preparing for later work by attending graduate school or pursuing artistic, musical, or other creative training. The Mills women had been asked to list their activities since age 21 following the open-ended prompt: "What have you done since graduating from Mills?" Two raters coded graduate education using a 3-point scale, with 1 = *No work toward graduate degree,* 2 = *Master's level degree completed or working toward this degree,* or 3 = *Ph.D. or professional degree (e.g., law degree) or working toward this degree.* Cronbach's alpha was substantial (.91).

[1] This pattern of low intercorrelations also held when all 15 possible Big Five scale intercorrelations were considered; none of them reached .30. Agreeableness and Neuroticism correlated −.14 (*ns*), and only two other intercorrelations exceeding $r = .10$ were found: Extraversion correlated −.28 with Agreeableness ($p < .05$), and Neuroticism correlated .27 with Openness ($p < .05$).

Creative accomplishments since college. Using the open-ended descriptions of their activities since college, Helson (1967; see also Helson & Srivastava, 2002) had raters code creative accomplishments using a 7-point scale. Low scores of 1 indicated no creative activities undertaken, and high scores of 7 indicated substantial or outstanding creative accomplishments (e.g., publishing a novel with good reviews).

The Ascending Period

Timing of careers. In the period from young adulthood to the early 40s, when many women increased their amount and status of work, we expected that high scorers on Extraversion and Openness would show earlier career effort and more success than low scorers in these domains. To test this prediction, we used a life-path trajectory variable developed by Helson et al. (1984) on the basis of chronology charts of the women's lives from ages 28 to 43, namely, *early career begun and sustained to age 43,* defined by women who had begun an upwardly mobile career by age 28 and were still continuing this career at age 43. An example of an upwardly mobile career path would be a law degree by age 28, subsequent experience in the field with a well-known mentor, and then an increasing level of responsibility (see Helson et al., 1984).

Sociocultural factors favoring or competing with work involvement. We expected that antecedent personality traits would relate to features of the sociocultural context in ways that would encourage or discourage a woman from work involvement. In particular, women high in Conscientiousness were not expected to show the work orientation ascribed to them in the current literature; instead, they should demonstrate early and continued investment in the roles of wife and mother. Women high in Openness were expected to be open to less traditional role choices.

To test these predictions, we assessed *commitment to wife and mother roles* throughout middle age, which combined traditional role commitments at ages 43 and 52. At age 43, the feminine social clock measure (Helson et al., 1984) captured the extent to which a woman followed the life path expected of women in the 1950s and 1960s: High scorers were women who married, had a child by age 28, and were living with the same partner at age 43 (see Helson et al., 1984). At age 52, a time when many children were leaving home and women were seeking a new balance in their lives, the women rated their investment in the role of wife at age 52 (on a 5-point scale). We standard-scored and then averaged these age 43 and age 52 measures of role commitment. The combined measure across ages 43–52 reflects a continued commitment to the roles of wife and mother maintained throughout middle age and reflects not only traditional role acceptance but also competence because, in that sociocultural context, being married and having a child within an expected time frame took competence as well as conventionality (see Helson et al., 1984).

In terms of nontraditional relationships in this cohort, we scored whether the women had a female partner with whom they lived; this information was available at age 43 when the women listed all persons living in their household and who each person was in relation to them (e.g., child, parent, husband, lover).

Another sociocultural factor was divorce. As shown in Figure 1, the divorce rate increased rapidly over the late 1960s and 1970s and affected women's labor-force participation. We predicted that women high in Conscientiousness should be less likely to get divorced in these years and have less financial need to participate in the labor force at an age when their children were still young. We thus measured *early divorce* by whether a woman had been divorced or not by age 43.

A final sociocultural factor during this time was the women's movement, which encouraged women's participation in the labor force. The women's movement was particularly influential throughout the late 1960s and 1970s. Given their social orientation, we expected extraverted women (vs. introverts) to be particularly attentive to and affected by this important factor in their social climate. At age 43, the women were asked to write about their experiences with the women's movement and how important it had been to them as individuals. Using their open-ended responses, Duncan and Agronick (1995) coded the *importance of the women's movement* using a 3-point scale, where 1 meant *not at all personally meaningful* and 3 meant *very personally meaningful, with a significant impact on the respondent's life.*

Catching up with graduate education in midlife. As illustrated in Figure 1, women's participation in postgraduate education increased greatly after quotas (e.g., in medical and law school) were outlawed and women felt more welcome in graduate programs. We used two variables to test our hypothesis that intellectually interested and curious women (i.e., those high in Openness) would use midlife to catch up with the graduate education they may not have obtained during their 20s. At age 43, the women reported the graduate education they had obtained, using the same three-step scale that was used for age 27: 1 = *No work toward graduate degree,* 2 = *Master's level degree completed or working toward this degree,* or 3 = *Ph.D. or professional degree, or working toward this degree.* At age 52, they reported whether they had obtained any graduate education since age 43; here, we scored whether they had done any work toward (or completed) a doctorate.

The Maintaining Period: Nature and Rewards of Work

For most of the women, the nature of their work, job, or career was best ascertained during the relatively stable maintaining period in their 50s. To test our predictions that women high in Extraversion or high in Openness would select particular kinds of work, we used three kinds of work measures.

Nature of work: Occupational interest codes. Jobs differ in the kinds of interests they allow individuals to pursue, and individuals with different personality traits should choose particular kinds of work or jobs depending on whether the nature of the work matches their interests. Mapping Holland's (1985) six categories of occupations to characteristic interests and values of extraverted and of open individuals, we expected Extraversion to be positively associated with social and enterprising work and negatively with conventional and realistic work. Openness should be associated positively with artistic and investigative work and negatively with conventional and realistic work (e.g., Costa et al., 1984; McCrae, 1996). To score these three pairs of occupational interest categories from the work chosen by the women, we used work-interest codes generated by Helson, Roberts, and Agronick (1995) from the extensive open-ended information the women had provided at age 52 about their work history.

