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## The road not taken: Women's life paths and gender-linked personality traits

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## ABSTRACT

Key studies have established an association between women's social roles and their midlife personalities. The current research expands our understanding by examining personality traits in midlife women who followed normative or non-normative life paths. The normative/non-normative distinction was based on two kinds of social roles that college-educated women undertook until midlife: work and family. Gender-linked personality traits were compared between (1) women in high status professions and women in moderate status professions; (2) women without children and women with children; and (3) single mothers and married mothers. Composite measures of gender linked traits, based on expert-identified Q-sort items, were used. Each non-normative social role group exhibited a different pattern of gender-linked personality traits inconsistent with conventional female gender roles.

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## 1. Introduction

In the last 30 years, several studies have documented an association between women's midlife personalities and different patterns of commitment to work and family (e.g., Helson, Mitchell, & Moane, 1984; Roberts, 1997; Van Aken, Denissen, Brantje, Dubas, & Goossens, 2006; Vandewater & Stewart, 1997). In the earliest and most influential work, Helson et al. (1984) found that different personality traits were associated with pursuit of social clock projects that are related to gender roles linked to life course timing, or social clocks: the masculine occupational clock (pursuit of a career with a hierarchical ladder requiring early adult commitment and consistent pursuit over adulthood) or the feminine family clock (according to which women both married and had children in early adulthood). Early motherhood (or the feminine family clock) was associated with increases in responsibility, self-control and tolerance, and decreases in self-confidence and sociability between age 22 and age 27. Helson and her colleagues also found that women who pursued the masculine occupational clock (and not the family clock) through adulthood (from ages 28 to 42) differed from those who began but did not persist on it, in terms of many personality traits, including dominance, independence, and sociability. In a similar vein, Vandewater and Stewart (1997), Vandewater and Stewart (1998) examined commitment to social clock projects in a somewhat younger sample of college-educated women, but considered separately the groups of women who pursued either social

clock project (masculine or feminine) exclusively or in different combinations simultaneously and over time. Findings from both studies were consistent with the notion that personality can change and develop in association with the changing social clock projects women undertake, and with the idea that personality traits may also be related to when and whether women pursue particular roles.

Personality characteristics have also been associated with expectations about how the assumption of normative roles – such as wife, mother, and working woman – can change with age (Costa, Terracciano, & McCrae, 2001; Duncan & Agronick, 1995; James & Zarrett, 2006; Lodi-Smith & Roberts, 2007; Neugarten, Moore, & Lowe, 1965/1996; Newton & Stewart, 2010; Rantanen, Pulkkinen, & Kinnunen, 2005; Vandewater & Stewart, 1998; Wood & Roberts, 2006). In the current study, we build on this earlier research: we also examine the relationship between family and/or work commitments and women's midlife personalities. However, we focus on the relationship between women's midlife personality traits and their adoption of *non-normative social roles* in the course of their adult life path.

How do we know whether an individual has adopted a non-normative social role? Norms are rules of behavior that customarily coordinate our contact with others, and provide shared structures for behavior within a given social group (Young, 2008). Thus, what is seen as normative results from implicit and/or explicit expectations, specifically through the prescription of rules or codes for values, beliefs, attitudes, and behavior. Norms can evolve through time as well as between cultures, social classes, and generations; that is, what may be acceptable or sanctioned behavior for a certain generation may not be acceptable for earlier or later generations. For example, cohabitation of unmarried men and women

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may be uncommon in one generation, common as a stage before marriage in another, and accepted as a life choice in a third.

By definition, a non-normative social role is one that does not conform to societal ideas of expected behavior. These norms are defined by the historical contexts of a given generation's childhood and young adult lives. The women we studied were born during or shortly after World War II, and raised in the postwar era; a time of pressure to conform to clearly differentiated gender roles and family values, emphasizing men's roles as workers and providers, and women's roles as wives and mothers. The Women's Movement, arising when these women were already young adults, provided new ideas about the social roles women should occupy, as well as altered expectations for how they should behave within those roles (Goldin, 2006; Stewart, 1994). Thus, women who came of age during the 1960s and 1970s, as our sample did, were influenced both by strongly gendered values concerning social roles of the 1950s, as well as challenges to these values in the following decades, making this generation a "transitional cohort" in terms of social roles. Indeed, Hulbert & Schuster define this period as "the era of transition" in their study of college educated women over time (1993, p. 22ff). They comment that "For women who attended college during this era, the choice of a nontraditional career path posed a range of potential conflicts" (p. 22), including unconventional lifestyle, few role models, husbands who did not expect to have wives with demanding careers, and the need to "be different from one's peer group, both during college and in adult life" (p. 23). They classified the sample under study as part of this generation or cohort, rather than the earlier "vanguard" era women educated before and during World War II or the women educated in the postwar "era of limitations" in terms of women's gender-role expectations (see also the discussion of this sample's historical location in Stewart & Vandewater, 1993).

The college-educated women in the present research were expected to marry for life, have children, and also to have a career or work life (at least for part of their adult lives), but one that was gender-congruent and could be interrupted by childbearing and childrearing (such as nursing or teaching). Some women in this cohort—and in all cohorts—did not do what was expected. Some never had children, some married and had children but divorced and remained single mothers for a long time, and some pursued careers that were viewed when they were young as "men's jobs." We aim to understand whether these women—who pursued three different kinds of non-normative adult lives—also had personality traits in middle age that are inconsistent with conventional gender expectations. With the data we have, we cannot establish whether they had these traits before their adult lives unfolded, or their adult life experiences shaped these traits, or both. We can, though, establish whether there is an association between adopting adult roles that are unconventional for women and having unconventional gender-related personality traits in middle age. Thus, we focus on the relationship between the particular non-normative life paths that some of the women of this generation followed and their subsequent personality traits.

