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ORIGINAL INVESTIGATION

Unexpected retirement from full time work after age 62: consequences for life satisfaction in older Americans

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Abstract Recent policy shifts in the United States have resulted in an increase in the number of older workers remaining in the labor force. Increases in the retirement age for receiving full Social Security benefits coupled with declining pension funds and the erosion of employer retiree health benefits, mean that current cohorts of older workers may fully expect to work longer than previous generations. Yet, working longer may not always be possible due to health problems, outdated skills, economic insecurity, and competing obligations. We examine the consequences of unmet expectations for full time work after age 62 for life satisfaction in a nationally representative sample of older Americans. With longitudinal data from the Health and Retirement Study (1998–2008), this paper uses repeated measures of expectations for later life work among a cohort of Americans ($N = 1684$) gathered prospectively over an 8-year period, and examines the effects of unfulfilled expectations on subsequent life satisfaction. Using generalized growth mixture modeling three latent classes of individuals were identified with distinct trajectories of later life work expectations (low expectations, high expectations, and neutral expectations for full time work after age 62). A majority of men had generally high expectations to work full time past age 62, whereas the majority of women reported a low probability of working full time after age 62. When comparing expectations to actual full time work past age 62, we found no effects of unmet expectations for women. However, men with less job stability (reflected by shorter job tenure and lower incomes) generally had high expectations to work longer, and their life satisfaction scores were significantly lower when these expectations were not realized. The hazards of missed expectations for later life work have consequences for subjective well-being in older adults.

Keywords Work · Expectations · Retirement · Life satisfaction · Subjective well-being

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The proportion of Americans working beyond age 65 decreased dramatically in the last half of the 20th century. A growing appreciation for later-life leisure coupled with enhanced social security benefits and increased private pension coverage (Rix 2001) propelled increasing numbers of workers to take "early retirement" in the post-war years (see OECD 2005; Marshall and Taylor 2006). Beginning in 1961, it was possible for men to claim reduced social security benefits at the age of 62 (for women, early reduced benefits became available in 1956) and the labor force participation rates of men aged 62–64 fell from 75 % in 1963 to less than 50 % in the mid-1980s (Federal Interagency Forum on Aging-Related Statistics 2006). These trends continued to persist into the 21st Century: in 2003, over two-thirds of retirement benefits paid to men and almost 75 % of those paid to women were early retirement benefits (United States Social Security Administration 2003).

Yet, in more recent years there has been a 180 degree shift from policies supporting early withdrawal from the labor force to policies designed to promote retention of older workers (Frerichs and Taylor 2005; OECD 2005;

Penner et al. 2002; Rix 2005). For example, the United States (U.S.) Social Security Amendments of 1983 introduced phased increases in the retirement age for receiving full Social Security benefits (to age 67 by 2022), and a phased reduction in the retirement benefits available to Americans at age 62. While the policy initiatives to promote "early exit" from the workforce were motivated by a concern to create job vacancies for the large American Baby Boom cohort as they entered the labor force (Kohli et al. 1991; McMullin et al. 2005; Schmähl 1989), the more recent policy reversal is motivated by concerns as this large cohort approaches retirement. The new policy focus is aimed at reducing the anticipated draw-down on pensions and state health care benefits (the so-called "pension burden"), while increasing the years of tax and contribution support for such state programs (Social Security Trustees 2006; Medicare Trustees 2006). At the same time, concerns about health care costs have led many employers to terminate their retiree health plans, providing further reasons for older workers to consider working longer. In 2005, only 33 % of employers with more than 200 employees offered retiree health benefits, down from 68 % in 1988 (Kaiser Family Foundation and Health Research Educational Trust 2005).

Recent reports of the "end of early retirement" (Korczyk 2004) suggest that these policy shifts have had some consequences for stemming further trends toward early labor force withdrawal among American workers. Beginning in the mid-1980s, labor force participation rates for older workers began to level off and then rose to as much as 18 % points above the expected rate for men aged 60–69 in 1998 (Quinn 1999). Between 1993 and 2005, labor force participation rates for American men aged 65–69 increased from 25 to 34 % while rates for men aged 62–64 increased from 45 to 53 % (Federal Interagency Forum on Aging-Related Statistics 2006).

As a result, current cohorts of older workers may fully expect to work longer. Findings from the U.S. indicate that recent cohorts of working men (age 51–56 in 2004) reported a 4.5 % higher probability of working full time after the age of 62 than male workers of similar age in 1992 (Mermin et al. 2007). For American women of the same age, the corresponding probability was 3.3 % higher over the same period. The authors found that declines in defined benefit pension coverage over this period, as well as decreases in employer health insurance for retirees, accounted for much of this increase in expectations for working longer (Mermin et al. 2007).

Yet, working longer may not always be possible. Older workers' ability to work depends on their health, skills, and competing obligations. Their willingness or desire to work to older ages may depend on their real and perceived economic security, their sense of whether they can afford to retire, and their job and career satisfaction, or the desire to maintain active engagement with other people (Toder et al. 2008). Furthermore, their opportunity for continuing labor force participation is affected by demand characteristics related to the general state of the economy and the need for labor in specific sectors (Skirbekk 2008). While retirement is generally positive or neutral for mental health (Mein et al. 2003), research suggests that unanticipated or involuntary retirement (Herzog et al. 1991; Marshall et al. 2001), can have negative consequences for mental health and subjective well-being, especially when these situations are contrary to personal preferences (Henkens et al. 2008). Such discordant situations likely have adverse effects through stress pathways that are fueled by poor timing, a lack of control, and perceived economic problems (Minkler 1981; Reis and Gold 1993).