Occupational creativity. To test the expectation that women high in Openness would show more creativity in work than low scorers, we used the Occupational Creativity Scale (Helson, Roberts, & Agronick, 1995). This scale assesses occupational creativity by assigning points according to the kind of work individuals do (Holland, 1985), with added differentiation based on their personal attainment in artistic and investigative fields. The highest score of 5 was assigned to women in artistic or intellectual occupations who had received the highest level of recognition for their contributions (with scores of 4 and 3 indicating lower levels of recognition). For example, a choreographer whose work was favorably and often reviewed would receive a score of 5. A woman employed as a commercial artist would receive a 3. A score of 2 was assigned to jobs that allowed for less creativity, such as social or service-focused work (e.g., teacher, nurse, or sales). A score of 1 was assigned to repetitive, methodical, or conventional jobs such as bookkeeping or bus driving (see Helson, Roberts, & Agronick, 1995).

Working for self (vs. other). The work of individuals also differs in terms of how much the activities are chosen by the individual or imposed by external agents such as a company, employer, or supervisor. Being self-employed is a direct indication that an individual is free to define her work goals and structure her own work activities. Here, we defined working for self not strictly as owning one's own enterprise but to include positions in which the woman was expected to set her own agenda (such as a freelancer, an independent contractor, or university faculty). In contrast, working for others was defined as working for a company, school, or other civic organization to carry out the aims of the organization. We used a dichotomous coding scheme where women who were self-employed or expected to set their own agendas were coded as *working for self* and given a score of 2; women on salaries with prescribed goals and schedules were coded as *working for others* and were given a score of 1. Using detailed information about the women's work at age 52, two raters coded this measure; they showed substantial agreement ($\alpha = .89$), and we used their average rating in our analyses.

Rewards of Work in the Middle Period: Status Level of, and Satisfaction With, Work

To test our predictions that women high in Extraversion or Openness would obtain different kinds of rewards from their work efforts than women low on these traits, we used work status level and satisfaction.

Status level. Helson, Elliott, and Leigh (1989; see also Roberts, 1997) developed a coding scheme for status level of work that could be applied to the work lives of women. A designation of high status usually requires extensive training or education, and the very highest scores reflect considerable autonomy, recognition, and responsibility, whereas low-status work requires minimum skills or training (such as clerical work). At age 52, two judges coded status level from open-ended descriptions of the women's work, prior training or education, and work responsibilities; we used the average status rating of the two judges ($\alpha = .90$).

Satisfaction. The women rated their satisfaction with work at age 43 and at age 52, both times using a 5-point rating scale. (For a review of single-item work-satisfaction scales, see Scarpello & Campbell, 1983; Wanous, Reichers, & Hudy, 1997.) As expected, satisfaction varied somewhat with the woman's particular work situation; the 9-year correlation between work satisfaction at 43 and at 52 was positive and significant but only moderate in size ($r = .34$, $p < .01$). Therefore, we averaged the two measures ($\alpha = .50$) to create a more general index representing work satisfaction across the ascending period.

Work in the Early Descending Period at Age 59

By the late 1990s, the norm of a universal retirement age at age 65 had dissolved considerably, and many factors affected the timing of an individual's retirement. There was no longer a mandatory retirement age, and many options for individual choices had become available, with circumstances different in different kinds and places of work, from early retirement in one's 50s to continued work into one's 70s. Thus, the period between age 59 (when the women completed questions about work involvement) and age 61 (when they were interviewed about factors influencing retirement) showed much heterogeneity, uncertainty, and fluidity in the women's ideas about when to retire. Some women had already retired, others expected to retire soon, and still others expected to work for many more years or thought they might never retire. Many women were reappraising their attitudes toward work in an effort to decide when to retire (Ekerdt & DeViney, 1993). For the early descending period, we used several measures of ongoing interest in and commitment to work, all from questionnaire data obtained at age 59 (about 2 years before the women came to IPSR for interviews).

Importance of work. To assess how much the women who were still working valued their involvement at this time, they were asked to rate the importance of work to their identity on a 5-point scale (1 = *Not at all,* 5 = *Very much*).

Time until expected retirement. To estimate how long the women planned to continue working, they were asked to rate when they would most likely retire, using a 4-point scale (1 = *Next year or so,* 2 = *By age 65,* 3 = *By age 70,* or 4 = *Never or not until I have to*).

Maintaining one's career. This measure was based on questions included in the age 59 questionnaire and contrasts women who were still maintaining a career with those on other career trajectories (most commonly, "reducing career involvement").

Factors Influencing the Transition to Retirement at Age 61

At age 61, the Mills women were interviewed about their current or most recent work, retirement status, and plans for the future. Their interview responses were transcribed from audiotape and then rated on several themes related to work and retirement. One coder rated the interview material for all of the cases on a 3-point scale: 0 = *not mentioned,* 1 = *talked about a little,* and 2 = *very true or much emphasized.* To ensure that these ratings were reliable, a second coder rated the material for a random control sample of 25 cases. Because the correlation of the first coder with the control coder was .80, we used only the ratings by the first coder for our analyses.

We used four variables from these ratings: (a) *Enjoying a leadership position/potential for further advancement* indicated positive aspects of the work setting that encouraged continued work, (b) *having a difficult relationship with one's supervisor* was

negative and discouraged work, (c) *interest in doing other things/ desire to reduce one's workload* involved individual preferences for shifting away from one's current work or career, and (d) *amount of volunteer work*.

Work and Financial Security in the Late Descending Period (Age 70)

By age 70, approximately two thirds of the women had retired. To examine personality-based patterns of ongoing work involvement and financial security, we used three variables.

