CONTINUITY AND CHANGE IN VALUES IN MIDLIFE: TESTING THE AGE STABILITY HYPOTHESIS

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Background/Study Context: *The "age stability" hypothesis suggests that adults have significant continuities in values over time, whereas the "situational influence" hypothesis suggests that change continues, especially in response to new events and experiences. Deeply ingrained, terminal values may be more stable than other, more instrumental, values. Less research examines changing values than examines changing personality traits and attitudes.*

Methods: *Hypotheses were tested with data from* A Study of Leisure During Adulthood *(ASOLDA), a 9-year panel study of middle-aged adults (average age of 45 at the beginning of data collection). Mixed-model regressions and descriptive statistics were used to examine changes and stability over time in global values, measured by the List of Values (LOV), and instrumental values related to leisure.*

Results: *Significant correlations were found in both terminal and instrumental values over time (autocorrelations ranging from .13 to .23). There was no linear or curvilinear pattern of change over time. Respondents reported a wide range of positive and negative life events and variations over time in reflections on their life structure, but these variations were unrelated to changes in values.*

Conclusion: *Results support the age stability hypothesis, rather than the situational influence hypothesis, with similar results for both terminal and instrumental values. It is suggested that the consistent values of respondents may have helped them weather the wide range of often-difficult circumstances many reported experiencing. Future research should examine this hypothesis.*

Continuity and change in adulthood have long fascinated both scholars and the lay public. Some suggest that there are significant continuities in individuals' personalities, perspectives, and values, especially after early adulthood, supporting what has been called the "age stability hypothesis." In contrast, others suggest that adults continue to develop and experience change, especially in response to new events and experiences. This view has been called the "situational influence hypothesis." The majority of the literature related to age stability and change focuses on personality traits. There is somewhat less attention in the literature to stability in attitudes, and little literature appears to deal with personal values. Our work begins to fill this gap by focusing on stability and change in values.

We test the age stability and situational influence hypotheses by looking at changes over a decade in middle-aged adults' self-reported values. We examine changes in both global, or terminal, values involving general life goals as well as specific, or instrumental, values regarding leisure activities, a life area that is thought to become more important in midlife. Much of the literature that examines stability and change has included relatively few time points. Our analysis adds to the literature by using a unique data set that followed middle-aged adults longitudinally over one decade, with detailed information on crucial life events as well as subjects' reflections upon their life course.

Values and Development

The most complete and frequently used definition of values comes from Milton Rokeach, who wrote that values are enduring beliefs, "centrally located within one's belief system, about how one ought or ought not to behave, or about some end-state of existence worth or not worth attaining" (Rokeach, 1968, p. 124; also Kahle & Timmer, 1983; Rokeach,

1973, p. 5; Spates, 1983). The sociological literature has generally built on Rokeach's work, usually linking discussions of values with those of beliefs and attitudes, and often suggesting that values are a specific form of beliefs (Homer & Kahle, 1988; Kahle & Timmer, 1983; Kiecolt, 1988; Rokeach, 1968, 1973, 1979; Spates, 1983). In contrast, the psychological literature has tended to locate discussions of values within analyses of personality development. For instance, the "neo-socioanalytic model of personality" defines values as one of four domains of personality, along with traits, abilities, and narratives or life stories (Roberts & Wood, 2006). Interestingly, within both disciplines, the study of values has received less attention than beliefs or attitudes (in sociology) or personality traits and attitudes (in psychology). Changes in values are, however, at least implicit in the various theoretical discussions of midlife change.

Several theories of adult development have described stages of change or even "crises" that can occur in adulthood, as adults come to terms with changing roles and statuses as well as their own mortality. The most famous may well be Erik Erikson's discussion of "generativity versus stagnation" and the ways in which adults strive to develop meaning from life in their midyears (Erikson, 1963). In a similar vein, Gould (1978) identified a progression of changes that suggested distinctive age periods. Most relevant to our analyses is the work of Levinson and colleagues (Levinson, Darrow, Klein, Levinson, & McKee, 1978; Levinson, 1996). Based on numerous in-depth interviews conducted with both men and women, they suggested that transitional or developmental periods in adults' lives were associated with personal self-reflection. During adulthood, individuals experience a sequence of alternating periods of stability, called structure building, and periods of potential transition, called structure changing. These periods do not occur at certain chronological ages, but are individually scripted based upon individuals' life experiences. The experiences in these periods, particularly in the structure changing times, require the individual to reaffirm or reassess previously made life choices associated with the life structure, which is thought to consist of all aspects in a person's life, including personality, occupation or career, family, leisure, and values (Levinson et al., 1978; Levinson, 1996).

Age Stability Hypothesis

Empirical studies in both the sociological and psychological literatures have addressed issues related to the life cycle and adult development and, more specifically, both the age stability and situational influences hypotheses. Whereas the theoretical work noted above has tended to focus more on midlife changes and "reevaluations," reviews of the empirical literature

usually stress the continuities in midlife and suggest that when changes occur, they are more likely to be "midcourse corrections" and subtle shifts in life styles (Freund & Riediger, 2006; McAdams, 2008). This "age stability" perspective argues that individuals' attitudes, beliefs, personality traits, and values tend to stabilize and be less likely to change as they grow older. Most discussions suggest that the increase in stability is monotonic through adulthood, but is most marked immediately after early adulthood. In an extensive review, Glenn (1980) traces the age stability hypothesis to Mannheim (1953), Ryder (1965), Carlsson and Karlsson (1970), Eisenstadt (1971), and Ingelhart (1977) (see also Alwin & Krosnick, 1991).