The purpose of this research was to examine relatively long-held expectations for later life work among American workers using repeated measures gathered prospectively over a period of 8 years (1998–2006), and examine the degree to which expectations agreed with actual full-time work at age 62–66. We then examine the consequences of this agreement (or disagreement) for subjective well-being using a self-reported multi-item measure of global life satisfaction (Diener et al. 1985) that taps satisfaction with where persons are in life based on a judgment of experience and expectations (Diener et al. 2003).

Changing career patterns and retirement expectations

The traditional tripartite pattern of the life course was heavily shaped by work, and quite clearly demarcated into three major stages: preparation for work, the working years, and retirement (Cain 1964; Kohli 1986). Using 1992 data from the U.S. Health and Retirement Study (HRS), Ekerdt et al. (2000) found that three-quarters of American women and men in their fifties provided an estimated time when they would retire. This suggests that the tripartite model of the life course, or at least the division between the second and third phases of it that is marked by a retirement event, had widespread cultural validity in the U.S. in the early 1990s. While this still exists for some, we increasingly see an emerging pattern of a much more disordered life course (for reviews, see Marshall and Mueller 2003; Marshall and Clarke 1998). Large proportions of people in the developed world (with the continued exception of Japan) increasingly follow more individualized working life course trajectories with numerous job changes instead of a single "career job," and they experience a pre-retirement transition characterized by bridge jobs, part-time work, perhaps education and retraining, and finally full retirement in the form of a permanent exit from the labor

force (i.e., neither employed nor seeking work) (Quinn 2000).

This instability is illustrated rather dramatically by a series of briefing statements from the Center for Retirement Research (CRR) at Boston College, based on the nationally representative U.S. Retirement Confidence Survey (CRR 2004a, b, c). The survey shows that two-thirds (68 %) of respondents are "very" or "somewhat confident" that they will have enough money to live comfortably throughout their retirement (CRR 2004a, p. 1). However, the typical household (age 55–64) had less than $50,000 of non-employer pension savings. The overestimation of pension coverage is due in large part to an erroneous belief of many respondents that they will receive both defined benefits and defined contribution plan pensions in retirement, whereas there has been a significant shift away from the former to the latter (CRR 2004b). For example, between 1992 and 2004 the proportion of workers aged 51–56 who received pension coverage in the form of a defined benefit plan decreased by 24 %, while the rate of coverage from defined contribution plans increased by 37 % (Mermin et al. 2007).

Confusion and uncertainty also surrounds age eligibility for Social Security benefits. Because of the Social Security Amendments of 1983, the age at which full benefits could be claimed has risen by one-fourth of a year for every year since 2000. Yet, in 2004 when asked the age at which they would qualify for full Social Security benefits, only 18 % of Americans answered correctly (CRR 2004c). More than half thought they would be eligible earlier than the correct age (for most Americans, the correct age is somewhere between 65 and 67), 6 % estimated a later age, and over a fifth just "did not know." Moreover, 12 % of respondents incorrectly selected age 62 (which is the age for early benefits receipt) (CRR 2004c).

The main point of these trends is that changes in labor market experiences, particularly at the tail end of the working life course, and increasing financial insecurity surrounding retirement, may increasingly prompt older workers to consider working past age 62. When this does not occur, we suggest that there may be negative consequences for subjective well-being, especially among those who had persistently expected to work longer. Given the increasing labor force participation rates for Americans past age 62, we ask: What are the psychosocial consequences of unmet expectations for later life work?

Research on expectations for work and retirement

For the most part, existing research on retirement expectations (or intentions to work past a given age, typically age 62 or age 65) has focused on anticipated retirement income (CRR 2004a, b, c), expected age of retirement (Bernheim 1989), or the effects of health events on changes in retirement expectations (Benitez-Silva and Dwyer 2003; Dwyer and Hu 2000; Dwyer 2001). For example, declining health is a powerful predictor of an individual's expectation to work beyond age 62, having substantially larger effects on expectations than changes in one's financial situation (McGarry 2004). Yet, controlling for health, higher household income is associated with expectations to retire early among both men and women (Pienta and Hayward 2002). While attention has focused on the economic considerations prompting older workers to remain in the labor force and the beneficial consequences for financial security at older ages (Mermin et al. 2007; Johnson 2009), comparatively less research has examined the relationship between psychosocial factors and subjective intentions to work in later life. Panel data from midlife men and women in Finland indicate that lower life satisfaction is associated with increased risk for early retirement due to disability (Harkonmäki et al. 2009). However, the psychosocial *consequences* of unmet retirement expectations have not been well investigated, even though missed expectations for retirement or for later life work could foreseeably have consequences for subjective well-being.

The negative effects of unexpected retirement or unanticipated work in later life can be understood in light of what is known about the importance of predictability and control over life events. Typical examples of stressful life events include widowhood, relocation, and divorce; evidence suggests that these events are associated with decreased well-being, particularly when they are unexpected, poorly timed, or when perceived demands outweigh individuals' perceived response capability (Minkler 1981). Herzog et al. (1991) argue that retirement has only negative effects when individuals are forced to retire against their personal preferences. Other studies have found that early, involuntary retirement decreases retirement satisfaction (Beck 1984) and overall well-being (Peretti and Wilson 1975).