## 2. Gendered social roles and norms

According to social role theory, the social roles men and women occupy lead us to have expectations about their personality characteristics (Diekmann & Eagly, 2008; Eagly & Mitchell, 2004; Eagly & Sczesny, 2009). Thus, societal stereotypes cast women as occupying the role of mother and nurturer, and it is expected that they will have traits that are connected with nurturance (compassion, kindness, consideration, etc.). Role congruity theory points out that internalizing and conforming to social roles yields societal rewards, such as approval, whereas deviating from these roles incurs

punishment, such as disapproval (Diekmann & Goodfriend, 2006). Ultimately, gender roles and stereotypes influence expectations for women's personality attributes, often most pronounced in the work place (Ridgeway, 1997): women are expected to be more communal and relational than men because their family roles as wives and mothers require them to be supportive and nurturant. Equally, people are socialized to expect that men (being agentic) are generally and uniformly competent and have mechanical skill (Correll & Ridgeway, 2003; Ridgeway & Bourg, 2004). Moreover, people who deviate from these expectations are often viewed as inadequate, incompetent, or deficient in some way (Cuddy, Fiske, & Glick, 2004; Parry, 2005; Zucker, 1999).

Non-normative gender roles are specifically defined in this study as those that lack congruence with the gender norms that women were expected to adopt within a particular generation and social group. We study three groups of college-educated women within the generation of women who came of age in the 1960s; those who: (1) followed careers in high status professions; (2) did not have children; or (3) had children but were divorced relatively young, and did not remarry (defined here as single mothers). Women in this cohort who engaged in these three particular non-normative life paths are expected to differ in terms of their personality traits from women who engaged in life paths that involved more normative roles. We expect that women who pursued non-normative life paths will have traits that are also inconsistent with gender roles but in particular ways that fit the specific roles they have adopted in the course of their life paths.

## 3. Non-normative life paths for this particular cohort

There is no doubt that pursuing a profession in which men predominate, not having children, and being a single mother for an extended period of time were non-normative life-paths for women in this cohort. The first path entailed adopting a role that was viewed as more suitable for men, the second not enacting the key social role allocated to women (nurturer of children), and the third playing both of the gendered parental roles (provider and nurturer) in the family.

College-educated women of the cohort that graduated in the 1960s and 1970s faced a limited number of socially acceptable options for careers. The number of women in the workforce steadily increased in the period from 1950 to 1970 when this cohort was growing up (from 25% to 46% of married women 35–44; Goldin 2006); during this period many women worked part time and took substantial time out of the labor force, so family roles significantly constrained their labor force activity. For example, women born between 1941 and 1950 worked in the paid labor force for about 55% of the time during adulthood (Goldin, 2006). Moreover, persistent sex segregation and discrimination in the workplace characterized their experience in the workforce, whether they had relatively low or high-status jobs (Reskin, 1993), though in fact they were overwhelmingly pursuing lower-status positions (see Fig. 8 in Goldin, 2006) even if they were college-educated. In a study of women pursuing one kind of high-status career, Noonan, Corcoran, and Courant (2008) found that among law school graduates from the 1970s and 1980s, men continued to "make partner" at a higher rate than women. Negative stereotypes of women who violate workplace gender norms by following a predominantly male profession also persist; such women are often punished through performance devaluation, denial of credit for success, or penalized for proven competence through co-workers' personal derogation ("ice queen") or the perception that they are less likeable (Brescoll & Uhlmann, 2008; Cuddy et al., 2004; Heilman, 2001; Heilman & Okimoto, 2007).

In the same way, although women of this cohort who did not have children faced less critical reactions than did women of previous generations, they still faced disapproval (Koropecjy-Cox, Pienta, & Brown, 2007; Letherby, 2002; Zucker, 1999). The huge numbers of babies born during the Baby Boom re-set the bar for expectations of childbearing. However, a sizable portion of Baby Boomers did not have children: Census Bureau statistics show that among women from the relevant cohort, approximately 20% of women aged 40–44 were childless during the period between 1998 and 2004 (United States Census Bureau, 2012), although these figures represent both involuntary and voluntary childlessness, which may have different implications for personality. Moreover, some childlessness is difficult to classify; it may arise when a person discovers it is “too late,” without having consciously chosen not to have children (Chodorow, 2003). Whether childless by choice or circumstance, women without children remain in the minority.

Similarly, marital norms have both changed and remained the same during the period of this cohort's adulthood: Though marriage remains normative for women today, women of this cohort were more likely to marry than those in later cohorts; moreover, they married at a younger age, on average, and they were less likely to divorce. Of married women born in 1945, only 29% had divorced by the age of 35 (Schoen, Urton, Woodrow, & Baj, 1985); of those women who divorced, approximately 73–76% remarried, after an average of 2 years of divorce and at a mean age of 37. Thus, divorce itself was not as common for this generation as it became later and most divorcees remarried quickly; women of this generation who divorced and did not remarry in a short period are a very small minority.

As we consider the personality correlates of these particular non-normative social roles – high status profession, remaining childless, or long-term divorced (i.e., single) mother – we also note that although these three non-normative roles are pertinent both to social role theory and to the cohort under study, some women followed other non-normative life paths. Some never married, some were lesbians, some engaged in serial divorce and remarriage, with or without children. Although important and interesting, these particular roles are not examined here.

#### 4. Personality and non-normative life paths

A limited amount of extant research supports the notion of an association between adopting social roles that are outside the boundaries of conventional gender norms and gender-linked personality traits. Although they studied an earlier cohort of women than examined in the present study, Helson and colleagues provided much of the early work in this area. For instance, Helson et al. (1984) described women who continued into midlife on the masculine occupational clock (MOC) as being confident, intellectually independent, and forceful. Helson and Picano (1990) also acknowledged the influence of life course context when they observed that: “. . . women low in traditionality may [suffer] from being less in synchrony with the social clock” (p. 311). Similarly, Tangri (1972) found that young women who were Role Innovators in terms of their careers saw themselves as unconventional in personality more than women who had chosen gender-congruent careers (Traditionals) did. Unconventional family role experiences are also associated with non-normative beliefs, values and traits. Bram (1984) found that childless women were less ‘traditional’ in their sex role attitudes, and divorced women reportedly hold non-traditional gender ideologies, are more liberal and have an active commitment to feminist identities (Davis & Greenstein, 2004; Fahs, 2007; Stewart, Copeland, Chester, Malley, & Barenbaum, 1997).

#### 5. Measuring personality using Q-sort-based methods

Unfortunately, the disparate prior studies have not used common indicators of personality characteristics in their research. However, like Helson and colleagues, we use the California Q-sort (CAQ; Block, 1961; Block, 1971; Block, 2008). It is available for both samples in the current study, and provides rich observer reports of a broad range of personality items (see Section 6 for a full description), and can be used to produce ratings of a common set of personality items with pre-existing datasets. Of course this requires adequate material in the dataset for observers to form judgments about personality, but generally large longitudinal studies do have that kind of material.