Numerous psychological studies have examined stability in personality traits over time (e.g., Caspi & Roberts, 2001; Hampson & Goldberg, 2006; Rantanen, Metsäpelto, Feldt, Pulkkinen, & Kokko, 2007; Roberts, Helson, & Klohnen, 2002; Terracciano, Costa, & McCrae, 2006). Others, primarily in the sociological literature, have examined stability in attitudes, particularly political attitudes (e.g., Glenn, 1980; Holahan, 1984). Studies of changing values over time are somewhat less common. However, they appear to have fairly consistent results, finding relative stability over time, that this stability is more common as people age, and that values are more consistent over time than attitudes (Hoge & Bender, 1974; Jin, 2010; Konty & Dunham, 1997; Newcomb, Koenig, Flacks, & Warwick, 1967). Based on this literature, we expected that middle-aged adults would be likely to exhibit relative stability in values over time; in other words, we expected to find support for the hypothesis of age stability.

Situational Influence Hypothesis

The empirical literature, in both psychology and sociology, also, however, provides support for the "situational influence" hypothesis. Both literatures recognize the key impact of changing social roles and expectations on continuity and change in attitudes, beliefs, personality, and values. Glenn describes the reason for age stability as "the dense spacing of significant life events in early adulthood and the wider spacing of those events thereafter" (Browning, 1968, as cited in Glenn, 1980, p. 603). In other words, as the probability of new statuses and roles declines, stability of personal traits increases. Glenn extends this discussion by noting that "this explanation does not posit a decline in the inherent changeability of the individual—only a decline in the exposure to influences for change" (1980, p. 603). Studies have found that adults who report changing values over time are more likely than others to have experienced new or different roles, statuses, and experiences (Hoge & Bender, 1974; Newcomb et al., 1967; Roberts et al., 2002).

Changing roles and expectations could be related to changing life perspectives. As life circumstances and physical abilities alter, middle-aged adults may reevaluate their life goals, shifting their expectations and activities to accommodate changing work, family, and leisure roles (Freund & Riediger, 2006; McAdams, 2008). This conclusion is supported by discussions of life "narratives," or the ways in which individuals reflect upon and manage life goals and direction, with authors suggesting that midlife can include "tipping points," where people reflect upon life goals and perhaps adjust their views in anticipation of the future (Diehl, 2006; Freund & Riediger, 2006; Helson, Soto, & Cate, 2006; McAdams, 2008). Several case studies using longitudinal data of adults' leisure and life perceptions document both the stability and the reassessment of the value of leisure over time, all within the uniqueness of individuals' life experiences and perceptions regarding their life structure (Carpenter, 1997, 2003, 2005; Carpenter & Murray, 2002; Carpenter & Patterson, 2004; Patterson & Carpenter, 2003). The notions of Levinson and colleagues regarding stages of "structure building" and "structure changing," which were described above, relate directly to these times of reevaluation, and we used these formulations in our analysis.

Specifically, we examined the situational influence hypothesis by looking at the relationship of changing values with changes in life narratives and reported "phases of life." In general, we hypothesized that individuals in midlife would be more likely to report changing values when faced with new and/or stressful statuses and roles and/or when they believed that they were in a "structure changing" phase of life. In other words, we expected to find support for the situational influence hypothesis in that middle-aged adults who perceived that they were changing in other ways, whether it involved roles, statuses, or life goals, would be more likely than others to have changing values. Some literature also suggests that the changes may not be linear in nature, but instead may involve "phases" or nonlinear change (Helson et al., 2006, pp. 339–342), and we investigated this possibility.

Terminal and Instrumental Values

Our final hypothesis regards variations in stability and change across different types of values. Glenn suggested that "deeply ingrained values concerning religion, the family, marriage, and such abstractions as love, freedom, democracy, and communism" would be less malleable over time than instrumental "beliefs about the nature of changeable and tangible objects" (Glenn, 1980, p. 605). He contended that the former, more global, values, which Rokeach called "terminal values," are emphasized during childhood socialization. The reasoning for the possible greater malleability

of other values, termed "instrumental" by Rokeach, relates to the situational influence hypothesis. Middle age is the point in life where changes in roles and statuses can allow individuals to reevaluate issues related to life priorities, especially the prominence given to leisure relative to work and family responsibilities (Carpenter, 1994). Studies of narratives and reflection in midlife (see Diehl, 2006) describe how work or leisure becomes more or less prominent in our daily activities over time, especially as work and family responsibilities may change. Thus, it is reasonable that the value attached to these areas could change.[1] We compared the relative stability of the more global, terminal, values and instrumental values related to leisure and hypothesized that the former would be more stable over time.

Summary

To summarize, we examined three hypotheses regarding changes in the values expressed by people in midlife: (1) the age stability hypothesis, which suggests that there would be stability in values over time; (2) the situational influence hypothesis, which suggests that changes in values would be more likely to occur when individuals experienced changing statuses or roles and/or when they reassessed life priorities and directions; and (3) differences between terminal and instrumental values, expecting that changes would be more likely to occur with the latter than with the former.

METHODS

Design and Sample

Data used in this study came from *A Study of Leisure During Adulthood* (ASOLDA), a longitudinal study that began in 1987 and continued every year until 1996. ASOLDA was designed to examine change and continuity of leisure, life perceptions, and values in the lives of middle-aged adults over time (Carpenter, 1997; Carpenter & Robertson, 2000). A 13-page questionnaire, discussed at length elsewhere (Carpenter, 1992), was used annually. Researchers have suggested that a major missing piece in our understanding of values and value change is in the realm of longitudinal research (cf., Beatty, Kahle, Homer, & Misra, 1988). Cross-sectional

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[1]Rokeach did not include the term "leisure" in his list of 18 instrumental values. We assert, however, that individuals' values regarding leisure conform to his definition of instrumental values as those that are related to behavior and the ways that people try to attain their more global or terminal values (Rokeach, 1968, 1973).

studies can provide insights into variations between age groups and birth cohorts, and trend studies can provide insights into changes over time for larger populations samples (e.g., Gurel-Atay, Xie, Chen, & Kahle, 2010; Kahle, Poulos, & Sukhdial, 1988; Orth & Kahle, 2008). But only panel (longitudinal) studies can provide much more precise information about intra-individual, or developmental, change (Helson et al., 2006). Thus, a panel study, such as ASOLDA, may be especially useful for studying individuals' changing values over time.