Using data from a sample of early retirees from Bell Canada, Marshall et al. (2001) found that unintended retirement (expected to work after being forced to retire from Bell, but subsequently did not work) was associated with greater life stress and reduced life satisfaction among Canadian men. Working longer than expected and retiring earlier than expected were both associated with more depressive symptoms in a cohort of older Americans (Falba et al. 2008). However, these studies relied on expectations measured at a single point in time. Even with panel data, expectations reported in the wave preceding retirement are typically used, based on the argument that expectations only become "valid" as retirement becomes imminent

(Bernheim 1989; Abraham 2004). However, variability and change in long-held expectations for later life work or retirement may have significant consequences for subsequent well-being across actual retirement outcomes.

In this paper, we use longitudinal data from the nationally representative U.S. Health and Retirement Study (1998–2008), with repeated measures of later life work expectations gathered prospectively from a cohort of older Americans (age 52–56 in 1998) over a period of 8 years. By making use of a question that asks respondents about their perceived chances of working full time after the age of 62 (asked repeatedly over an 8 year period), we focus on the long term trajectory of expectations for later life work and the degree to which these expectations are realized. Our interest is in discordance between expected and actual full time work after age 62, and its consequences for life satisfaction (Fig. 1). Thus, individuals can experience agreement between expected and actual full time work activity after age 62 (top left and bottom right cells, Fig. 1), where expectations for full time work are realized or alternatively, expectations for retirement from full time work are realized. Conversely, discordance between expected and actual full time work in later life is either represented by unexpected retirement from full time work (top right shaded cell for those who expected to work full time after age 62 but are subsequently not working full time) or by unanticipated work (bottom left shaded cell for those who did not expect to work full time after age 62 but subsequently find themselves working full time).

We examine these two types of discordance and their effects on life satisfaction by taking advantage of a statistical method that classifies later life work expectations based on repeated measures collected over time, rather than relying on expectations gathered at a single point in time. Thus, we draw on long held expectations for later life work, which may be more salient in shaping later life satisfaction depending on the degree to which these expectations are realized. Because of the established gender differences in work histories and retirement expectations (Gendell and Siegel 1996; Honig 1996; Pienta and Hayward 2002), we conduct separate analyses for men and women.

		Actually Working Full Time after Age 62?	
		YES	NO
Expect to Work Full Time after Age 62?	YES	Anticipated Work	Unexpected Retirement
	NO	Unanticipated Work	Voluntary Retirement

Fig. 1 Conceptual model of discordance between expected and actual full time work after age 62

Data and methods

Data

We use panel data from the Health and Retirement Study (HRS), a longitudinal survey of Americans age 51 and over conducted biennially since 1992 (HRS 2008). African Americans, Hispanics, and households in the state of Florida were over-sampled and re-weighted in the analyses as discussed in more detail below. We use the RAND HRS data files (version K) prepared by the RAND Center for the Study of Aging and funded by the Social Security Administration, with additional support from the National Institute on Aging (RAND 2011).

The HRS survey asks detailed questions about work activity, retirement expectations, and finances, but until recently, has collected only limited data on psychosocial aspects of well-being. We therefore use data on life satisfaction gathered from a random one-half sample of respondents who completed an additional self-administered questionnaire on subjective psychological and social well-being that was left behind following the face-to-face interview in 2008. The response rate among those who were invited to complete the questionnaire was 90.6 %.

Our analyses center on workers in one cohort of HRS respondents, those known as the "War Babies" (born 1942–1946) who were interviewed biennially from 1998 (age 52–56) to 2008 (age 62–66) ($N = 2{,}359$; 926 men and 1,433 women). This group of older adults sits at the leading edge of the American Baby Boom cohort, and would have been entering the labor force in the mid-1960s when policy initiatives to promote early retirement were first implemented (OECD 2005). Yet, they would also have experienced the economic and political instability surrounding retirement as they approached age 62 in the early part of this century. We restrict our analyses to 1,920 respondents (763 men and 1,157 women) who were working for pay and less than age 62 in at least one wave over the study period, since these were the individuals who were asked about their expectations of working full time past age 62. We also eliminated 236 observations with missing data on both sociodemographic covariates and life satisfaction ($N = 116$ men and 120 women). Respondents missing only life satisfaction data were included in the model under the assumption that their work expectations are not different from those with data on life satisfaction, since the psychosocial questionnaire (which included the measure of life satisfaction) was administered to a random subsample of all HRS respondents. Our final sample size is 1684 (647 men and 1,037 women).

Measures

Life satisfaction in 2008 was assessed with a 5-item measure developed by Diener et al. (1985). Respondents were asked to what extent they agree with the following five statements: (1) "In most ways my life is close to ideal"; (2) "The conditions of my life are excellent"; (3) "I am satisfied with my life"; (4) "So far, I have gotten the important things I want in life"; and (5) "If I could live my life again, I would change almost nothing". Responses range from strongly disagree (coded 1) to strongly agree (coded 7), and are averaged to produce an index of life satisfaction that ranges from 1 to 7. Alpha reliability is .88 and factor loadings range from .73 to .88.

In order to capture the temporal variability in *later life work expectations* among older workers, we use repeated measures of work expectations collected prospectively from 1998 to 2006 (five waves of data collection). Later life work expectations were assessed through a question asked of respondents at each wave: "Thinking about work in general and not just your present job, what do you think the chances are that you will be working full time after the age of 62?" Probabilities were recorded on a percentage scale (0–100 %). Individuals had to be younger than 62 and had to be working for pay in order to be asked the question. Thus, these are conditional probabilities, given that the respondent is already working. In order to assess discordance between actual and expected full time work after age 62, as it influences life satisfaction in 2008, we use a dummy variable to indicate whether respondents were actually *working full time* (at least 35 h per week for 36 weeks) in 2008 (when respondents were age 62–66).