Because the Q-sort method is flexible, different researchers have used it in different ways. Some have used the items to develop prototypes or scales through various methods. For example, Block and colleagues obtained a hypothetical description of optimal psychological adjustment from nine experienced clinical psychologists that formed a composite against which the individual Q-sorts were compared (Siegelman, Block, Block, & von der Lippe, 1970). Other researchers have used Block's method in studies examining psychological adjustment and identity (e.g., Helson, 1992; Helson, Stewart, & Ostrove, 1995; Mallory, 1989), as well as experts' ratings of Q-sort items to study creativity and wisdom (Helson & Srivastava, 2002); generativity (Peterson, 2002; Peterson & Klohnen, 1995); narcissism (Wink, 1991; Wink, 1992a); and four broad personality typologies (York & John, 1992). Some have also validated Q-sort measures against well-known and widely-used inventories, such as the California Psychological Inventory (CPI; Gough, 1987), the Adjective Check List (ACL; Gough & Heilbrun, 1983), the Myers-Briggs Type Indicator (Myers & McCaulley, 1985), and the Minnesota Multiphasic Personality Index (MMPI; Hathaway & McKinley, 1940). The authors of the present study use Block's method in a unique way: to identify items associated with conventional “masculinity” and “femininity,” and to conduct comparisons using them at both the item and scale levels.

We begin by creating two scales based on those items that assess personality traits conventionally associated with male gender roles or with female gender roles. Because these scales inevitably combine items that are only linked by their association with gender, we then identify how the groups of women we are studying differ on particular items within those scales.

##### 5.1. Plan of analysis

Our first goal is to develop scales that assess traits associated with conventional gender roles using expert ratings of Q-sort items, and perform three comparisons of non-normative groups of women with their normative counterparts using separate ANCOVAs. We further analyze the gendered items that make up these scales, using a resampling-based false discovery rate (FDR) technique appropriate to analyzing large numbers of items that are, like Q-sort ratings (which are forced into a normal distribution), not independent of each other.

##### 5.2. Hypotheses

Each group of women who followed a particular non-normative life path was compared with women who followed a relevant normative life path, with specific hypotheses tested for each comparison. We hypothesize that each group of non-normative life path women will be higher than their normative counterparts in gender norm-inconsistent personality traits, as measured by two scales developed by the authors of the current study, based on experts' categorizations of items from the California Q-sort (CAQ; Block,

1961; Block, 1971; Block, 2008): a scale assessing traits associated with male gender role expectations, and a scale assessing traits associated with female gender role expectations. In particular, we expected that lack of fit with female gender roles would be indicated by low scores on the “conventional femininity” scale, which consists of items such as “Behaves in a sympathetic or considerate manner,” or high scores on the “conventional masculinity” scale, which consists of items such as “Values own independence and autonomy.” We also expected that the lack of fit with female gender roles would be reflected at the *item* level of analysis. Furthermore, we expected that following a particular non-normative life path would be associated with a pattern of traits unique to each specific life path, depending on the nature of the roles that composed the path. In order to more accurately assess the association between particular life path and personality, participants could only be members of one non-normative group; to be extra certain of this membership, possibly overlapping variables (such as marriage and children for those in high status professions) were used as covariates where appropriate. For all comparisons, conventionally feminine and conventionally masculine traits are treated as related but separate constructs; that is – for example – low femininity does not necessarily imply high masculinity.

- Comparison 1 examines the personality traits of women who differ in their roles in the public sphere. In order to sharpen our comparison, we limit the sample to women who have professional careers of some kind, and only compare those pursuing careers that were not viewed as appropriate for women in this cohort to those pursuing careers that were viewed as appropriate for women in this cohort. Although both high and medium status careers require credentialing education and full-time and long-term commitment, high status occupations offer more opportunity for the accumulation of prestige, status, and resources than do moderate status occupations. Moreover, because men predominated in these careers when this cohort was forming expectations for themselves and about the world, we anticipate that women who have pursued these careers will have traits conventionally associated with men. However, because many members of both groups of women (women pursuing high status and moderate status careers) married and had children, we do not expect differences on traits conventionally associated with women's roles.
- Comparison 2 examines personality in the private sphere, comparing personality differences between women who did not have children and women who have children. Not having children was a particularly strong deviation from female gender norms for this generation, which was under very strong pressure to produce children (see Russo on “the motherhood mandate,” 1976). Therefore, we expect women who did not have children to score comparatively low on conventionally feminine traits. It is unclear what to expect about conventionally masculine traits, which do not appear to be directly implicated by women's lack of adoption of the motherhood role.
- Like comparison 2, comparison 3 examines personality in the private sphere, but in this case, assesses differences between long-term single mothers and married mothers. Both of these groups of women took on the most central role prescribed for women of this generation: motherhood. However, single motherhood differs from co-parenting in that it requires women to meet not only the conventional role demands of mothers, but also those of fathers. Additionally, remaining as a single mother reflects a family situation in which the woman does not enact the conventional feminine role of wife. Therefore, we hypothesize that long-term single mothers (mothers who remained divorced for at least 10 years) will score lower than married mothers (mothers who had remained married to the same

man) on conventionally feminine traits, and they may also be higher on conventionally masculine traits. However, because both groups of women include working mothers, and both groups married at some point, we expect fewer differences overall than in the comparison of women with and without children.

## 6. Method

### 6.1. Participants

For all three comparisons, data were drawn from college-educated women from a transitional cohort with respect to gender norms; that is, they were born during or just after World War II, and spent their childhood in a time of “traditional” or old-fashioned gender roles, but were young adults in the United States during the 1960s, a time when the Women's Movement came to the fore (Duncan & Agronick, 1995; Stewart & Healy, 1989; Stewart & Vandewater, 1993). The final sample of women with complete data (those with social role data as well as Q-sort data) comprised two sub-samples of women who were of the same generation, and thus affected by this same historical period: the Radcliffe College Class of 1964 ( $N = 62$  or 32% of the combined sample), and the Women's Life Paths Study (WLPS), women who graduated from the University of Michigan between 1967 and 1973 ( $N = 132$  or 68% of the combined sample). By combining these samples we were able to define large enough groups of women in non-overlapping non-normative groups: high status professions ( $N = 55$ ), long-term single mothers ( $N = 18$ ), and women without children ( $N = 32$ ) to compare with the inevitably larger groups of women who followed more normative paths.