Ongoing work involvement: Amount of work for pay. At age 70, the women reported how much they worked for pay per week, using a 3-point scale (1 = *Little or no paid work,* 2 = *Part-time,* or 3 = *Full-time*).

How much partner had worked in middle age. We expected that the financial security the women reported toward the end of their active work lives or in retirement would be affected by their partner's contribution. Thus, at age 70, the women were asked to look back and assess how extensively their life partner had actually worked for pay during most of middle age, using a 3-step scale (1 = *Very little or not at all,* 2 = *Part-time,* or 3 = *Full-time*).

Financial security at 70. To assess the security of their overall financial situation, the women evaluated their financial security on a 5-point scale (1 = *Not at all secure,* 5 = *Very secure*).

Analyses

The overall design and temporal structure of the data are summarized in Table 1. We conducted simultaneous regression analyses predicting each dependent variable from all three antecedent personality dimensions (Extraversion, Openness, and Conscientiousness, measured at age 21). Including all three traits in each regression allowed us to identify the independent effects of each antecedent personality variable at age 21 while controlling for the effects of the other two dimensions. That is, if two of the personality domains have significant beta coefficients in the regression analysis, one can conclude that two independent paths lead from these antecedents to the particular outcome variable. For completeness, we also report the simple bivariate correlations, along with the betas, in Tables 2, 3, and 4, given the low intercorrelations among the Big Five predictors, the patterns of results and conclusions were quite similar.[2] The dependent variables are presented in temporal order specified by the three main periods in women's work lives, as shown in Table 1.

Results and Discussion

We examined how the personality domains of Extraversion, Openness, and Conscientiousness, measured in the Mills sample when the women were in college, predicted life outcomes related to work over the subsequent 50 years.

Work Preparation and Involvement in Young Adulthood

Because the Mills sample lived their young adulthood in a social environment strongly differentiated in terms of traditional gender roles, with early marriage and childbearing expected for women (and the breadwinner role expected for men), we thought that personality would show the least relation to work during the young adult period.

As shown in Table 2, we tested this hypothesis with four dependent variables, predicting each from antecedent college-age personality assessed a few years earlier. In early adulthood, there was no indication that women high in Extraversion and high in Openness were more likely to seek employment outside the home or prepare themselves for careers than individuals who were relatively introverted and closed to new experience. Furthermore, in contrast to general trait hypotheses and other studies of working adults, Extraversion was not related to satisfaction with the work the woman had experienced by age 27 ($\beta = .02$), and Openness failed to predict the pursuit of postgraduate education and creative accomplishments after college (both βs = .12).

The Ascending Period: Timing of Careers

During a historical era when few women had careers, extraverted or open women (rather than introverted or closed women) should be among the first to get started on an upwardly mobile career. Indeed, the career-trajectory variable in Table 3, early career begun and sustained to age 43, was predicted by both Extraversion ($\beta = .32$) and Openness ($\beta = .35$), even though these traits had been measured some 20 years earlier.

Sociocultural Factors Favoring or Competing With Work Involvement

Whereas Conscientiousness tends to be the best predictor of work involvement, performance, and persistence in samples of men and younger cohorts of women, Conscientiousness in this study predicted neither of the early career variables; at age 43, the highly conscientious women were no more likely to be working on careers than women low in Conscientiousness. If they were not doing paid work, were there other tasks that the highly conscientious women had chosen as their work? Table 3 shows that college-age Conscientiousness predicted greater commitment to wife and mother roles ($\beta = .23$). This is consistent with the idea that highly conscientious women considered care for their husbands and children to be their foremost duty during this era.

Openness in college related negatively to traditional female role commitments of wife and mother, as shown in Table 3 by the beta of $-.29$. In addition, Openness predicted nontraditional relationships as defined by living with a female partner ($\beta = .29$). These findings are consistent with an openness to new attitudes and new

[2] We also tested whether including Agreeableness and Neuroticism would change our findings. First, as expected in this sample of women working substantially during midlife, Agreeableness and Neuroticism had few significant effects on the variables studied here. Moreover, when Agreeableness and Neuroticism were included in the regression analyses as fourth and fifth predictors, the betas for Conscientiousness, Extraversion, and Openness did not change in any substantive way; in fact, the largest change in beta coefficients was .07, and the mean difference in beta coefficients was .003, indicating that, on average, the effects of Conscientiousness, Extraversion, and Openness were not reduced by the inclusion of Agreeableness and Neuroticism.

Table 2
Work-Related Outcome Variables by Age 27 Predicted From Antecedent Personality Traits Measured at Age 21: Standardized Beta Coefficients From Simultaneous Multiple Regression Analyses and Pearson Product–Moment Correlation Coefficients

	Antecedent personality traits					
	Extraversion at age 21		Openness at age 21		Conscientiousness at age 21	
Outcome variables by age 27	β	*r*	β	*r*	β	*r*
Work involvement	−.19	−.18	−.04	−.02	.12	.12
Satisfaction with work	.02	.03	.01	−.02	.08	.08
Graduate education	.00	−.03	.12	.10	.11	.08
Creative accomplishments since college	.10	.07	.12	.07	.08	.04

ways of doing things and a receptiveness to freedoms and choices that were not part of the traditional definition of women's roles.

In terms of marital stability, Conscientiousness predicted lower likelihood of divorce (β = .25), consistent with the idea that highly conscientious women would maintain stable home environments in this era when a rapidly increasing level of divorce was associated with labor-force participation.

We expected extraverts to be more affected than introverts by social movements and cultural trends, particularly the women's movement, which has been shown in two samples to relate to women's participation in the labor force (Duncan & Agronick, 1995). Table 3 shows that Extraversion predicted how important and impactful the women's movement would be for the Mills participants by age 43 (β = .34).