We control for three background influences in our analyses: (1) individual socioeconomic status; (2) sociodemographic characteristics (age, marital status, and race/ethnicity); and (3) recent labor force history. *Socioeconomic status* is captured by completed education and household income. Two dummy variables contrast less than high school education and high school education with college education or higher. Total household income is recorded in nominal \$000′s and log transformed to correct positive skew. We use imputed values provided in the RAND HRS files (RAND 2011) for observations with missing data on income. *Age* is measured in years. *Race/ethnicity* is captured by a dummy variable contrasting white respondents with black and other race/ethnic respondents. *Marital status* is modeled using three dummy variables contrasting separated/divorced, widowed, and never married with married respondents. *Work status* is assessed by full time or part time work in 1998, and we control for the respondent's years of tenure on the 1998 job. We also include a dummy variable for *pension coverage* in 1998 to indicate whether the respondent was enrolled in any pension plan in his/her current job.

Because changes in health are strongly related to changes in later life work expectations (McGarry and Kathleen 2004; Benitez-Silva and Dwyer 2005), we also control for *chronic health problems* over time, modeled as a time-varying covariate. We use an index of the number of ever-diagnosed health problems at each wave, ranging from 0 to 8 and capturing the following chronic health conditions: hypertension, diabetes, cancer, chronic lung disease, heart problems, stroke, psychiatric problems, and arthritis.

Statistical analyses

We used generalized growth mixture modeling to identify different latent classes of individuals according to their long term expectations for full time work after age 62, and then examined the effects of actual work status after age 62 on life satisfaction by class membership. Growth mixture modeling is an extension of conventional growth modeling except that it relaxes the assumption of a single population trajectory. By means of latent trajectory *classes* (categorical latent variables), the growth mixture model allows different classes of individuals to vary around different mean growth curves (Muthen 2004; Muthen and Muthen 2000).

The trajectory of interest in this paper is the reported probability of working full time after the age of 62, gathered prospectively over 8 years (5 waves) of data collection (Fig. 2). Because the model allows for unbalanced data, individuals can contribute anywhere from 1 to 5 data points. We speculate that some individuals may initially expect to be working full time after the age of 62, while others may consistently expect to take early retirement. These trajectories of reported probabilities represent distinct latent classes of later life work expectations that may have very different consequences for subsequent life satisfaction, particularly as they interact with one's *actual* labor force participation after age 62.

The measurement part of the model (top part of Fig. 2) captures the growth factors (intercept and slope) as measured by multiple indicators of the reported probability of working full time after age 62. A linear growth model is specified with equidistant time points, but we also test the fit of a non-linear form by using quadratic terms. The structural part of the model (bottom part of Fig. 2) incorporates the growth model within a larger latent variable model by relating the growth factors to other observed and latent variables. Of particular interest is the latent trajectory class variable, which represents the unobserved subpopulation of membership for respondents. This allows a separate growth model for each of the latent classes. The

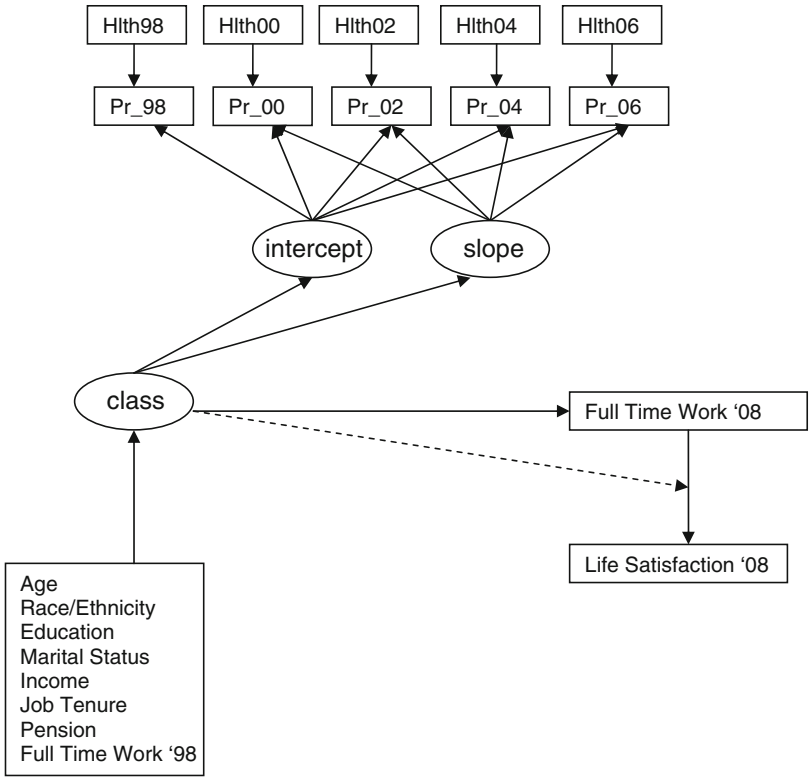

Fig. 2 Generalized growth mixture model for reported probability of working full time after age 62: Health and Retirement Study, 1998–2008

Pr_98—Pr_06 refer to the perceived probabilities of working full time after age 62 reported at each of the 5 waves of data collection (1998-2006).