Eighty-four middle-aged adults, primarily of European descent, originally participated in the ASOLDA study. Several of the participants had previously taken part in one of two cross-sectional studies on leisure and midlife conducted at a major university in the United States. Most of the study participants were asked by the principal investigator if they or others they knew might be interested in making a long-term commitment to participating, and their persistence over time was apparent. During the 10 years of data collection, over 55 of the participants (68%) completed the questionnaire every year, and another 11 (14%) completed the questionnaire 9 out of 10 years. Only 12 respondents (15%) responded four or fewer times. Because relevant measures were not obtained in Year 1, our analysis is restricted to Years 2 through 10 of the study. Because we were interested in changes over time, we also restricted our sample to respondents with data in at least two of those years ($N = 79$). Of these 79 respondents, two thirds had data for all 9 years, and an additional 18% had data for 8 of the 9 years. At the beginning of the study, the average age of our sample was about 45 years, and slightly more than half (60%) were women. Respondents were well educated, with over half having a graduate degree.

Measures

We measured terminal values with the List of Values (LOV). The LOV was first developed for the research reported in *The Inner American* (Veroff, Douran, & Kulka, 1981) and was designed to be a survey-friendly measure of value orientations. It asks respondents to rate the importance of nine terminal values on a scale from 1 to 9, with one labeled "very unimportant" and nine labeled "very important." (Rokeach's measure asks respondents to rank order a set of 18 values, a much more daunting task for a survey respondent.) The LOV items were selected to be applicable to all of life's major roles and to relate to a broad range of developmental and psychological theories. The LOV has been used extensively in a variety of fields and a large body of research has documented its reliability and validity (Kahle, 1983; Kahle, Beatty, & Homer, 1986; Kahle, 1996; Kahle & Valette-Florence, 2012; Veroff, Douvan, & Kulka, 1981).

We conceptualized leisure as a subjective entity, seeing leisure as associated with mental states, perceptions, meanings, and/or experiences (Hutchinson & Kleiber, 2005; Mannell, 2007; Mannell & Kleiber, 1997). This approach emphasizes functions of personal development, relaxation, and entertainment (Dumazedier, 1967) and sees leisure as an experience, a process, and an ongoing state of mind (Neulinger, 1981). It contrasts with more "objective" measures of leisure, such as hours of free time or participation in certain activities, and, we assert, is more appropriate for understanding individuals' values regarding leisure. Individuals may have very similar amounts of time devoted to a particular activity, but could have very different perceptions of the nature of this time or activity.

Building on this perceptual and interpretive conceptualization, our measure of leisure-related values was a composite scale based on three different indicators, all of which tapped the extent to which respondents expressed positive attitudes regarding leisure and valued leisure in their lives. The measure included (1) 10 items from the Leisure Ethic Scale (Crandall & Slivken, 1980) that asked respondents to indicate on a scale of 1 to 4 their level of agreement with a variety of leisure related attitudes,[2] (2) responses to a calibration of leisure values, and (3) respondents' rank ordering of leisure relative to family and work. The Valuing Leisure Scale (Carpenter, 1992) was used for the calibration measure. Respondents were asked to place a checkmark along a 4-inch continuum marked "low to high" in response to the phrase "Generally speaking, I value leisure this much." The placement was then recorded as a number (ranging from 0.0 to 4.0), with 0.0 corresponding to the lowest point and 4.0 corresponding to the highest. To determine the rank ordering, respondents were asked to rank the importance of family, work, and leisure in their lives. We focused on the ranking of leisure, which could range from 3 (the highest ranking) to 1 (the lowest ranking). The measures were all positively associated with each other and, after transforming to standard scores, were combined into a summative scale (coefficient alpha = .78).[3]

We employed two types of variables to measure situational influences and respondents' changing life experiences and perceptions. To measure changes in statuses and roles, respondents were asked to respond to the Life Experiences Survey (LES) (Sarason, Johnson, & Siegel, 1979). The

[2]Individual items were "My leisure is my most enjoyable time," "I admire a person who knows how to relax," "I like to do things on the spur of the moment," "I would like to lead a life of complete leisure," "Most people spend too much time enjoying themselves today" (reversed), "I do not feel guilty about enjoying myself," "People should seek as much leisure as possible in their lives," "I would like to have at least two months of vacation a year," "Leisure is great," and "It is good for adults to be playful."

[3]We also conducted separate analyses with the various measures, and can provide those results upon requests. Substantive findings were similar to those reported here.

LES lists 47 typically experienced adult-life events, involving areas such as family (e.g., deaths, births, marriages, and other events involving them or loved ones), work (e.g., job change or loss), and health (e.g., sickness, disability, etc.). Respondents selected events they experienced during the previous 12 months and could also add other important events that they had experienced. They then indicated the ways in which the events affected their lives and how much control they had over each happening. From these items we created an average of the respondents' ratings of the positive-negative impact of the events on their lives, with scores potentially ranging from −3 (extremely negative) to +3 (extremely positive). We also computed the respondents' average report of how much control they had over the events, with scores ranging from 1.0 (had control on all events) to 4.0 (had no control on any event). Thus, for each year we had indicators of respondents' positive-negative view of life events, their perceived control over these events, and the number of events that they reported.

We measured respondents' perceptions of their life structure with the Life Structure Assessment (LSA) (Carpenter, 1992), an instrument based on the Levinson et al. (1978, 1996) concept of life structure discussed above. After reading a detailed description of Levinson's typology, respondents were asked to indicate whether they felt they were "structure building," "in process of making key choices and decisions which are forming my life structure" (coded 1), or "structure changing," being "in the process of questioning . . . reassessing rather than reaffirming certain aspects of my present life structure" (coded 2).