Catching up with graduate education in midlife. Recall the lack of an Openness effect on pursuit of graduate education by age 27. In the first years after college, the highly open women had not realized or taken systematic steps toward their occupational interests and goals. However, 15 years later, with the culture becoming more favorable toward women's graduate education, the open women should seek and find ways to go back to school in midlife. Indeed, Openness was the only significant predictor of graduate education obtained by age 43 (β = .33) as well as obtaining (or working toward) a doctoral degree after age 43 and before 52 (β = .25). Note that this leaves us with an unusual pattern of findings: Openness measured at age 21 failed to predict educational outcomes 6 years later but succeeded in predicting educational outcomes that took place some 20 and 30 years later.

The Maintaining Period: Nature and Rewards of Work

In the maintaining period, most women were participating in the workforce under relatively stable conditions and had achieved their highest work status. We therefore used this period to test hypotheses about the relation of antecedent personality to aspects of their work.

Nature of work. As shown in Table 3, Extraversion predicted the choice of enterprising and social work in Holland's (1985) scheme, whereas Openness predicted the choice of artistic and investigative work, with effect sizes of .28 and .38, respectively. Both Openness (β = −.41) and Extraversion (β = −.29) predicted a pronounced lack of interest in work that fit Holland's conventional and realistic areas (see Table 3). The negative relationship between Extraversion and conventional or realistic work had not been predicted but may be understood in terms of the extraverts' ambition, as conventional and realistic jobs usually have low status potential.[3]

Openness is associated in the literature with creativity, and our expectation that Openness would be linked to occupational creativity was supported here (β = .49, a substantial effect size especially given that Openness was measured a full 30 years before occupational creativity).[4] Surprisingly, Extraversion also predicted occupational creativity (β = .25), a finding examined further below.

In accordance with hypotheses, women high in Extraversion or high in Openness were significantly more likely to work for themselves (as freelancers, heads of their own enterprise, or in other positions where they could set their own agendas) than to work for others (e.g., in schools, offices, or other institutions), with betas of .29 and .36, respectively.

Rewards of work. We expected Extraversion, Openness, and Conscientiousness to be associated with different patterns of rewards from work, which should be evident by age 52. As shown in Table 3, women high in Extraversion were rewarded by attaining higher status levels in work than women low in Extraversion. Also as predicted, they experienced greater work satisfaction. Follow-up analyses showed that their greater work satisfaction was not simply due to their more rewarding high-status jobs: Even when the effect of work status was statistically controlled, Extraversion still predicted greater work satisfaction (β = .23, $p < .05$).

Unexpectedly, Openness was also related to status level at age 52 (β = .34). We had hypothesized early career starts for women high in Openness and success in creative activity including work, but in the literature, Openness is not generally associated with high status level. In follow-up analyses, we controlled the effect of occupational creativity in the regression predicting status level.

[3] Indeed, when we controlled for work status level (see below), the Extraversion effect disappeared (β = −.15, $p = .16$), whereas the Openness effect remained (β = −.25, $p < .05$).

[4] To test whether the effect of Openness on occupational creativity might simply be due to postcollege education, we conducted follow-up analyses controlling both age 43 and age 52 education variables. Openness continued to predict occupational creativity (β = .34, $p < .01$) above and beyond the significant effect of graduate education completed by age 43 (β = .35, $p < .01$).

Table 3
Work Variables in the Ascending and Maintaining Period Predicted From Antecedent Personality Traits Measured at Age 21

	Antecedent personality traits:					
	Extraversion at age 21		Openness at age 21		Conscientiousness at age 21	
Outcome variables, ages 43–52	β	*r*	β	*r*	β	*r*
Work involvement: timing of careers						
Early career begun and sustained to age 43	.32**	.23*	.35**	.25*	.07	−.03
Sociocultural factors linked to work involvement						
Commitment to wife and mother roles	−.12	−.05	−.29**	−.32**	.23*	.31**
Living with female partner	.09	.02	.29*	.22*	.14	.06
Early divorce	.17	.19	−.06	−.03	−.25*	−.24*
Importance of the women's movement	.34**	.30*	.19	.10	.05	.00
Catching up with graduate education in midlife						
Graduate education by age 43	.14	.05	.33**	.24*	.18	.10
Doctoral work age 43 to age 52	.12	.06	.25*	.23*	−.02	−.09
Nature of work						
Enterprising or social work	.28*	.30**	−.10	−.17	.01	.04
Artistic or investigative work	−.01	−.09	.38**	.36**	.08	−.03
Conventional or realistic work	−.29**	−.19	−.41**	−.31**	−.08	.03
Occupational creativity	.25*	.12	.49**	.42**	.04	−.10
Working for self (vs. other)	.29**	.21	.36**	.31**	−.06	−.15
Rewards of work						
Status level	.40**	.31**	.34**	.23*	.06	−.04
Satisfaction	.34**	.34**	−.01	−.07	−.08	−.07

Note. Beta values are standardized beta coefficients from simultaneous multiple regressions.
* $p < .05$. ** $p < .01$.

The effect for Extraversion remained significant (β = .24, $p < .01$), but the effect for Openness disappeared (β = .05, *ns*). These findings suggest that Openness can lead to high status through creativity.

Conversely, we also tested why Extraversion was unexpectedly related to occupational creativity (see the preceding section, Nature of Work). When we controlled the effect of status level in the regression predicting occupational creativity, Openness still predicted occupational creativity (β = .29, $p < .01$), but Extraversion did not (β = .04, *ns*). Thus, Extraversion seems to contribute to occupational creativity through ambition, assertiveness, and interest in external rewards rather than through the intrinsic interest and cognitive flexibility central to Openness.

In sum, these findings suggest that Extraversion and Openness predict generally distinct outcomes in the work domain and exert their influences on work outcomes through unique processes. However, their joint presence seems to predispose the individual to particularly high levels of achievement in creative occupations.