Women of the Radcliffe College Class of 1964 have been studied since they were first-year students in 1960 (see Stewart, 1978, and Stewart & Vandewater, 1993, for fuller descriptions of the original sample). The women were (on average) 53 at the time of data collection. WLPS women graduated from college slightly later than the Radcliffe sample and have been followed since 1967 (Tangri, 1972). Approximately 33% of the WLPS sample is African American, whereas virtually all of the Radcliffe graduates are White; African American women comprise 23% ( $N = 45$ ) of the combined and final sample used in the current study. The WLPS sample of women was (on average) 45 at the time of data collection. These women were generally slightly younger than Radcliffe women, partly because they graduated a little later (1967 vs. 1964 for the White women, and even later for the African American women, who were sampled across several classes because of the low diversity of earlier classes—1967–1973), and the follow-up was earlier (1992 vs. 1996). Further details regarding the sample are discussed in Cole and Stewart (1996), and Tangri and Jenkins (1986). Analyses conducted on basic demographic data (age, marital status, children, income, hours worked) showed that Radcliffe women differed from WLPS women only on race (already described) and age. Both samples are dispersed throughout the United States and even in other countries as middle-aged women. Not surprisingly, given the location of their college institutions, the largest group of the Radcliffe women (49%) resided in middle age in the Northeast region of the US, whereas the largest group of the WLPS women (48%) resided in middle age in the Midwest. See Table 1 for further information concerning the sub-samples (Radcliffe vs. WLPS), race and non-normative group.

### 6.2. Comparison groups

Baseline data for creating the life path groups were taken from earlier waves of data collection. For women in the Radcliffe sample, 1986 data were used to determine their placement into each non-

**Table 1**  
Means (and standard deviations) and frequencies of demographics and gendered personality traits scales by comparison groups.

	Normative/non-normative comparison					
	Profession		Children		Marriage and children	
	High status (N = 55)	Moderate status (N = 120)	No (N = 32)	Yes (N = 158)	Single mothers (N = 18)	Married mothers (N = 57)
<i>Sample</i>						
Radcliffe (N)	24	29	9	51	9	12
WLPS (N)	31	91	23	107	9	45
<i>Race</i>						
Afr. Am (N)	4	36	9	34	7	9
White (N)	51	84	23	124	11	48
<i>Age</i>						
Household income (Z-scored)	48.72 (4.41)	47.00 (4.29)	47.26 (4.41)	47.72 (4.41)	49.33 (4.31)	46.88 (4.05)
Hours worked per week	0.83 (0.65)	-0.20 (0.94)	-0.45 (0.84)	0.18 (0.97)	-1.02 (0.68)	0.50 (0.83)
<i>Highest degree</i>						
Doctorate	38.32 (21.31)	35.14 (16.73)	42.50 (14.26)	36.11 (18.63)	40.56 (15.67)	34.41 (20.12)
Master	69%	16%	38%	34%	25%	35%
Bachelor	23%	74%	56%	55%	50%	54%
	8%	10%	6%	11%	25%	11%
<i>Marital status</i>						
Married	72%	68%	32%	78%	-	-
Not married	28%	32%	68%	22%	-	-
<i>Children</i>						
Yes	82%	82%	-	-	-	-
No	18%	18%	-	-	-	-
<i>Gendered personality trait scales</i>						
Feminine traits	5.56 (0.73)	5.54 (0.80)	4.82 (0.96)	5.64 (0.71)	5.61 (0.64)	5.94 (0.65)
Masculine traits	6.34 (0.73)	5.96 (0.82)	6.52 (0.86)	6.03 (0.79)	5.91 (0.83)	5.86 (0.82)

Note: Ns for subsample: Radcliffe, total subsample N = 62; WLPS, total subsample N = 132.

Ns for race: African American women, N = 45; White women N = 149.

Ns differ by comparison, depending on available data, removal of lower status occupations, and mothers married multiple times.

normative group; these data included marital history as well as education, work, and family data since the last data collection (1979). For women in the WLPS sample, similar life history data collected in 1992 were used.

#### 6.2.1. Comparison 1: Women in high status professions vs. women in moderate status professions

Membership in the relevant profession group was based on Hollingshead and Redlich's (1958) occupational classification scheme combined with level of education. High status professions were identified from Hollingshead and Redlich's category for "executives and major professionals" (p. 390), and 55 women fell into this category. Most of these women had also gained a doctoral-level professional degree (PhD, EdD, MD, or JD), because those degrees were necessary for the pursuit and attainment of such a job (as a doctor, attorney, or professor), in contrast with the pursuit and attainment of a moderate status profession (as a nurse, social worker or secondary school teacher). Additionally, five women who did not have doctoral-level degrees were included in this group because they occupied executive positions in the business sector, such as Vice President or Director, or owned their own company. Most of the women in the high status category, then, were physicians, full professors, or lawyers, and in one case, a judge. Additionally, most high status professional women were White.

One hundred and twenty women were classified as working in moderate status professions; they were categorized within Hollingshead and Redlich's "minor professionals" group and had also received a master's degree, e.g., high school teacher or social worker. Twelve women in this group held bachelor's degrees, and eighteen held doctoral level degrees; these women were included in this group because they were either working fulltime as teachers or nurses (in the case of bachelor's degree holders), or were not

using their doctoral degree by working only part-time and/or in an unrelated field (e.g., part-time librarian or self-employed artist). Women pursuing these professions took on life-long careers with fewer opportunities for advancement, high status, or the high salaries associated with high status professions; professions that were also normative for college-educated women of this generation. Women pursuing all other occupations, such as administrative, clerical, or sales positions, were excluded from analysis, as these occupations did not require a master's degree.

#### 6.2.2. Comparison 2: Women without children vs. women with children

Data regarding whether women did or did not have children (biological or adopted) were gathered in 1996 (Radcliffe) and 1992 (WLPS). Data were taken from the 1990s when the women were in their late 40s and early 50s, an age at which deciding to have or raise a child is usually past. Overall, there were 32 women who did not have children and 158 women who did.

#### 6.2.3. Comparison 3: Single mothers vs. married mothers

Women were defined as single mothers if they had children, but were single (had been divorced and not remarried for at least 10 years) at the time Q-sort data were collected. For both samples, marriage and divorce data were combined with data concerning the presence of children to form the non-normative group of single mothers, of whom there were eighteen. Single mothers were compared with a subgroup of married mothers: those who had children and had remained married to the same man throughout the entire period (N = 57).