Finally, we used three sociodemographic measures as control variables: respondents' age (measured in years), gender, and education (measured on a 7-point scale, with the highest value indicating receipt of a postgraduate degree). Although respondents could have attained more education during the study, this event was quite rare. Thus, all of these measures were assessed at the first time point and were assumed to be time invariant.

Analysis

We began our analysis by examining descriptive statistics on each of the variables, both across individuals and over time. We then used mixed models to examine our hypotheses regarding age stability, situational influences, and differential patterns with terminal and instrumental values. Following the logic used with linear growth models, we treated variables that varied over time as the Level 1 units and variables that were constant over time (the demographic control variables) as Level 2 units (Raudenbush & Byrk, 2002; Singer & Willett, 2003).

We examined the age stability hypothesis through the comparison of four models: (1) an "intercept-only" model, looking at how much values varied between individuals, equivalent to a one-way analysis of variance; (2) a model that added the linear and quadratic effects of time, examining the possibility of both linear and nonlinear (phased) effects; (3) a model that omitted the linear and quadratic effects of time, but included an autocorrelation term; and (4) a model including both the linear and quadratic terms as well as the autocorrelation. The -2 log likelihood statistic, a standard model fit statistic, was used to compare the models. The stability hypothesis would suggest that the autocorrelations would be significant, whereas the effects of time would not (i.e., support for Model 3, but not for Models 2 and 4).

To examine the situational influence hypothesis, we expanded the mixed models to include the measures of changing roles and perceptions of life structure (Model 5) and the demographic control variables (Model 6). The fixed-effect coefficients associated with each variable were examined. The situational influence hypothesis would suggest that changes in roles and life perceptions would be associated with changing values, in other words, that the coefficients associated with these measures would be statistically significant.

To examine the third hypothesis regarding differential effects on terminal and instrumental values, we compared the results with the nine measures from the List of Values and the scaled measure of leisure values. The literature reviewed above suggested that changes over time would be more likely to occur with leisure values than with the terminal values included in the LOV and that changing roles and life perceptions would be more strongly related to the leisure values.

To provide additional checks on our results, we also used a number of post hoc analyses. These are described briefly in the next section.

RESULTS

Descriptive Results

Table 1 gives descriptive statistics for each of the variables in our analysis. The data for the time-varying variables used the average value of a variable for each individual as the unit of analysis. To enhance intuitive understandings of the data, the average deviations (ADs) are reported rather than the standard deviation. The average deviation is calculated by dividing the sum of the absolute deviations around the mean by the number of observations and thus, quite simply, tells us how much, on average, individuals' scores varied over time. Smaller average deviations would indicate less

Table 1. Descriptive statistics, ASOLDA data

Item	Mean	Min.	Max	Average deviation	Years of data (average)
Terminal values (time varying)					
Sense of belonging	7.1	2.4	8.9	0.93	8.0
Excitement	6.1	2.0	8.7	0.84	7.9
Warm relationships with others	7.9	4.2	9.0	0.67	8.0
Self-fulfillment	8.1	5.0	9.0	0.58	8.0
Being well-respected	7.6	4.4	9.0	0.73	8.0
Fun and enjoyment	7.6	3.2	9.0	0.64	8.0
Security	7.5	1.8	9.0	0.69	8.0
Self-respect	8.5	6.0	9.0	0.45	8.0
Sense of accomplishment	8.0	6.0	9.0	0.64	8.0
Leisure values (scale)	0.0	−1.7	0.8	0.22	8.1
Life events and perceptions (time varying)					
Number of Events	4.5	0.6	14.2	1.92	9.0
Positive-negative valence of life events	0.2	−1.9	2.3	0.89	7.5
Perceived control over life events	2.4	1.1	3.7	0.53	7.1
Structure building (1) vs. structure changing (2)	1.4	1.0	2.0	0.33	7.7
Control variables (time invariant)					
Gender (2 = female, 1 = male)	1.6	1.00	2.00	0.49	—
Age (in years)	44.8	29	61	7.12	—
Education (7 = postgraduate)	6.0	1	7	1.40	—

Note. $N = 79$. The statistics for time-varying variables were calculated by computing the average score across the 9 years on each measure for each person and the average deviation of their responses. The values in the table represent the average of these averages across all the participants. The average deviation is the mean average deviation, and the years of data are the average number of data entries for individuals. Scores for the global measures of values ranged from 1 to 9, with 1 = very unimportant and 9 = very important. For the time-invariant variables, standard deviations, rather than average deviations, are reported.

variability over time and support for the age stability hypothesis, whereas larger average deviations would indicate more variability over time and potential support for the situational influence hypothesis.

Respondents generally gave high scores to the terminal values, with self-respect, self-fulfillment, and sense of accomplishment having the highest average scores and excitement the lowest. Inspection of the individual components of the leisure measure indicated that the respondents also valued leisure highly, although, on average, they ranked leisure less highly than work and/or family. The average deviations on all of the dependent measures were relatively small, providing support for the age stability hypothesis. On average, respondents' answers varied over time by less than 1 point on the 9-point scale for the terminal values. The greatest variation appeared with "excitement" and "sense of belonging"

(AD = .93 and .84, respectively) while the smallest was with self-respect (AD = .45). Similarly, although average scores on the leisure scale varied from −1.7 to + 0.8, individuals' scores varied, on average, by only about one-fifth of a point (.22).