Work and Retirement in the Descending Period

As the women neared retirement, we considered their attitudes about work, their plans for retirement, and their sense of financial security. The regression results for the descending period are shown in Table 4.

Work in the early descending period at age 59. Because women high in Extraversion should continue to have considerable energy and enjoy the leadership and social opportunities that work affords them, we expected Extraversion to be associated with continued work involvement. When reducing work or retiring, we expected them to engage in volunteer work for the same reasons. We thought women high in Conscientiousness would finally show the work commitment that had been delayed by their earlier focus on family commitments. For women high on Openness, we predicted a relatively early lessening of work commitment if work became less satisfying in some way or if new opportunities and interests opened up.

As shown in Table 4, by age 59, both highly extraverted and highly conscientious women rated work as particularly important to their identity, and both set their expected retirement dates further in the future, with a beta of .50 for Extraversion and .31 for Conscientiousness. Women high in Conscientiousness were more likely than less conscientious women to maintain careers they had undertaken. Women high in Openness were less likely to maintain their careers than women low in Openness.

Factors influencing transition to retirement at age 61. The interview data at age 61 provided a view of how the women were appraising their work and retirement plans. As predicted, extraverts still experienced leadership opportunities and prospects for advancement at work. They were also more likely to be engaged in volunteer work, which can provide an alternative outlet for energy and social needs.[5]

In contrast, Conscientiousness was not associated with the advantages of leadership opportunities and prospects for advancement. Furthermore, women high in Conscientiousness were more

[5] Follow-up analyses determined that the effects of Extraversion on paid work and volunteer work were independent: When controlling for the effect of continuing to work, Extraversion was still related to volunteering (β = .33, $p < .05$); conversely, when controlling for volunteering, Extraversion was still related to continuing paid work (β = .39, $p < .05$).

Table 4
Work, Retirement, and Financial Security in the Descending Period Predicted From Antecedent Personality Traits Measured at Age 21

Outcome variables at ages 59, 61, and 70	Antecedent personality traits					
	Extraversion at age 21		Openness at age 21		Conscientiousness at age 21	
	β	*r*	β	*r*	β	*r*
Work in the early descending period at age 59[a]						
Importance of work to identity	.29*	.25*	.12	−.04	.35**	.31**
Time until expected retirement	.50**	.45**	−.04	−.21	.31*	.24
Maintaining one's career	−.02	.03	−.27*	−.34**	.26*	.34**
Factors influencing transition to retirement at age 61						
Leadership role and potential for advancement	.27*	.22*	.19	.21	−.25*	−.30**
Difficult relationship with supervisor	−.09	−.11	.14	.06	.33**	.29**
Desire to reduce workload, do other things	.10	.04	.29*	.25*	.05	−.03
Amount of volunteer work	.33**	.30*	.20	.11	.11	.06
Work and financial security in the late descending period (age 70)						
Amount of work for pay	.29*	.25*	.19	.20	−.22	−.28*
How much partner had worked in middle age	.17	.15	−.32*	−.40**	.34*	.41**
Financial security	−.06	−.01	−.25*	−.28*	.14	.22*

Note. Beta values are standardized beta coefficients from simultaneous multiple regressions.
[a] For the women not yet retired ($N = 70$).
* $p < .05$. ** $p < .01$.

likely to encounter difficulties in their relationships with supervisors. Perhaps these disadvantages, which we had not anticipated, were related to their relatively late start in the workforce, as they may have been bypassed by a younger generation of supervisors with new and potentially incompatible attitudes.

As predicted, women high on Openness reported that they wanted to reduce their workloads and turn to other things.

Work and financial security in the late descending period (age 70). Consistent with their own expectations at age 59, extraverted women continued to work for pay into their early 70s to a greater degree than introverted women, that is, extraversion in college predicted whether women were still active in the workforce 50 years later.

We had expected conscientious women to select good providers as partners, whereas open women would not select partners with earning ability in mind. Indeed, conscientious women reported their partners had worked a great deal throughout middle age, whereas open women reported that their partners were often not working.

As predicted, women high on Openness reported less financial security at age 70 than women scoring lower on Openness. This is an important finding because it links personality during college to financial concerns at the end of the women's work lives. It is consistent with the other findings during this descending period, including the relatively early disengagement of the open women from their previous careers (though they often took up other work). In addition, the findings in Table 4 also point to social role factors, as the women high in Openness chose partners who did not work as consistently and extensively as the partners of the more gender-traditional women low in Openness.

One would generally expect that the planning and prudence associated with Conscientiousness would pay off in terms of greater financial security in retirement (and the correlation of .22 between Conscientiousness and financial security in Table 4 is consistent with that prediction). However, their particularly late start in the work world, combined with an exit at the conventional retirement time, probably hindered conscientious women in this cohort from achieving as much financial security as theory and literature would predict for them. Nonetheless, the positive association with the partner work variable (β = .34) indicates that they chose their partner prudently. With their partner's financial contribution, the highly conscientious women were certainly not worse off than the women scoring low in Conscientiousness, who did not have the same kind of hardworking partner.

General Discussion

We begin the discussion with our findings about the enduring effects of Extraversion, Openness, and Conscientiousness on the work lives of the women in this sample. However, these personality effects are only one part of our findings and depend importantly on the prevailing sociocultural environment, as we discuss next. Then, we consider issues of personality change and mediation, strengths and limitations of our research design, and directions for future research, and finally describe how the present findings can inform an understanding of women workers today.