Demographic data for each normative/non-normative comparison are presented in Table 1. Both women in high status professions and single mothers were a little older than their

counterparts. Women in high status professions, women with children, and married mothers all had higher household incomes than their relative comparison groups; women without children tended to work more hours per week than women who had children. Women in high status professions were (of course) more likely to have doctoral degrees than women in moderate status professions (who more often had master's degrees). A higher proportion of women without children were not married: 68% of women without children were not married, compared to 22% of women who had children (see Table 1). Due to the differences outlined above, all analyses at the scale level controlled for race, subsample (Radcliffe or WLPS), age, household income, hours worked per week, education level, and marital status (where appropriate).

### 6.3. Measures

#### 6.3.1. California Adult Q-sort (CAQ)

In all three comparisons, personality was measured using ratings on the California Q-sort (CAQ; Block, 1961; Block, 1971; Block, 2008), which consists of 100 personality descriptors that are sorted in terms of their ability to capture the target's personality into nine categories ranging from extremely uncharacteristic (1) to extremely characteristic (9). Trained observers sort descriptors into a forced normal distribution, with a strict number of descriptors for each category: 5, 8, 12, 16, 18, 16, 12, 8, and 5, respectively. In the present research, three independent raters used approximately twenty pages of open-ended responses to questions concerning year-by-year activities, high points and low points, relationships, family, work experiences, reflections about past choices, and aspirations provided by each woman, as a basis on which to sort the 100 Q-sort items. Approximately 95 responses to open-ended questions were reviewed by the sorters for each participant. Open-ended prompts included: "Looking back over the last 7 years, what do you consider major high points, or the most satisfying activities? Please include as many things and as much detail as you can," "If you could do anything you wanted in the next 10 years, what would it be?" or "Any regrets?" Sample responses to questions are documented in Appendix A.

Reading a file of many responses to questions like these served as sorters' "observations" of participants; based on their reading, they rated the woman's personality characteristics in terms of the ipsative profile described above. Thus, while all 100 items were rated for every individual, they were rated in terms of their descriptiveness for each person in comparison with every other item, rather than in comparison with other people.

The Q-sorts themselves were completed in 1997 for the Radcliffe sample, and in 2001 for the WLPS sample. In both cases, sorters did not have access to other data used in the present study, such as demographic or personality data. Although sorters might have been able to deduce some life facts from responses to open-ended questions, they were focused on identifying personality characteristics and were instructed to pay attention to feelings, events, and how these were expressed, in order to formulate a personality profile of the participant. Additionally, sorters were not aware that the 100 Q-sort items would undergo future classification by experts (see below).

Three sorters rated personality items for each participant; a mean was calculated for each of the three independent sorters' judgments of the 100 items. For the purpose of creating a composite picture, it is desirable for agreement to be neither too high (in which case having three judges would be pointless) nor too low (in which case there would be doubt about the meaningfulness of the ratings). The inter-rater agreement (calculated as Cronbach's alpha; see Helson et al., 1995; Wink, 1992b; York & John, 1992) for both the Radcliffe and WLPS data averaged .78. The composite scores based on these ratings are all that survive from the late

1990s when they were created (not the raw separate ratings), so it is impossible to calculate intraclass correlation coefficients (ICCs), which many view as a more appropriate statistic (Bravo & Potvin, 1991; Shrout, Fleiss, & Fleiss, 1979). In order to assess how consequential this difference might be, q-sorts completed for a later sample (in 2005) were used to estimate the agreement of the two indicators. Thirty sets of three sorts were assessed in terms of both Cronbach's alpha and ICC, and the two estimates of reliability were then correlated; the resulting association was .98, suggesting that alpha is a good estimate of ICC with Q-sort data.

#### 6.3.2. Preliminary organization of CAQ items in terms of gender norms

In 2009, five expert raters – faculty and advanced graduate students who conduct gender and personality research – who were blind to specific Q-sorted data, worked individually to judge Q-sort items as either *conventionally feminine personality traits* or *conventionally masculine personality traits*. Items unclassifiable in terms of gendered traits were also identified, and excluded from scale-level analyses. Examples include "Has warmth; has the capacity for close relationships; compassionate," which was categorized across the five raters as an item indicating a *conventionally feminine personality trait*, and "Values own independence and autonomy," which was identified as an item indicating a *conventionally masculine personality trait*. Four out of five experts needed to agree on the categorization of an item for it to be included in the appropriate gender category. After this overall consensus was calculated, 5 items with 60% or less agreement were dropped from further analysis. In this way, raters categorized 12 masculine gendered items and 10 feminine gendered items.

These expert-classified items were combined to create two scales, which were analyzed for each normative/non-normative life path comparison. Reliability for the conventionally feminine personality traits measure was  $\alpha = .80$ , and for the conventionally masculine personality traits measure  $\alpha = .82$ ; the scales correlated strongly negatively with each other,  $r = -.76, p < .01$ . As evidence of the validity of the scales, we compared them with the Bem (1974) Sex Role Inventory femininity and masculinity scales available for one sample, and found moderately strong relationships between the two measures of femininity,  $r = .53, p < .01$ , and the two measures of masculinity,  $r = .55, p < .01$ . However, because the Bem scales were only available for the Radcliffe women, they could not be used in further analyses of the combined Radcliffe/WLPS sample.

### 6.4. Analysis

In the present research, the mean ratings for each item were used. Scales were constructed, and analyzed using Analyses of Covariance (ANCOVAs) that controlled for race, subsample (Radcliffe or WLPS), household income, age, number of hours worked per week, as well as whether participants were married, and the presence of children. Final sample sizes therefore reflect the number of women in each comparison for whom complete data were available.