The respondents reported on an average of four to five major life events each year, although this ranged from only 1 to 14 reports. On average, the respondents rated these life experiences as slightly positive (0.2 on a scale ranging from −3 to +3), with relatively little variation over time (less than 1 point on average). They reported having some to little control over these events, with somewhat more variation in this item (.53 on a 4-point scale). When asked to reflect upon their place within Daniel Levinson's structure building, structure changing typology, they showed a fair amount of variation over time, reporting that they were "structure building" about 60% of the time. In short, there was substantial variability in the respondents' life events and reflections but relatively little variability in either global or leisure-related values.[4]

Multivariate Analyses

These descriptive results, and particularly the relatively small average deviations of the dependent measures, suggest support for the age stability hypothesis. The multivariate analyses provide additional tests. Tables 2 and 3 summarize the results of the mixed-model analyses that examined the relative fit of models incorporating linear and quadratic effects of time and autoregressive terms for each of the dependent measures. Table 2 provides a summary of the models and results. Table 3 reports the −2 log likelihood values and the change in these values from one model to another. Recall that the stability hypothesis would suggest that the autocorrelations would be significant (added in Model 3), whereas the effects of time (either linear or nonlinear) would not (in Models 2 and 4).

The results indicate substantial support for the age stability hypothesis for both the terminal values and the composite measure of leisure values. The autocorrelations (in the last column of Table 3) were statistically significant in all of the analyses of items from the List of Values, ranging from .13 and .14 for "excitement" and "fun and enjoyment" to .23 for "security." In comparing Models 1 to 4, the best-fitting model, as indicated by the −2 log likelihood ratio statistics, was Model 3, which omitted the linear and quadratic effects of time and only included the autocorrelation.

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[4]The last column of Table 1 gives the average number of years for which data on each measure were available and reflects the high response rate throughout the time of the survey, with an average of 7 to 8 years of data for each measure. Missing values do not affect the results of the mixed models, for the statistical program used (SAS Proc Mixed) accommodates periods with missing data.

Table 2.   Summary of multivariate models and results

Model number and variables added	Question addressed	Answers	
		Terminal values	Instrumental values
1. Baseline	Do individuals express different values?	Yes	Yes
2 and 4. Effects of time	Are changes in values over time systematic (linear or curvilinear)?	No	No
3. Autocorrelation	Are values expressed at one time point associated with values at other times?	Yes	Yes
5. Impact of life events	Are changing roles and perceptions of life structure related to variations in values over time?	No	No
6. Impact of demographic characteristics	Are demographic characteristics related to variations in values over time?	No	No

Note. Models 2, 3, and 4 test the age stability hypothesis; Models 5 and 6 test the situational influence hypothesis.

The autocorrelation with the measure of leisure values (.18) was similar in magnitude to those for the LOV items. For the leisure values scale, both Model 2 (including linear and quadratic effects of time) and Model 3 (including time as a categorical variable and the autocorrelation) provided a significantly better fit than the baseline model. However, none of the coefficients associated with either time or the quadratic effect of time met traditional levels of significance. (These coefficients were not included in the table in order to conserve space.) Thus, Model 3, with time as a categorical variable and the autocorrelation term, was used as the base model for all dependent variables in examining the increment in explained variance when the life events and demographic variables were added (Models 5 and 6).

Models 5 and 6 were designed to provide further tests of the situational influence hypothesis by examining the extent to which changing roles and perceptions of life structure were related to variations in values over time. Model 5 in Tables 2 and 3 summarizes the impact of adding the measures of life events (the number of events, the rated positive/negative valence, the rating of control, and the measure of structure/building and structure changing) to Model 3, and Model 6 summarizes the impact of adding the demographic controls. All of the changes in the −2 log likelihood values associated with the change to Model 5, but none associated with the

Table 3. Model fit statistics for multivariate analyses

		1	2	3	4	5	6	ar(1)
Sense of belonging	−2 LL	2322.2	2313	2308	2320	1998	2001	.19***
	Ch.		9.4	14.1	−11.6	309.7	−2.1	
Excitement	−2 LL	2184	2193	2178	2188	1907	1912	.13**
	Ch.		−8.8	6.3	−9.8	270.5	−4.3	
Warm	−2 LL	2058	2067	2048	2061	1776	1775	.16***
relationships	Ch.		−8.9	10.3	−12.8	272.4	0.4	
Self-fulfillment	−2 LL	2015	2012	1996	2008	1698	1709	.21****
	Ch.		2.8	19.3	−11.6	297.7	−11.0	
Being well	−2 LL	2110	2108	2095	2106	1812	1812	.20***
respected	Ch.		1.4	14.4	−10.3	283.1	0.1	
Fun and	−2 LL	2084	2093	2075	2086	1803	1812	.14**
enjoyment	Ch.		−9.0	8.5	−11.3	272.3	−9.6	
Security	−2 LL	2126	2127	2106	2119.4	1838.1	1838.1	.23****
	Ch.		−0.8	19.9	−13.1	268.2	0.0	
Self-respect	−2 LL	1867.8	1869	1859	1872	1587	1591	.15**
	Ch.		−1.6	9.3	−13.1	272.0	−4.7	
Sense of	−2 LL	1991	1993	1983	1996	1695	1704	.15**
accomplishment	Ch.		−1.8	8.9	−13.5	287.5	−8.9	
Value leisure	−2 LL	571	560	558.1	571.2	504.8	510.7	.18***
(scale)	Ch.		10.9	12.8	−13.1	53.3	−5.9	

Note. Autoregressive values are for Model 3 (without time values), but were equivalent across models. The −2 log likelihood (LL) ratios of Models 2 and 3 were compared with those for Model 1, the ratios for Models 4 and 5 were compared with those for Model 3, and those for Model 6 were compared with Model 5. Degrees of freedom for the comparison of Model 2 with 1 = 1, for Model 3 with 1 = 2, for Model 4 with 3 = 2, for Model 5 with 3 = 4, and for Model 6 with 5 = 3.
****$p < .0001$; ***$p < .001$; **$p < .01$; *$p < .05$.

change to Model 6, were statistically significant. That is, adding the life events measures to the models significantly improved the prediction of variation in individuals' values over time. However, none of the individual coefficients (fixed effects) associated with the life events variables were significant at the .05 level or less, and only 3 of the 40 coefficients were significant at the .10 level. This is fewer than would be expected by chance, so, to conserve space, these coefficients are not included here. In addition, when the various life event and demographic variables were added to the models (Models 5 and 6), the autoregressive coefficients associated with the measures of values remained statistically significant and similar in magnitude to the results reported in Table 2. In other words, the consistency of the values over time did not diminish when the measures of life events and sociodemographic characteristics were added to the models, adding support to the age stability hypothesis.