Hlth_98—Hlth_06 refer to the number of chronic health conditions at each of the 5 waves of data collection (1998-2006).

socioeconomic and socio-demographic covariates predict class membership in a multinomial logistic regression, and the model incorporates health problems as a time varying covariate. As a general extension of the growth mixture model, we include a distal outcome (Muthen 2004), actual full time work status in 2008, and examine the relationship between full time work and life satisfaction as it varies across the latent classes of previously held later life work expectations (interaction captured by dotted line in Fig. 2), controlling for baseline sociodemographic characteristics (age, race/ethnicity, and education), as well as concurrent (2008) health, marital status, and household income (pathway not illustrated in Fig. 2).

Models are fit in a sequential process by incrementally increasing the number of latent classes. While substantively-based theory is used as the primary means to determine the best fitting model, good fitting models are characterized by (1) low values for the Bayesian Information Criterion (BIC) and Akaike Information Criterion (AIC); (2) a statistically significant Lo–Mendell–Rubin likelihood ratio test; (3) distinct posterior probabilities for individual class membership; and (4) differences in the mean outcome variable across classes (Muthen and Muthen 2000; Muthen 2004). All models are estimated in Mplus Version 6.12 (Muthen and Muthen 1998) using full information maximum likelihood (FIML) with robust standard errors. Multiple random starts are used to minimize local optima in the likelihood. Compensatory respondent-level weights are used to adjust for unequal selection probabilities in HRS as well as for sample attrition and mortality. Our statistical model allows for respondents with as little as one observation to enter the model. In addition, by including variables related to attrition (age, education, marital status, and occupational status), maximum likelihood produces unbiased coefficients under the assumption that the attrition process is conditional on observed variables in our models (Cnaan et al. 1997; McArdle and Hamagami 1992; Feng et al. 2006).

Results

Sociodemographic characteristics for the study sample are presented in Table 1. Consistent with the demographics of the over-50 population in the US, the respondents in this cohort were predominantly white, married, with a high

Table 1 Descriptive statistics for study sample U.S. Health and Retirement Study 1998–2008 ($N = 1684$)

	Weighted % or mean (SD)	
	Men ($N = 647$)	Women ($N = 1037$)
Sociodemographic characteristics in 1998		
Age (range 52–56 years)	53.86 (1.36)	53.83 (1.33)
White	86.32 %*	83.67 %*
Black	8.99 % %*	11.06 %*
Other race/ethnicity	4.52 %*	5.27 %*
Education		
Less than high school	14.07 %*	16.93 %*
High school	56.77 %*	62.66 %*
College degree or higher	29.16 %*	20.41 %*
Household income ($'000, log transformed)	10.74 (1.34)*	10.49 (1.43)*
Marital status		
Married	78.51 %*	68.36 %*
Separated/divorced	16.05 %*	20.61 %*
Widowed	1.33 %*	6.82 %*
Never married	4.10 %	4.13 %
Full time work	75.68 %*	52.01 %*
Job tenure (range 0–42 years)	12.31 (12.16)*	8.03 (9.75)*
Pension	49.38 %*	41.04 %*
Number of chronic health problems (range 0–7)	.99 (1.14)*	1.12 (1.18)*
Reported expectations for later life work		
Reported probability (%) of working full time at age 62:		
1998 (Age 52–56)	54.65 (39.05)*	40.52 (37.64)*
2000 (Age 54–58)	54.97 (37.42)*	45.92 (38.03)*
2002 (Age 56-–60)	56.49 (36.97)*	47.47 (37.75)*
2004 (Age 58–61)	60.34 (38.14)*	52.29 (38.83)*
2006 (Age 60–61)	45.62 (43.40)*	34.43 (38.58)*
Work and psychosocial status in 2008 (Age 62–66)		
Full time work	34.97 %*	21.54 %*
Life satisfaction (range 1–7)	5.05 (1.42)	5.03 (1.62)

SD standard deviation

*Denotes statistically significant differences between men and women ($p < .001$)

school education. The vast majority (75 %) of men was working full-time in 1998, just under half were enrolled in a pension plan, and on average these men had been working in their current job for over a decade. On the other hand, women showed significantly less attachment to the labor force, as evidenced by their shorter job tenure, lower rates of enrolment in a pension plan, and lower proportion of full time workers. Accordingly, women reported much lower expectations than men for working full time after age 62 (reported probabilities ranging from 34 to 40 % for women and from 45 to 60 % for men over this 8 year period). At the age of 62–66 (in 2008), over a third of men and about one-fifth of women were continuing to work full time.

The next step in the modeling process fit a systematic progression of growth mixture models. For both men and women, the change in the BIC and AIC values, coupled with a significant Lo-Mendel-Rubin Likelihood ratio test ($p < .0001$, not shown), suggested that a three class solution is preferable to one with fewer classes. Table 2 presents the regression coefficients for each of the three growth curves according to the 3 class solution (there was no evidence of any quadratic form to the models). The proportion of individuals in each of the three classes is also given. Membership in each class showed good classification quality with individuals most likely to belong to their predicted class (posterior probability was markedly higher (>.90) than for the other class). Adding a fourth class

Table 2 Linear regression coefficients from growth mixture models for full time work expectations after age 62: U.S. Health and Retirement Study (1998–2006)

	Men β (s.e.)	Women β (s.e.)
Class 1 (low expectations for working FT after age 62)	38.4 %	49.8 %
Intercept	8.04 (.82)***	6.06 (.51)***
Year	4.55 (.45)***	4.13 (.33)***
Class 2 (Neutral expectations for working FT after Age 62)	15.0 %	20.7 %
Intercept	50.08 (1.22)***	48.16 (.97)***
Year	.25 (.64)	−1.51 (.52)**
Class 3 (high expectations for working FT after age 62)	46.6 %	29.5 %
Intercept	91.26 (.65)***	90.07 (.78)***
Year	−3.75 (.37)***	−4.30 (.41)***
Goodness of fit statistics	BIC = 23705.67	BIC = 34763.15
	AIC = 23631.48	AIC = 33682.29

FT full time; *s.e.* standard error; *BIC* Bayseian information criterion; *AIC* Akaike information criterion

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests)

(model not shown) did not result in any improvement in model fit and the posterior probabilities did not differentiate class membership well.