Further lower-order or item analyses used a resampling-based false discovery rate (FDR); that is, the expected proportion of falsely rejected null hypotheses among the set of rejected null hypotheses appropriate for Q-sort data. Q-sort ratings for each individual are ipsative and therefore not independent; for that reason, Block recommended the use of an analysis approach such as a Monte Carlo permutation technique (2008; p. 79); hence the use of FDR. The program that we used to implement the resampling-based FDR was Significance Analysis of Microarrays (SAM; Tusher, Tibshirani, & Chu, 2001), specifically developed to deal with multiple testing for massive amounts of information in gene expression problems, in which independence of observations could not be assumed. The  $p$ -value for each test is calculated from a permutation distribution. The selection of the set of significant tests is based on

the choice of delta (the width of the rejection region, which is the standardized difference between the two samples), and allows the possibility of dependent tests. The implementation of SAM involves calculating the FDR after the rejection region is chosen (Storey, 2002). Thus, the researcher is able to set the FDR; in our application, we set FDRs at <0.05, meaning that the chance of a false positive (or Type 1 error) across 1000 permutations was less than 5%. This method is superior to a bootstrapping approach because it enables us to simultaneously assess the significance of all 100 Q-sort items (K. Welch, Center for Statistical Consultation and Research at University of Michigan, personal communication). After running 1000 random samples of the data for each of the three comparisons of non-normative group with its relevant normative group, SAM produced a list of those items for each comparison where the non-normative group was significantly higher or significantly lower than its normative counterpart.

## 7. Results

### 7.1. Gendered personality scales

We conducted an Analysis of Covariance (ANCOVA) for each hypothesis, controlling for race, subsample (Radcliffe or WLPS), household income, age, number of hours worked per week, as well as whether participants were married and the presence of children (where appropriate). Final sample sizes are based on women who had data for all variables, including covariates. Overall, our hypotheses that women who followed non-normative life paths would exhibit different patterns of gender-linked personality traits were supported at the scale level. As expected, women in high status professions were significantly higher than women in moderate status professions only on the conventionally masculine trait scale,  $F(8,140) = 10.80, p < .01, \eta_p^2 = .07$  (controlling for race, subsample, age, hours worked, household income, having children, and marital status). Women without children were significantly lower on the conventionally feminine trait scale,  $F(8,140) = 9.01, p < .01, \eta_p^2 = .06$ . They also exhibited a trend to be higher on the conventionally masculine trait scale,  $F(8,140) = 3.12, p < .10, \eta_p^2 = .02$  (controlling for race, subsample, age, hours worked, household income, occupational status, and marital status). Single mothers were lower than married mothers only on the conventionally feminine trait scale and only at the trend level,  $F(7,54) = 3.54, p < .10, \eta_p^2 = .06$  (controlling for race, subsample, age, hours worked, household income, and occupational status; see Table 2).

### 7.2. Individual gendered personality items

Table 3 shows the number of Q-sort items identified by the SAM procedure as differentiating the groups that were also identified by

the experts as items associated with conventional masculinity or femininity. Item level analyses using the SAM procedure supported those conducted at the scale level; SAM identified differences for a large proportion of items identified by the experts as gendered: 70% of conventionally feminine items and 75% of conventionally masculine items. The three expert-identified items in each category that SAM did not identify were “Is socially perceptive of a wide range of interpersonal cues,” “Genuinely submissive; accepts domination comfortably,” and “Is self-dramatizing; histrionic” (items categorized as conventionally feminine); “Behaves in an assertive fashion,” “Is productive; gets things done,” and “Expresses hostile feelings directly” (items categorized as conventionally masculine).

#### 7.2.1. Women in high status professions

The SAM procedure identified five conventionally masculine gendered items that differentiated women in high status professions from their moderate status counterparts. For example, women in high status professions were higher than women in moderate status professions on items such as “Prides self on being “objective,” rational”; “Has high aspiration level for self”; and “Genuinely values intellectual and cognitive matters.” As predicted, women in high status professions were not lower than women in moderate status professions on any items that were identified as being conventionally feminine.

#### 7.2.2. Women without children

The SAM procedure identified the largest number of items differentiating the groups for this comparison: 11 gendered personality items. Women without children were significantly lower than women with children on seven conventionally feminine gendered items, such as “Arouses nurturant feelings in others,” and “Has warmth; has close relationships with others; is compassionate.” They were also significantly higher than women with children on four conventionally masculine gendered items, including “Values own independence and autonomy,” and “Keeps people at a distance; avoids close interpersonal relationships.”

#### 7.2.3. Single mothers

We hypothesized that single mothers would be lower than their counterparts on both feminine and masculine gendered traits scales. The hypothesis concerning conventionally feminine traits was weakly supported by the scale analyses (indicating a trend for difference); similarly, SAM identified only one feminine gendered item on which single mothers were significantly lower than their counterparts: “Is protective of those close to her.” In addition, despite the lack of difference on the overall masculine traits scale, single mothers were significantly higher than married mothers on

**Table 2**  
Means (and standard deviations) of comparison groups on feminine and masculine scales, with controls.

Scale	Normative/non-normative comparison		
	Moderate status profession (N = 105)	High status profession (N = 44)	F
Conventionally feminine traits	5.54 (0.84)	5.60 (0.68)	1.87
Conventionally masculine traits	5.95 (0.87)	6.32 (0.69)	10.80**
	Women with children (N = 131)		
Conventionally feminine traits	5.64 (0.72)	4.91 (1.01)	9.01**
Conventionally masculine traits	6.02 (0.81)	6.35 (0.97)	3.12t
	Married mothers (N = 52)		
Conventionally feminine traits	5.95 (0.67)	5.55 (0.68)	3.54t
Conventionally masculine traits	5.87 (0.85)	5.66 (0.88)	0.17

Note: All analyses are controlled for race, subsample (Radcliffe or WLPS) age, household income, marriage status (where appropriate), children (where appropriate), hours worked, and occupational status (where appropriate).

\* $p < .05$ ;  $t < .10$ .

\*\* $p < .01$ .

**Table 3**

Comparison of SAM-identified traits with expert-identified traits: distinctive and shared items by group.

	High status professions	No children	Single mothers
<i>Conventionally feminine traits (7 SAM out of 10 expert-identified)</i>			
Behaves in a sympathetic or considerate manner		–	
Seeks reassurance from others		–	
Arouses nurturant feelings in others		–	
Is protective of those close to her		–	–
Has warmth; has the capacity for close relationships; compassionate		–	
Behaves in a feminine style and manner		–	
Behaves in a giving way toward others		–	
<i>Conventionally Masculine Traits (9 SAM out of 12 expert-identified)</i>			
Is critical, skeptical, not easily impressed		+	
Shows condescending behavior in relations with others		+	
Prides self on being "objective," rational	+		
Appears to have a high level of intellectual capacity	+		
Genuinely values intellectual and cognitive matters	+		
Is power oriented; values power in self and others	+		
Has high aspiration level for self	+		
Keeps people at a distance; avoids close interpersonal relationships		+	
Values own independence and autonomy		+	+

Note: Positive signs (+) denote that the non-normative group is significantly higher than its comparison normative group on this item; negative signs (–) denote that the non-normative group is significantly lower on this item.

one item conventionally associated with men: "Values own independence and autonomy."