Post Hoc Analyses

Although the mixed models continued to support the age stability hypothesis, with significant associations across time in both instrumental and terminal values, the analyses produced somewhat contradictory findings: a significantly better model fit with the addition of the life events variables, but no significant impact of individual variables associated with life events. We conducted several post hoc analyses to further explore this seeming contradiction. Our exploration built on the observation that although the majority of the respondents showed relatively little variation in values over time, some had more variability than others. Building on the literature reviewed above that noted the increasing rarity of "challenging" life events as people grow older, we hypothesized that the individuals with more variability over time might have different life events and that the mixed-model techniques had not captured this phenomenon. To examine these variations, we aggregated data across time for each respondent and looked at the relationship of the life events measures to variations in values over time. The average deviations for the terminal values were highly associated (respondents with high variability on one value had high variability on another), and these deviations were combined into a summative scale (coefficient alpha = .91). Variation over time in terminal values was not associated with variation in leisure values ($r = -.04$), and these were examined separately. For both measures, we broke the sample into three groups: those with the greatest variability, those with the least variability, and those in the middle.[5]

Six of the 10 comparisons involving the scores on the value items were statistically significant ($p < .05$), and all of the comparisons indicated that respondents with less variability over time had higher average scores on the value items. In other words, respondents with more variability tended to have lower scores, on average, and thus more potential room for change. Those with less variability had higher scores on the value items. This suggests that greater variability may be more of a statistical artifact regarding the range of variation on the scale (a "ceiling effect") than any "true" variability. In addition, of the 22 F tests associated with the life events and demographic variables, only 2 (9%) were significant at the .05 level or less, a result that is close to what would be expected by chance.

In additional post hoc analyses, we employed other techniques to examine our hypotheses, including bivariate correlations between ratings of values at adjacent time points, adding interaction effects of cohort (age

[5]The breakpoints were chosen to match what appeared to be somewhat "natural" breaks in the distribution. Identical results appeared when we used different break points and different numbers of comparative groups.

at the start of the study) and the impact of time to the mixed models, and looking at models employing only one of the life events variables at a time (thus increasing the degrees of freedom). None of these additional analyses provided any evidence to counter the summaries given above or support for the age stability hypothesis.[6] In other words, all of our analyses—the descriptive data, the multivariate analysis, and the post hoc analyses—provided support for the age stability hypothesis and little support for the situational influence hypothesis.

DISCUSSION

Theories regarding midlife have speculated on changes that occur over the life span, suggesting that individuals often reassess and reevaluate their life direction as they age. Empirical evidence, however, has generally found much more support for stability and continuity, with changes reflecting small alterations or "midcourse adjustments."

This paper used a unique data set to examine variation in reported values of middle-aged adults over a 9-year time span. Our analysis revealed significant evidence of stability over time in both the terminal values included in the List of Values (Kahle et al., 1986) as well as the more instrumental values attached to leisure. In addition to finding stability over time, we found limited evidence of ways in which reported life events or reflections upon the life course were related to variations in reported values. Although respondents had a variety of life experiences and reflections over time, these were not systematically related to changing values. Post hoc analyses indicated that respondents with more variability in values over time tended to have lower scores on the value scales, perhaps reflecting more potential room for movement on the measure. In short, our analyses provided support for the age stability hypothesis, with substantial continuity over time in reported values. We found little evidence to support the situational hypothesis. In addition, we found strong correlations over time in both the more global terminal values and the more specific, instrumental values associated with leisure, and thus little evidence to support our third hypothesis regarding variations across types of values.

There were a number of advantages to our analysis. The panel design of the ASOLDA study was crucial in providing continual indicators of our key variables. The high levels of education of the respondents and their dedication to the task helped ensure high response rates as well as the facility to reflect upon their lives in assessing areas such as changing life

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[6]Tables associated with these results are omitted to conserve space, but are available upon request.

structure. The data set also provided numerous indicators of our dependent variables, thus providing built-in replications of our analysis and strengthening our conclusions. Perhaps, most important, the data spanned almost a decade, providing a range of time that should be sufficient to capture possible change (Fiske & Chiriboga, 1990).

At the same time, there were limitations of the data set, reflecting, to a large extent, the flip side of its advantages. Most notably, the sample may have overrepresented individuals with relative stability, for arguably, only people with a relatively stable life would commit to such a long-term study. Although we know of no literature regarding the relationship of value stability to educational attainment, our results could have been affected by the highly educated composition of our sample. Our respondents also gave relatively high ratings to all of the values that we examined and, as noted above, the most variability was found for those who gave lower ratings. It is possible that some type of "ceiling effect" could explain the high levels of stability that we found. Future explorations of this area could try to address these issues with a more diverse sample and additional variables. In addition, our analysis looked at what Boker and colleagues (Boker, Molennar, & Nesselroade, 2009) have termed a "macroscopic" view of intra-individual variation. It is perhaps reasonable to suspect that more variability might appear if a more microscopic analysis, with very short time intervals and more precise measures, was used (see also Ram and Gerstorf, 2009). Finally, it is important to recall that our sample focused on the "middle years" of life. It is, of course, possible that the respondents had experienced more variability in values at earlier life stages when events that had strong influences on their later value orientations may have been more common (see Clausen, 1995; Wethington, 2002; Wethington, Kessler, & Pixley, 2004).