The three latent classes represent distinct trajectories of later life work expectations for men and women. Class 1 (representing 38 % of men and 50 % of women) captures generally low expectations for full time work after age 62. In 1998, when they were between the ages of 52 and 56, men and women in this latent class reported a relatively low probability (less than 10 % chance) of working full time after the age of 62, although their expected chances of working full time increased steadily over the next 8 years (slope = 4.55 for men and 4.13 for women). (Predicted trajectories are illustrated in Fig. 3a, b.) Conversely, individuals in class 3 (representing 47 % of men and 30 % of women) reported a much higher probability of working full time after age 62. In 1998 (age 52–56), these individuals started out with very high expectations (over 90 % chance) that they would be working full time after age 62, but their expectations declined over the next 8 years at a rate of 3.8 % per year for men and 4.3 % per year for women (Fig. 3).

In the middle of these two groups is a third latent class representing a minority of the sample (15 % of men and 21 % of women), who had more neutral expectations for full time work after age 62, and these expectations remained relatively stable over the next 8 years (slope not significantly different from zero among men, and declining at a rate of 1.5 % per year for women). For women, time varying chronic health problems had no significant effect on the trajectory slopes across all 3 classes (regression coefficient = −.12, standard error = .34). But for men, in all 3 classes chronic health problems over time was associated with a lower reported probability of working full time (regression coefficient = −2.51, standard error = .63, $p < .001$). Allowing health to affect the trajectories differently across classes did not result in any

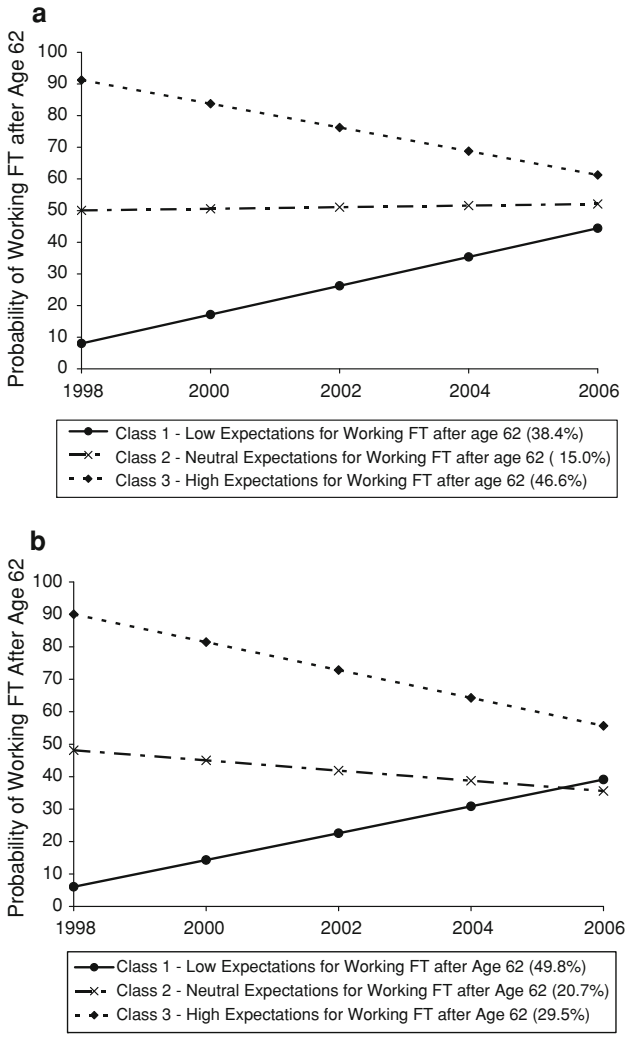

Fig. 3 **a** Estimated curves for reported probability of working full time (FT) after Age 62: 3 class solution U.S. Health and Retirement Study (Men). **b** Estimated curves for reported probability of working full time (ft) after age 62: 3 Class Solution U.S. Health and Retirement Study (Women)

Table 3 Regression models for life satisfaction in 2008 by later life work expectations (1998–2006): U.S. Health and Retirement Study

	Men β (s.e.)	Women β (s.e.)
Class 1 (low expectations for working FT after age 62)		
Intercept	3.89 (1.18)***	5.21 (.51)***
Working full time in 2008[a]	−.49 (.55)	.28 (.28)
Class 2 (neutral expectations for working FT after age 62)		
Intercept	3.71 (1.16)***	4.35 (1.29)***
Working full time in 2008[a]	−.39 (.29)	−.79 (.52)
Class 3 (high expectations for working FT after age 62)		
Intercept	3.08 (1.17)**	5.19 (.62)***
Working full time in 2008[a]	1.40 (.51)**	.06 (.42)
Controls		
Age	.20 (.07)**	−.10 (.15)
White[b]	.30 (.20)	−.26 (.57)
Less than high school education[c]	−.25 (.27)	.34 (.77)
High school education[c]	−.41 (.18)*	−.31 (.44)
Number of health problems	−.24 (.06)***	−.24 (.06)***
Separated/divorced[d]	−.43 (.30)	−.43 (.30)
Widowed[d]	−.35 (.45)	−.35 (.45)
Never married[d]	−.76 (.58)	−.76 (.58)
Household income (log transformed)	.15 (.10)	.15 (.10)

FT full time; s.e. standard error

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests)

[a] Reference group is not working full time in 2008

[b] Reference group is black or other race/ethnicity

[c] Reference group is college degree or higher

[d] Reference group is married

improvement in model fit (according to changes in the BIC and AIC statistics). As a result, the effect of health on the trajectories of later life work expectations was constrained to be equal across all 3 latent classes.