## 8. Discussion

Our hypotheses concerning the midlife personalities of women who had followed non-normative life paths were generally supported, though they were strongest for the high/moderate status professional comparison, as well as the comparison of women without/with children. In these cases, the results held for both the scale and item analyses.

Consistent with earlier work by Helson and colleagues regarding social clock projects (Helson & Picano, 1990; Helson et al., 1984), women in high status professions were higher than women in moderate status professions on conventionally masculine items. These included "Appears to have a high level of intellectual capacity" "Genuinely values intellectual and cognitive matters," and "Prides self on being 'objective,' rational": these items are all consistent with gaining more education. Other items were less associated with educational attainment and more with social status ("Is power oriented; values power in self and others," and "Has high aspiration level for self"). In contrast, but as expected, items conventionally associated with femininity (such as "Is protective of those close to her") were not different for women in these two kinds of professions. In short, when compared with women who also pursued professional careers, but at a more moderate status and more frequently associated with female gender roles, women in high status professions in this cohort were characterized as more cerebral, and comfortable with power; but they were not seen as lower on conventionally feminine gendered items. Perhaps the critical life domain most affecting a woman's perceived conventionally feminine personality is not occupational. To assess this possibility, the next two analyses moved from the more public social role arena – the workplace – to the more private, or family, arena.

For the second comparison, we focused on women who did not have children. Given the low rate of childlessness for women of this generation, and the "motherhood mandate" (Russo, 1976), we expected that not having a child would represent the most serious violation of a normative life path in the current research, although we only expected a clear indication of such on conventionally feminine traits. However, women who did not have children were differentiated from women who had children on *both* types of gender-linked personality traits, although it should be noted that there was

only a tendency to be higher on the conventionally masculine trait scale. Additionally, this comparison also identified the largest number of items of the three comparisons in the current research. Specifically, these women were lower on seven of the eight conventionally feminine gendered items identified by the SAM procedure. These items included items that signify warm interpersonal relations ("Behaves in a sympathetic and considerate manner," "Has warmth; has the capacity for close relationships; compassionate"), others that imply a relationship of dependency on others ("Seeks reassurance from others," "Arouses nurturant feelings in others"), and finally two items that suggest nurturant and caring feelings for others ("Is protective of those close to her," and perhaps "Behaves in a giving way toward others"). It is tricky to draw conclusions from individual personality items; what is a person like who is *not* particularly warm, considerate, caring, and submissive? There are many possibilities, but it is difficult to escape the impression that these women are both relatively cool in their interpersonal relations and personally autonomous.

The initial scale analyses revealed that women without children were not only low on conventionally feminine gendered traits but also high (at the trend level) on conventionally masculine gendered traits. In terms of a more specific personality profile, women without children scored higher than women with children on four masculine gendered items: "Is critical, skeptical, not easily impressed," "Shows condescending behavior in relations with others," "Keeps people at a distance; avoids close interpersonal relationships," and "Values own independence and autonomy." These items confirm an impression of independence, interpersonal distance and even some inclination toward evaluation and judgment in relations, as well as reliance on thought—including critical thought – rather than feelings. However, on closer inspection of the SAM-identified Q-sort items, we see that these women might be better described as cool and detached, critical and rational, and independent. Merely discussing these qualities in terms of conventional "masculinity" and "femininity" might actually obscure the particular personality characteristics of these women.

We predicted that single mothers would be distinguished from married mothers by being lower on conventionally feminine gendered traits as measured by the feminine scale; however, they only differed at a trend level. Additionally, the SAM procedure identified only two item-level differences: one conventionally feminine item on which single mothers (like women without children) were lower than their comparison group: "Is protective of those close to

her”; and one conventionally masculine item on which they were higher: “Values own independence and autonomy.” Single mothers were not different from married mothers on items suggesting critical or condescending relations. Perhaps single mothers are defined more by their adoption of conventional roles of marriage and motherhood than by their (later) adoption of the non-normative roles of divorcee and single mother.

In sum, the SAM results mostly mirrored the results for the scale analyses, but provided clearer substantive descriptions of the personalities of the two groups in question. In both analyses, women in high status professions differed only on the conventionally masculine gender-linked traits, and women without children differed on both conventionally masculine and feminine gender-linked traits. Single mothers were differentiated on only one conventionally feminine and one conventionally masculine item.

The fact that women who pursued non-normative life paths in the current study exhibited personality traits inconsistent with adherence to gender roles supports the scattered research findings in this area. That is, the current findings are consistent with previous findings that women who followed non-traditional professions had less traditional gender role attitudes, were less conventional, and ‘more masculine’ (Heilman, 2001; Helson & Picano, 1990; Helson et al., 1984; Lemkau, 1979; Mueller & Yoder, 1997; Noonan et al., 2008; Tangri, 1972). This study is also consistent with findings that women without children had less traditional sex role attitudes (Bram, 1984; Davis & Greenstein, 2004; Fahs, 2007; Helson et al., 1984); although weaker, this study also supports extant research that single mothers hold non-traditional gender ideologies. The detailed findings based on the SAM analyses of specific items offer new directions for further study: women in high status careers appear to be both cerebral and comfortable with power; women without children seem interpersonally cool, independent, critical and detached; single mothers seem less protective toward children, but not less warm in general, and no different on other conventionally feminine items, while similarly high in independence, but not in other conventionally masculine items. Previous research suggested that women’s personality traits are associated with their life paths; we conclude here that particular non-normative life paths are associated with particular personality traits and items. Although the current research cannot establish the causal direction (traits leading to selection of paths, paths shaping personalities, or both), this association is surely important.

For analysis purposes, each of the non-normative groups was conceived of as non-overlapping in membership. However, where appropriate, we used demographic controls (marital status, presence of children) to further ensure the focus of each comparison on the relevant difference. This emphasis on eliminating overlap may not accurately reflect reality. Women (and men) lead complicated lives; some may be ‘non-normative’ in only one way, while others may be ‘non-normative’ in a number of ways. Future research should attempt to capture such complexity.