Whaley (2007) has argued that "development is a *lifelong process* [her emphasis]. Development does not cease at adolescence, and no age period exerts more impact than another; in fact, significant changes occur throughout the life course" (p. 646). The experiences of our respondents appear to support this contention. They reported a wide range of circumstances typical of those in middle age, such as the death of loved ones, changes in employment and family composition, and serious illness, all of which could contribute to changing roles and statuses. They also reported changing views of their life structure, with virtually all respondents noting movement over time from one category to another in Levinson's structure building, structure changing dichotomy.

At the same time, however, the fact that their values remained so consistent over time given these changes appears to provide even more support for the age stability hypothesis. One could speculate that the consistency of the respondents' values provided a moral compass or bearing that helped

them to weather these life changes (cf. Brandtstädter & Renner, 1990; Carpenter & Delansky, 1992). Analyzing this hypothesis could, of course, be the focus of continuing work.

REFERENCES

Alwin, D. F., & Krosnick, J. A. (1991). Aging, cohorts, and the stability of sociopolitical orientations over the lifespan. *American Journal of Sociology, 97,* 169–195.

Beatty, S. E., Kahle, L. R., Homer, P., & Misra, S. (1985). Alternative measurement approaches to consumer values: The List of Values and the Rokeach Value Survey. *Psychology & Marketing, 2,* 181–200.

Boker, S. M., Molenaar, P. C. M., & Nesselroade, J. R. (2009). Issues in intraindividual variability: Individual differences in equilibria and dynamics over multiple time scales. *Psychology and Aging, 24,* 858–862.

Brandtstädter, J., & Renner, G, (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5,* 58–67.

Browning, H. L. (1968). Life expectancy and the life cycle: Some interrelations. In R. N. Farmer, J. D. Long, & G. J. Stolnitz (Eds.), *World population: The view ahead* (pp. 227–251). Bloomington, IN: Indiana University Bureau of Business Research.

Carlsson, G., & Karlsson, K. (1970). Age, cohorts, and the generation of generations. *American Sociological Review. 35,* 710–718.

Carpenter, G. (1992). Adult perceptions of leisure: Life experiences and life structure. *Society & Leisure, 15,* 169–185.

Carpenter, G. (I994). Leisure and health during middle adulthood: A case study. In D. M. Compton & S. E. Iso-Ahola (Eds.), *Leisure and mental health* (Vol. 1; pp. 98–111). Park City, UT: Family Development Resources.

Carpenter, G. (1997). A longitudinal investigation of mid-life men who hold leisure in higher regard than work. *Society & Leisure, 20,* 189–211.

Carpenter, G. (2003). Leisure and life perceptions of a mid-life woman experiencing an epiphany associated with family. *World Leisure Journal, 45,* 44–54.

Carpenter, G. (2005). Linking research and practice: A case study in arts programming for adults. *Informed Leisure Practice, 1,* 48–64.

Carpenter, G., & Delansky, B. (1992). The continuity of selected leisure variables during middle adulthood. *The journal of recreation and leisure, 12,* 41–49.

Carpenter, G., & Murray, S. (2002). Leisure behaviors and perceptions when mid-life death is imminent: A case report. *Journal of Park and Recreation Administration, 20,* 12–36.

Carpenter, G., & Patterson, I. (2004). The leisure perceptions and leisure meanings of a mid-life couple around the time of retirement. *World Leisure Journal, 46*, 13–25.

Carpenter, G., & Robertson, B. (2000). A call for the increased use of longitudinal methods in research on adult leisure. *Leisure/Loisur, 24,* 101–129.

Caspi, A., & Roberts, B. W. (2001). Personality development across the life course: The argument for change and continuity. *Psychological Inquiry, 12,* 49–66.

Clausen, J. A. (1995). Gender, contexts, and turning points in adults' lives. In P. Moen, G. Elder, and K. Luscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 365–389). Washington, DC: American Psychological Association.

Crandall, R., & Slivken, K. (1980). Leisure attitudes and their measurement. In S. E. Iso-Ahola (Ed.), *Social psychological perspectives on leisure and recreation* (pp. 261–284). Springfield, IL: Charles C. Thomas.

Diehl, M. (2006). Development of self-representations in adulthood. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 373–398). Mahwah, NJ: Lawrence Erlbaum.

Dumazedier, J. (1967). *Toward a society of leisure*. New York: Free Press.

Eisenstadt, S. N. (1971). *From generation to generation* (2nd ed.). New York: Free Press.

Erikson, E. H. (1963). *Childhood and society* (2nd ed.). New York: Norton.

Fikse, M., & Chiriboga, D. A. (1990). *Change and continuity in adult life*. San Francisco: Jossey-Bass.

Freund, A. M., & Riediger, M. (2006). Goals as building blocks of personality and development in adulthood. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 353–372). Mahwah, NJ: Lawrence Erlbaum.

Glenn, N. D. (1980). Values, attitudes, and beliefs. In O. G. Brim Jr. and J. Kagan (Eds.), *Constancy and change in human development* (pp. 596–640). Cambridge, MA: Harvard University Press.

Gould, R. L. (1978). *Transformations: Growth and change in adult life*. New York: Simon & Schuster.

Gurel-Atay, E., Xie, G., Chen, J., & Kahle, L. R. (2010). Changes in social values in the United States, 1976–2007. *Journal of Advertising Research, 50,* 57–67.

Hampson, S. E., & Goldberg, L. R. (2006). A first large-cohort study of personality-trait stability over the 40 years between elementary school and midlife. *Journal of Personality and Social Psychology, 91,* 763–779.

Helson, R., Soto, C. J., & Cate, R. A, (2006). From young adulthood through the middle ages. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 337–352). Mahwah, NJ: Lawrence Erlbaum.

Hoge, D. R., & Bender, I. E. (1974). Factors influencing value change among college graduates in adult life. *Journal of Personality and Social Psychology, 29,* 572–585.