The next step in the modeling process adds the distal outcome (life satisfaction) in 2008 to the growth mixture model. In these models, the relationship between life satisfaction and full time work in 2008 varies by long term expectations for full time work past 62 (reflected by class membership). Table 3 presents results for models regressing life satisfaction in 2008 on full time work status in 2008, controlling for covariates. Regression coefficients for each class are presented for men and women. Controlling for age, race/ethnicity and education, as well as concurrent health, marital status and income, men who had higher expectations to work full time after age 62 (class 3) reported significantly higher life satisfaction if their expectations were realized ($\beta = 1.40$, $p < .01$, Table 3). Conversely, men with the same set of expectations who found they were not working full time past 62 reported significantly lower life satisfaction, all other things being equal. Working full time past age 62 did not have statistically significant consequences for life satisfaction among men who had lower (class 1) or more neutral (class 2) expectations for full time work. Moreover, full time work past age 62 was not related to life satisfaction among women, regardless of their history of expectations for full time work at this point in their lives.

Insights into the characteristics of individuals in each of the three different classes can be gathered from Table 4, which reports the results from a multinomial logistic regression for class membership (adjusted odds ratios and 95 % confidence intervals) using class 2 (neutral expectations for full time work) as the reference class. Men who had higher expectations of working full time past age 62 (class 3) tended to be younger, with lower incomes, and with shorter job tenure than men with more neutral expectations to work past age 62. On the other hand, men with persistently lower expectations to work full time past age 62 (class 1) were more likely to have a pension and longer job tenure than men with more neutral expectations. Men reporting lower expectations for full time work past age 62 were also more likely to be widowed (although the wide confidence interval around the estimate indicates

Table 4 Multinomial logistic regression for latent class membership of later life work expectations: U.S. Health and Retirement Study (1998–2008)

	Latent class 1[a] (low expectations for FT work after age 62) OR (95 % CI)	Latent class 3[a] (high expectations for FT work after age 62) OR (95 % CI)
Men		
Age	.87 (.72, 1.05)	.51 (.34, .79)**
White[b]	.87 (.45, 1.67)	.78 (.24, 2.53)
Less than high school education[c]	2.04 (.76, 5.51)	2.11 (.48, 9.22)
High school education[c]	2.09 (1.00, 4.02)*	.95 (.35, 2.58)
Separated/divorced[d]	1.39 (.57, 3.40)	2.51 (.80, 7.89)
Widowed[d]	14.22 (1.16, 91.49)*	1.01 (.63, 2.65)
Never married[d]	1.26 (.23, 7.02)	1.19 (.21, 6.64)
Household income (log transformed)	1.35 (.85, 2.14)	.68 (.42, .98)*
Pension[f]	2.45 (1.30, 4.63)**	1.28 (.48, 3.43)
Full time work in 1998[e]	.14 (.05, .36)***	.10 (.04, .28)***
Job tenure (years)	1.04 (1.02, 1.06)***	.96 (.92, .99)*
Women		
Age	1.23 (.67, 2.26)	1.40 (.77, 2.50)
White[b]	2.32 (1.08, 4.97)*	3.57 (1.46, 8.81)**
Less than high school education[c]	1.49 (.45, 4.90)	.44 (.11, 1.60)
High school education[c]	.89 (.37, 2.16)	.77 (.32, 1.81)
Separated/divorced[d]	1.72 (.30, 9.81)	1.88 (.37, 9.36)
Widowed[d]	1.78 (.18, 17.14)	2.39 (.24, 23.18)
Never married[d]	3.60 (.42, 30.82)	2.61 (.30, 22.56)
Household income (log transformed)	.98 (.70, 1.38)	.83 (.59, 1.17)
Pension[f]	.75 (.29, 1.93)	1.15 (.45, 2.92)
Full time work in 1998[e]	.43 (.17, 1.05)	2.61 (.96, 7.09)
Job tenure (years)	.99 (.96, 1.04)	.96 (.92, .99)*

OR adjusted odds ratio; *CI* confidence interval; *FT* full time

[a] Latent class 2 (neutral expectations to work full time after age 62) is the reference class

[b] Reference group is black or other race/ethnicity

[c] Reference group is college degree or higher

[d] Reference group is married

[e] Reference group is part time work in 1998

[f] Reference group is no pension in 1998

*$p < .05$; **$p < .01$ (two-tailed tests)

instability in the effect) and to have high school (as opposed to college) education than those with more neutral expectations. Compared to those with neutral expectations for full time work, both men with high and low expectations were less likely to be full-time workers in 1998.

For women, factors related to labor force attachment were less consistently related to class membership (Table 4). While women with higher expectations to work full time past age 62 (class 3) tended to have slightly shorter job tenure than women with more neutral expectations, being white (compared to black or other race/ethnicity) was associated with both high and low expectations to work full time past age 62.