It is important to note that particular life paths may be normative or non-normative for different generations: What was not normative for the cohort of women in this study is different in at least some ways from what is not normative for later cohorts. Women are remaining childless – whether by choice or circumstance – in greater numbers, making childlessness less unusual: according to the U.S. Census Bureau, 10% of women aged 40–44 did not have children in 1976, whereas by 2010 the figure had increased to 19%. Women today are also more likely to be single parents than previous generations; for example, in 2010, 24% of women were classified as single mothers living with children younger than 18, whereas in 1970 this figure was 11%. Likewise, what defines a profession in which men currently predominate? In academia, the fields of math, physics and engineering are still dominated by men, but women have made headway in many other areas. Medi-

cine and law have become less strongly gendered, although this can be dependent upon the specific discipline within the field. For example, pediatrics now tends to be dominated by women (Mayer & Preisser, 2005), whereas litigation is still predominantly a man’s field (Sarver, Kaheny, & Szmer, 2008).

### 8.1. Strengths and limitations

This research has shown that life paths and personality are linked, even in samples generally considered relatively homogeneous. These highly educated middle-class women, many of whom were White, were born during a certain era; they were considered a transitional cohort, and as such present a rich source of information concerning the relationship between their life paths and personality into late midlife. As one participant responded, when asked about the influence of the sexual revolution of the late 1960s, she felt “pulled [between] Victorian sensibility and Woodstock.” However – conversely – the generalizability of our findings is limited by this focus on a specific cohort of college-educated women.

The Q-sort was designed as a measure of overall personality, and its origins reflect that philosophy. Block viewed the CAQ as a standardized set or test of neutral, non-evaluative statements that could be used to describe personalities in detail (Block, 2008, p. 35). The use of the 100 Q-sort items to measure gendered personality traits and their association with life paths is novel. The Q-sort method offers the possibility of a multi-level picture of personality, allowing for the distilling of large amounts of rich narrative data – incorporating data on traits, motives, goals, social roles – into a comprehensive, analyzable whole. Once sorted, these data are then available for further analysis at scale or item level, and provide a resource for future measurement of multiple facets of personality. Moreover, the use of the SAM technique (Tusher et al., 2001) – targeted, as it is, to analyze large amounts of dependent data simultaneously – could be of great benefit to future personality research.

Unfortunately, the bi-directional nature of the relationship between personality and life path cannot be examined with the data used here: Although life path choices in this study pre-date the personality data used, we do not have personality data that predate life choices. There is little doubt that both directions of influence matter, and future research using datasets where personality data predates life path data could examine both.

## 9. Conclusion

In reviewing the results of the Q-sort analysis, it is clear that women pursuing certain life paths exhibited personality traits inconsistent with gender roles. Women in traditionally male professions differed from women in more traditionally female professions only on traits conventionally associated with masculinity; women without children were significantly lower than women with children on traits conventionally associated with femininity, and exhibited a tendency to be higher on traits conventionally associated with masculinity. Single mothers exhibited a tendency to be lower than married mothers only on traits conventionally associated with femininity, at least at the scale level. This study has demonstrated that women who pursue life paths not normative for their generation of women show a tendency to have personality traits that are inconsistent with gender norms. Perhaps other unusual life paths, less saturated with gender, are associated with different personality traits.

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### Appendix A. Sample responses for three questions taken from the open-ended survey questions

Q: Looking back over the last 7 years, what do you consider major high points, or the most satisfying activities? Please include a many things and as much detail as you can.

*Example 1:* "I've been working since I was in my teens to repair the damage done to me in my extremely unhappy childhood, & to make myself into something resembling a normal person. There's been a steady progress since I started working with a therapist in 1987, & it's finally reached a point where I know I'm over the worst of it. I'm now basically happy, contented with my life, less tense, less easily upset, less controlled by old patterns, & find it easier to relate to people. I still prefer being alone to being with people, but I've seen that that's not likely to change, & I can accept it instead of worrying about not being normal. Other than that, acquiring & working with my judge & chasing cattle on horseback have been the high points."

*Example 2:* Going to [school]- the best education I've ever had (yes, even including Radcliffe!) but not the education I expected. 2. Coming back to [home]. 3. Living with 3 great young women the last year & 1/2. 4. Going to [vacation] – a life long dream. 5. Meeting great people at [school]. 6. Gaining tremendously in self knowledge."

*Example 3:* "Our trips to far-off countries – particularly in 1995 – and the milestones in our children's educational careers have been particularly satisfying. But then there is the general texture of life here – the smell of pure air, digging in this stony earth, the brilliant fall colors, the reluctant spring, & the spare but breath-taking summer – these rhythms are all satisfying if not noteworthy. As the yrs. pile up it becomes hard to single out all the blessings. Also enjoyed reconnecting with old friends, learning how their lives have progressed, & discovering much in common still."

Q: Any regrets?

*Example 1:* "I would like to have learned earlier to focus more, trust in my own reactions and judgment. I would now like to redo my undergraduate years taking different courses and handling them better."

*Example 2:* "I wish my depression had been diagnosed earlier. It was fully apparent at college but there was no safety net. All the unhappy years. My fear of social interaction."

*Example 3:* "In general I have been much too cautious and concerned with things that aren't important, mostly the emotional security of being needed by someone. I have been handicapped by excessive shyness and self-consciousness."

Q: If you could do anything you wanted in the next 10 years, what would it be?

*Example 1:* "I would like to have more time. I would like to travel- back to Nepal, to Tibet, to Italy, Great Britain, France, Egypt,

Greece, Mexico. I would also like to have the feeling which I do not have now that I have a reasonable mastery of law practice. I seem to focus on what I cannot do and disregard what I can. A greater sense of comfort and confidence I would like to develop. Also to go back to practicing the piano."

*Example 2:* "what I'm doing. Have the film on [topic] turn out to be good and important and influence and empower people. Keep hiking and enjoying the land and [partner] and friends and a whole political agenda too long to list here... (less poverty and income inequality, less prejudice, less economic insecurity, more equal access to jobs and education...)"

*Example 3:* "Stay healthy, keep traveling. Phase myself out of my job gracefully, find other ways to spend my time productively after retirement. Handle my parents' deterioration effectively."

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