Effects of Antecedent Personality Traits: Extraversion, Openness, and Conscientiousness

One important contribution of this article is that we measured Conscientiousness, Extraversion, and Openness as antecedents at age 21 (and thus prior to any work participation) and showed that they were related to major aspects of work lives that emerged over the next 50 years, such as nature of work, satisfaction with work, work status and creative achievement, persistence in work at older

ages, and financial security. Summarized briefly, the women who had been the most extraverted in college subsequently manifested their energetic approach to the social and material world through the early and continued pursuit of work outside the home, the attainment of high-status careers that they maintained beyond traditional retirement age, and a positive attitude toward both their paid work and later volunteer work. The women most open to new experiences in college constructed work lives that were unconventional: They started careers and high-status work early when few other women did. However, they showed less interest in work, status, and financial security than in self-actualization, expressed intellectually (through postgraduate education) and artistically (through creative work). Finally, the most conscientious women in college subsequently showed their commitment to the duties that life presented to them, initially in the context of family and later in work, and they made prudent choices consistent with these commitments, including their choice of a life partner.

In terms of effect sizes, two thirds of these longitudinal prediction effects (see Tables 3 and 4) had betas exceeding .30. For example, Extraversion at age 21 predicted work status attained 3 decades later with a beta of .40, and, at age 61, years expected to continue working before retirement with a beta of .50. Openness at 21 predicted career involvement 2 decades later with a beta of .35 and creative achievement at work 3 decades later with a beta of .49. Conscientiousness at 21 predicted importance of work nearly 40 years later with a beta of .35 and years expected to continue working before retirement with a beta of .31. In short, these personality trait effects were not trivial in size (Funder & Ozer, 1983). These effect sizes are even more notable because the assessments of predictors and outcomes were often separated by several decades and neither predictors nor outcomes were corrected for their imperfect reliability.

One probable reason for these solid effect sizes is that we did not attempt to predict discrete work behaviors but instead studied broader, more general outcomes that matched our broad personality-trait predictors in terms of their level of abstraction (e.g., Barrick & Mount, 2005). For example, outcomes such as high-status work and creative work achievement represent, by age 52, aggregations of work behaviors over many years and thousands of situations (e.g., Epstein, 1980). Even though based on specific instances (i.e., the particular job an individual held at a particular point in time), these broader outcomes are likely to reflect the accumulated effect of the relevant personality traits. For example, how many years an individual expects to continue working during the descending period of work involvement (i.e., when others are already beginning to retire) most likely reflects a multitude of prior and current influences, such as having previously achieved a high-status career that is inherently rewarding and thus worth continuing even after age 60; having plenty of energy and zest for the social interaction and influence required for that job, both in the past and the present; being positive and optimistic about one's health and productivity in the future; and so on. Note that these individual components are probably influenced by Extraversion and that most have taken considerable time to develop, thus allowing the systematic effects of personality traits to accumulate over time.

Effects of the Changing Sociocultural Context

We have demonstrated important links from Extraversion, Openness, and Conscientiousness at age 21 to work-related variables later in life, but personality effects were qualified by the prevailing sociocultural context in which the women constructed their work lives. We had expected that the women's postcollege lives in the early 1960s (see Figure 1) would revolve around finding a partner and starting a family, thus suppressing systematic personality differences in work. Nonetheless, we were surprised to find that none of our personality variables at age 21 predicted any of the work and work-preparation variables at that time (see Table 2). Even progress in graduate school and creative accomplishments showed no relation to college-age Openness.

However, change in gender roles began to accelerate after the 1960s, and we found that personality differences became highly important in how the Mills women subsequently reacted to the work world. This was true for all four variables we considered at age 27. Compare the results for the later years in Table 3 with those for age 27 in Table 2. Work satisfaction at the time of maximum work involvement (age 52) was predicted with a beta of .34 for Extraversion (consistent with research in current samples), compared to the beta of .02 for work satisfaction at age 27. These findings suggest that the link between college-age Extraversion and subsequent work satisfaction changed from the sociocultural context of the early 1960s to that of the late 1980s, when work had become the norm for educated women.

To test this interpretation more explicitly, we conducted a multiple regression analysis and tested whether the Extraversion effect on work satisfaction at age 52 was truly different (i.e., independent) from the earlier effect at age 27. Specifically, we predicted work satisfaction at age 52 from Extraversion at 21 and also controlled for work satisfaction at age 27. Importantly, Extraversion still predicted work satisfaction ($\beta = .24$, $p = .05$).

Similarly, work involvement assessed in terms of careers begun early and sustained at age 43 was predicted with significant betas of .32 from Extraversion and .35 from Openness (see Table 3), compared to the nonsignificant betas of $-.19$ and $-.04$ for work involvement at age 27 (see Table 2). Again, we used regression analyses to test whether the link from Extraversion and Openness to subsequent work involvement had changed over time. Even when controlling for work involvement at age 27, Extraversion at age 21 still predicted an upwardly mobile career at age 43 ($\beta = .30$, $p < .05$). So did Openness ($\beta = .29$, $p < .05$). Again, the nature of the predictive personality effect changed with the sociocultural context of the times.

The link between Openness at age 21 and subsequent graduate school attendance also changed with the times, illustrating how personality differences affected the ways women negotiated their educational progress in a changing culture. Recall that in the early 1960s women were rare in graduate or professional school (see Figure 1) and were often explicitly discouraged from enrolling; many doctoral programs, such as in law and medicine, limited women's enrollment using quotas. Our findings show that, in the first follow-up after college, Openness did not predict work toward a graduate degree (see Table 2), but Openness became associated with level of graduate education by age 43 and even with going back to school for a doctoral degree between ages 43 and 52 (see Table 3). Regression analyses again confirmed that age 21 Open-

ness predicted both of these later education outcomes even when graduate education at age 27 was controlled, with $\beta = .17$ ($p < .05$) for graduate education by age 43 and $\beta = .23$ ($p < .05$) for the doctoral degree by age 52.