Discussion

Using longitudinal data from the U.S. Health and Retirement Study (1998–2008) we take advantage of repeated measures of later life work expectations gathered prospectively from older workers over an 8-year period and examine the effects of unfulfilled expectations on life satisfaction for a cohort of older Americans. While existing work in this area has relied on work expectations gathered in the years immediately preceding retirement (e.g., Bernheim 1989; Abraham 2004), we extend the current literature by means of repeated measures of later life work expectations gathered every 2 years and use a statistical method for modeling change over time that is not constrained by the assumption of a single underlying population trajectory. As a result, we were able to capture three conceptually distinct patterns in long-held expectations for full time work past age 62, and examine the consequences for older adults' life satisfaction depending on whether they continued to work full time past age 62.

We focused on a cohort of older workers (born 1942–1946) at the leading edge of the American Baby Boom cohort, whose expectations and labor force activity could foreshadow those of the large cohort of Americans soon entering their retirement years. Consistent with other research (Pienta and Hayward 2002), we found that the majority of men had generally high expectations (over

50 % chance) to work full time past age 62, whereas the majority of women reported a much lower chance of working full time after age 62. This may be due, in part, to women's lower labor force attachment compared to men. Substantial numbers of retirement-aged women have interrupted careers because of caregiving to children or older family members (O'Rand et al. 1992; Pienta et al. 1994). As a result, work attachment may be less salient for women, and this is evidenced in our data by women's shorter job tenure, lower rates of full time work, and fewer pensions than men. Health problems also had different effects on expectations across men and women. Consistent with other work (McGarry and Kathleen 2004; Benitez-Silva and Dwyer 2005), health problems were associated with a lower reported probability of working full time past age 62, but only among men. Health problems had no effect on women's reported expectations. Pienta and Hayward (2002) suggest that women may take into account their spouse's health rather than their own when formulating retirement expectations.

Reported life satisfaction after age 62 was significantly related to the extent to which these expectations were realized. For men who repeatedly indicated a higher chance of working full time past age 62, their life satisfaction was significantly higher when those expectations agreed with their actual full time work status after age 62. Men with these generally high expectations for full time work tended to be younger, with shorter job tenure and lower incomes than men with more neutral expectations to work past age 62. This is consistent with other research showing that men's retirement decisions are closely tied to the economic demands of their families. Men tend to delay retirement when faced with low incomes and dependent family members (Anderson et al. 1982; Hayward et al. 1996; Henretta and O'Rand 1983). In contrast, men who generally did not expect to work full time past age 62 tended to have greater job stability (reflected by pensions and longer job tenure) than those with more neutral expectations, and there was no significant difference in their reported life satisfaction depending on whether their expectations were realized. Thus, discordance between actual and expected later life work expectations among men appears to have negative consequences for well-being only among those with less stable work histories and lower incomes who fully anticipate working full time past age 62, but find themselves retired unexpectedly from full time work at this point in their lives. The other type of discordance, not expecting to work full time in later life but finding oneself working full time, had no consequences for reported life satisfaction in these American men.

For women, discordance between actual and expected full time work past age 62 had no impact on life satisfaction (regardless of the type of discordance). Unlike men, patterns of labor force history did little to differentiate between the three types of women's later life work expectations. Pienta and Hayward (2002) suggest that women's retirement expectations are influenced by those of their husbands, and highly dependent upon the resources and plans of their spouses. Thus, women's expectations measured in our study may have little relevance for their subsequent life satisfaction if those expectations are more closely tied to their husbands' intentions and actual work activity past age 62 than their own. Further work using data on older couples is necessary to disentangle these effects further.

In summary, there are distinct patterns of later life work expectations over time, which are not captured or adequately represented in the years immediately preceding the retirement years. While there was a tendency for workers' expectations to centralize around the 50 % chance in the years immediately preceding age 62 (Fig. 3a, b), meaningful variation in long held expectations of workers over time would be ignored if we relied only on these proximate expectations. We demonstrate that these long held expectations can differentially impact later life satisfaction depending on whether actual work activity is consistent with expectations. Our results provide impetus for considering and explicitly modeling heterogeneity in these histories of expectations as they impact well-being in the retirement years.

Our results are based on a survey question asking about expectations for full time work, not part time work. As a result we are unable to assess the importance of part-time or bridge jobs in the years preceding full retirement from the labor force. Additionally, we assess both full time work and life satisfaction at the same time (i.e., 2008), precluding any causal interpretation in the relationship between these variables. It is possible that the greater job instability among men with higher expectations to work full time past age 62 is the key factor influencing subsequent life satisfaction. However, our model explicitly controls for measured and unmeasured covariates by examining the relationship between full time work and life satisfaction among people with similar expectations and job stability (i.e. *within* each latent class). Finally, our results pertain to a single cohort of older American workers, and further research is needed to identify cohort and cross-national differences in these effects. The United States experienced the third largest post-war baby boom in the world (Canada and Australia's being marginally higher), but similar demographic shifts were not witnessed in Europe. Moreover, several European countries (notably Germany and Poland) were severely impacted by the Second World War, while the United States was largely untouched. The extent to which these historical differences might affect retirement expectations and exit patterns among older workers in European nations is worthy of further research.

This paper advances the current state of the literature by focusing beyond economic and financial outcomes among older workers to examine psychosocial outcomes, particularly as they vary by long held expectations for later life work. The tripartite model of education, work, and retirement (Cain 1964; Kohli 1986) may be historically specific to the economic era that reached its peak following World War II. Although instability in the working life course also existed in this era (Wilensky 1960; 1961), labor force instability is more pronounced and more prevalent across current segments of society (Bernhardt and Marcotte 2000). We show that unfulfilled expectations for full time work past age 62 have negative consequences for subjective well-being among American men.

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