Holahan, C. K. (1984). Marital attitudes over 40 years: Longitudinal and cohort analysis. *Journal of Gerontology, 39,* 49–57.

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology, 54,* 638–646.

Hutchinson, S. L., & Kleiber, D. A. (2005). Gifts of the ordinary: Casual leisure's contributions to health and well-being. *World Leisure, 3,* 2–15.

Ingelhart, R. (1977). *The silent revolution*. Princeton, NJ: Princeton University Press.

Jin, J. (2010). *Stability and change in values: A meta-analysis of longitudinal studies* (Thesis for the degree of Master of Arts in Psychology). University of Illinois at Urbana-Champaign, Champaign, Illinois.

Kahle, L. R. (Ed.). (1983). *Social values and social change: Adaptation to life in America*. New York: Praeger.

Kahle, L. R. (1996). Social values and consumer behavior: Research from the List of Values. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario Symposium* (Vol. 8, pp. 135–151). Mahwah, NJ: Lawrence Erlbaum Associates.

Kahle, L. R., Beatty, S., & Homer, P. (1986). Alternative measurement approaches to consumer values: The List of Values (LOV) and Values and Life-Style (VALS), *Journal of Consumer Research, 13,* 405–409.

Kahle, L. R., Poulos, B., & Sukhdial, A. (1988). Changes in social values in the United States during the past decade, *Journal of Advertising Research, 28,* 35–41.

Kahle, L. R., & Timmer, S. G. (1983). A theory and a method for studying values. In L. R. Kahle (Ed.), *Social values and social change: Adaptation to life in America* (pp. 43–69). New York: Praeger.

Kahle, L. R., & Valette-Florence, P. (2012). *Marketplace lifestyles in an age of social media: Theory and method*. Armonk, NY: M. E. Sharpe.

Kiecolt, K. J. (1988). Recent developments in attitudes and social structure, *Annual Review of Sociology, 14,* 381–403.

Konty, M. A., & Dunham, C. C. (1997). Differences in value and attitude change over the life course. *Sociological Spectrum, 17,* 277–197.

Levinson, D. J. (1996). *The seasons of a woman's life*. New York: Alfred A. Knopf.

Levinson, D. J., Darrow, C. N., Klein, E. B., Levinson, M. H., & McKee, B. (1978). *The seasons of a man's life*. New York: Alfred A. Knopf.

Mannell, R. C. (2007). Leisure, health, and well-being. *World Leisure, 3,* 114–127.

Mannell, R. C., & Kleiber, D. A. (1997). *A social psychology of leisure*. State College, PA: Venture Publishing.

Mannheim, K. (1953). The sociological problem of generations. In P. Kecskemeti (Ed.), *Essays on the sociology of knowledge* (pp. 276–320). New York: Oxford University Press.

McAdams, D. P. (2008). Personal narratives and the life story. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 478–500). New York: Guilford.

Orth, U., & Kahle, L. R. (2008). Intrapersonal variation in consumer susceptibility to normative influence: Toward a better understanding of brand choice decisions. *Journal of Social Psychology, 148,* 423–447.

Neulinger, J. (1981). *To leisure: An introduction*. Boston, MA: Allyn and Bacon.

Newcomb, T. M., Koenig, K. E., Flacks, R., & Warwick, D. P. (1967). *Persistence and change*. New York: Wiley.

Patterson, I., & Carpenter, G. (2003). By the decade: An exploration of the leisure perceptions and preferences of mid-life married couples. *Annals of Leisure Research, 6,* 153–168.

Ram, N., & Gerstof, D. (2009). Time-structured and net intraindividual variability: Tools for examining the development of dynamic characteristics and processes. *Psychology and Aging, 24,* 778–791.

Rantanen, J., Metsäpelto, R., Feldt, T., Pulkkinen, L., & Kokko, K. (2007). Long-term stability in the Big Five personality traits in adulthood. *Personality and Social Sciences, 48,* 511–518.

Raudenbusch, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.

Roberts, B. W., & Wood, D. (2006). Personality development in the context of the neo-socioanalytic model of personality In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 11–40). Mahwah, NJ: Lawrence Erlbaum.

Roberts, B. W., Helson, R., & Klohnen, E. C. (2002). Personality development and growth in women across 30 years: Three perspectives. *Journal of Personality, 70,* 79–101.

Rokeach, M. (1968). *Beliefs, attitudes, and values*. San Francisco: Jossey Bass.

Rokeach, M. (1973). *The nature of human values*. New York: Free Press.

Rokeach, M. (1979). *Understanding human values: Individual and societal*. New York: Free Press.

Ryder, N. B. (1965). The cohort as a concept in the study of social change. *American Sociological Review, 30,* 843–861.

Sarason, I., Johnson, J., & Siegel, J. (1978). Assessing the impact of life changes: Development of the life experiences survey. *Journal of Consulting and Clinical Psychology, 46,* 932–946.

Singer, J. S., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford.

Spates, J. L. (1983). The sociology of values. *Annual Review of Sociology, 9,* 27–49.

Terracciano, A., Costa, P. T., & McCrae, R. R. (2006). Personality plasticity after age 30. *Personality and Social Psychology Bulletin, 32,* 999–1009.

Veroff, J., Douvan, E., & Kulka, R. (1981), *The Inner American*, New York: Basic Books.

Wethington, E. (2002). The relationship of turning points at work to perceptions of psychological growth and change. *Advances in Life Course Research, 7,* 111–131.

Wethington, E., Kessler, R. C., & Pixley, J. E. (2004). *How healthy are we? A national study of well-being at midlife* (1st ed.). Chicago: The University of Chicago Press.

Whaley, D. E. (2007). A life span developmental approach to studying sport and exercise behavior. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 643–661). Hoboken, NJ: Wiley.

Witt, P. A., & Ellis, G. D. (1985). Development of a short form to assess perceived freedom in leisure. *Journal of Leisure Research, 17,* 225–233.