Finally, Openness during college failed to predict creative accomplishments by age 27 ($\beta = .12$) but did predict creative achievement in work 30 years later, at age 52 ($\beta = .49$). Again, we asked whether the nature of the Openness effect changed with the sociocultural context from the early 1960s to the 1990s, when women's creative accomplishment was given much greater societal recognition and value. Indeed, Openness at age 21 still predicted occupational creativity at age 52 even when controlling for creative accomplishments by age 27 ($\beta = .36$, $p < .01$). In other words, the effects of the same antecedent trait variable on age 27 outcomes and age 52 outcomes were clearly different. Nonetheless, it is important to note that the age 27 creative accomplishment variable was not simply unreliable or representative of random variance. In fact, creative accomplishments by age 27, though not strongly related to prior Openness, were a good predictor of subsequent creative occupational achievement ($r = .50$, $p < .01$). That is, the women who pursued the performing arts and other artistic interests and talents during their mid-20s were not necessarily the most open in college but may have had the talent or the motivation to persist and thus were more likely to achieve high levels of occupational creativity 30 years later. The finding that both early Openness and creative accomplishments in young adulthood predict subsequent occupational creativity independently should remind researchers to not equate the personality trait of Openness with the concept of creativity or creative accomplishment; instead, Openness is just one of multiple determinants of creative achievement across the life span (Helson & Pals, 2000).

In addition to the emergence of personality–work relationships in women high on Extraversion and Openness in parallel with new cultural values, a second line of evidence for sociocultural effects involved the findings for Conscientiousness, in parallel with traditional values. In current literature, conscientious individuals perform well in the labor force across different types of jobs. In the generation of women studied here, we found that highly conscientious women were strongly committed to the traditional roles of wife and mother throughout the ascending and maintaining periods and that their investment in work came later than one would expect for younger generations. The Conscientiousness effect in the workplace that is typically seen in current cohorts did not emerge until the women were well into their 50s (see Table 4), when conscientious women rated work as more important to their sense of identity than did women lower in Conscientiousness and said that they intended to work longer. At last, they were acting at work as we would expect conscientious women to act today.

Another strength of this research, then, is that we were able to demonstrate how women with different personality traits (e.g., high or low in Openness) adjusted differently within the changing sociocultural context through which they moved. These results provide clear evidence for the view that personality traits are not culture free but are manifested within a particular sociocultural context. Our results are consistent with those of Helson, Stewart, and Ostrove (1995), who compared three cohorts of women, all in their early 40s. In the oldest cohort, personality showed no relation to work status; a majority of women worked at low-level jobs if at all. In the younger cohorts, women who were "Integrated Searchers" (most similar to the combination of high Openness and high Extraversion here) had higher status work than women with other personality patterns. Personality made a difference in the younger cohorts because the culture afforded opportunities for motivations to develop and for traits to be expressed.

Along similar lines, Stewart and Healy (1989) showed that different major social events (e.g., World War II, the women's movement) influenced identity development in young people of different cohorts. Our study demonstrates that the way these social events and other features of one's culture are experienced is linked to personality traits (e.g., as the importance of the women's movement was linked to Extraversion). Openness and Extraversion may tend to be the carriers of innovation and social change and Conscientiousness the carrier of the culture (Helson, Stewart, & Ostrove, 1995), but these roles are probably more evident and important in some cohorts than others.

Early Personality, Personality Change, and Mediating Mechanisms

In our prospective longitudinal design, we assessed the personality trait predictors before the women entered the world of work and thus before their personalities could have been influenced and changed by their work experiences. This was the appropriate design for conceptualizing personality as representing preexisting affective, cognitive, and motivational structures that individuals bring with them to a new environment, situation, or task. Here, we have examined how the effect of personality on work unfolds in interaction with the sociocultural context as individuals construct their particular work lives. As we noted above, these effects of prior personality on work lives are most likely cumulative in nature.

However, by focusing here solely on the effects of early adult personality, we do not mean to suggest that personality change would not occur later. Indeed, our findings include several instances where particular personality traits led to particular life choices, such as the adoption or disavowal of the traditional gender role or the choice of particular kinds of work (e.g., artistic and investigative for Openness and social and enterprising for Extraversion) that, in turn, should lead to subsequent differences in work lives. These choices, we suggest, may well have further augmented the effects of early personality. For example, we found Extraversion to lead to the pursuit of enterprising or social work, and engaging in that kind of work over time could in turn increase skill and confidence in social interaction (e.g., Roberts et al., 2003). Similarly, extraverted women were more influenced by the

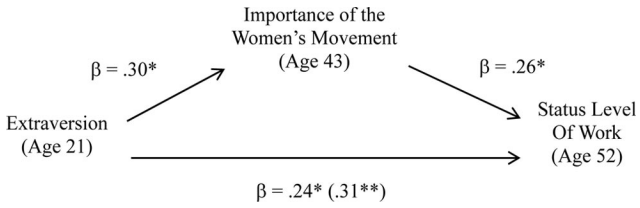

Figure 2. Mediation diagram showing beta coefficients for paths from Extraversion to status level of work, with importance of the women's movement as proposed mediator. The direct path from Extraversion to status level is in parentheses. Sobel $z = 1.66$, $p = .097$. $^{*}p < .05$. $^{**}p < .01$.

women's movement, which encouraged them to pursue work outside the home and helped increase their assertiveness and social confidence—in other words, increased their levels of Extraversion. Such interesting and important personality-change effects are consistent with the person–environment interaction model guiding this research but are outside the scope of the present article.

A further strength of this research is the multiple regression design that enabled us to demonstrate the effect of each trait dimension with the effects of the other two controlled. Testing for independent effects allowed us to clarify patterns and rule out some alternative explanations. For example, we showed that Openness was related to status level only by way of education and creativity and that Extraversion was related to occupational creativity only through status level. Thus, in our sample, eminent creative women were likely to be both open (accounting for their creativity) and extraverted (accounting for their status achievement).

We have studied several important aspects of the sociocultural environment that may mediate the effects of prior personality on the way the women's work lives developed. However, our sample is not large enough to afford strong tests of mediation effects. Nonetheless, the impact of the women's movement provides a particularly interesting issue to consider here. Specifically, the women's movement encouraged women to work outside the home and pursue high-status jobs. Thus, we examined whether the link between Extraversion and subsequent status level of work was mediated by the importance of the women's movement (see Figure 2). As shown in Table 3, women high in Extraversion experienced the women's movement as more important, consistent with their earlier entry into the labor force. Extraversion at age 21 also predicted status attainment at age 52. The mediation model in Figure 2 summarizes these links and posits that the link between Extraversion and status level at age 52 was mediated by the impact of the women's movement at age 43. Indeed, the effect of Extraversion on status level was reduced from .31 ($p < .01$) to .24 ($p = .05$), suggesting partial mediation, and the Sobel test ($z = 1.66$, $p < .10$) also suggested mediation but only at a trend level. Although these findings are promising, they are only suggestive of sociocultural mediation.

Another example is Openness, where we identified several potential mediating factors that over time would be likely to contribute to feelings of financial insecurity at age 70. Women high in Openness were self-oriented in their choice of work, which gave them autonomy but often at the price of good salaries, pensions, and benefits. They sometimes followed their own interests and predilections, rather than staying in well-paid jobs, especially when the work was not creative. Furthermore, they tended to choose partners who were not good earners: They were less likely to work full-time than partners of women low in Openness, and in several cases, their careless or reckless dealings with money brought hardship on the household. In addition, open women were more likely to live with female partners, and women usually earned less than men.

However, the demonstration of mediators is complicated as none of the factors just mentioned, for example, would alone account for the financial insecurity experienced by the highly open women during the descending period of their work lives. Future research with a larger sample and a focus on specific mediating variables may be able to test specific causal connections between prior personality traits and particular work experiences and outcomes.

The current findings already point to several promising candidates for mediating mechanisms that involve person–environment interactions (e.g., Buss, 2009; Caspi & Bem, 1990). All three trait dimensions showed effects that we expect are due to environmental selection: Antecedent levels of Conscientiousness, Extraversion, and Openness affected whether the woman initially chose to stay at home or work outside the home, the kind of job or career she chose, and the amount and kind of postgraduate education she sought. We also expect situation modification and evocation effects to be important; for example, the link between Extraversion and attaining high-status jobs is likely to involve the use of social contacts, networking, and influence strategies to improve one's situation in the work environment. In addition, within a particular work environment, construal (or appraisal) effects can still change the nature of one's work experience. For example, at the time of maximum work involvement, both extraverted and open women held relatively high-status jobs, yet only the extraverts were particularly satisfied with their work (even when independently coded work status was controlled), whereas the open women (compared to women low in Openness) were not. Explicating the processes that mediate the link between trait dimensions and work lives will be an important agenda for future research.

Limitations and Future Directions

This research has some important limitations. First of all, we have focused on broad personality traits, but we hasten to acknowledge that there is more to personality than broad traits at the level of the Big Five dimensions. Finer distinctions among lower level facet traits below the broad Big Five (e.g., Costa & McCrae, 1992; Saucier & Ostendorf, 1999) would add to an understanding of personality and work lives. Moreover, there are many other kinds of personality variables or adaptations that can influence the way individuals construct lives at work, including social-cognitive and motivational factors such as goals and values, as well as developmental and narrative variables (e.g., McAdams, 2008; Vandewater, Ostrove, & Stewart, 1997).

The influence of such nontrait variables becomes apparent in work differences even among individuals who have similar trait scores. For example, four of the five women with the highest age 21 scores on Openness were in professions with relatively high scores on occupational creativity at age 52, consistent with our overall finding. The woman with the highest Openness score of all was different: She was a bookkeeper, not high in occupational creativity. But her life-history materials revealed that she had long-term relationships with a series of three particularly creative men. In this article, we cannot address the factors that would make this highly open woman different in how she expressed her Openness in terms of her work, goals, identity, and life story (McAdams, 2001), but we wish to acknowledge the existence of such differences and the need for future research to study and explain them. In other words, the field needs more research that simultaneously studies trait as well as other kinds of personality variables and thus holds promise for future integration across levels of analysis in personality (e.g., Winter, John, Stewart, Klohnen, & Duncan, 1998).

In terms of participants, we have studied a relatively small, well-educated sample—women attending college in the late 1950s—which limits generalizability but enabled us to begin to document the work lives that women with particular personality traits and some access to resources could construct over 50 years as the mainstream culture changed. In some ways, the lives the Mills women actually lived anticipated future trends, making them more representative of newer generations of women than of older generations of the past. They expected on average to have four children, to marry and stay married to the same partner, and to not focus on work; instead, just like women in the United States today, they had only two children, half of the women divorced, and most ended up participating in the workforce. Nonetheless, future studies should examine other cohorts of women and include individuals of more varied ethnic and economic backgrounds than was possible here.

We can also ask what the current findings tell us about today's women workers. Women in the United States today expect to work and support themselves and have a wider range of educational opportunities and perceived career paths open to them than did the Mills women when they were young adults. However, today's women continue to navigate multiple, substantial role involvements. They continue to face the prospect of exiting and reentering the workforce over time, as a considerable percentage of women leave the labor force to care for young children (e.g., Phillips & Imhoff, 1997; Wolfinger, Mason, & Goulden, 2008). The concept of family duty is still accepted by many women, with complicated tradeoffs between family, career, and care giving. Gender-role commitments illustrated in the Mills sample may still be relevant for today's women.

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