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A Woman's Work is Never Done? Earlier Life Child, Marital, and Work History and Older Women's Relationship to the Paid Labor Force

Anne Shattuck
University of New Hampshire, Durham

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A WOMAN'S WORK IS NEVER DONE? EARLIER LIFE CHILD, MARITAL, AND WORK
HISTORY AND OLDER WOMEN'S RELATIONSHIP TO THE PAID LABOR FORCE

BY

ANNE M. SHATTUCK
B.S., Georgetown University, 1985
M.A., University of New Hampshire, 2007

DISSERTATION

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This thesis/dissertation has been examined and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Sociology by:

Dissertation Director
Heather A. Turner, Professor of Sociology

Reagan A. Baughman, John A. Hogan
Distinguished Professor of Economics,
Associate Professor of Economics

Rebecca Glauber, Associate Professor of Sociology

Kristin Smith, Research Associate Professor of
Sociology and Family Demographer at the Carsey
School of Public Policy

Karen Van Gundy, Associate Professor of
Sociology

On December 1, 2015

Original approval signatures are on file with the University of New Hampshire Graduate School.

DEDICATION

To my parents, Joan and Phil, who taught me and my three sisters the value of a good education and made tremendous sacrifices to see that we got the best they could possibly provide for us. That gift has already been transmitted from me and my sisters to our own children--their eight grandchildren. Their legacy is a lasting one that has blessed all of our lives immeasurably.

To my daughters, Elise and Carolyn, who watched me embark on this journey in 2005 when I entered UNH for my master's degree. Elise was just 13 and Carolyn, 11. They encouraged me when I doubted my abilities and celebrated in my successes with me. They also sacrificed time with me so that I could study and work. I thank them for all of that. At this writing, Elise is a college graduate pursuing her own graduate degree, in mathematics education, and Carolyn is a junior in college studying chemistry. I hope this can be an inspiration to them to remain curious about the world and to grow and learn throughout their lives as well as a reminder that it is never too late to try something different or to take a new path.

Finally, to Doug, my first supporter in this effort. Thank you for your encouragement and for all the help you gave me that made this possible.

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ABSTRACT

A WOMAN'S WORK IS NEVER DONE? EARLIER LIFE CHILD, MARITAL, AND WORK

HISTORY AND OLDER WOMEN'S RELATIONSHIP TO THE PAID LABOR FORCE

by

Anne M. Shattuck

University of New Hampshire, December, 2015

In the past 40 years, women in the U.S. have experienced higher rates of labor force participation and higher rates of divorce and single motherhood. How these changes will affect women when they reach old age is not yet understood. Using a pooled sample from the Health and Retirement Study of 4,350 women born between 1931 and 1943, this dissertation assesses patterns of women's work/retirement circumstances at age 66-68 and evaluates the relationship between those patterns and women's earlier life marital, work, and childrearing history. Latent class analysis revealed four distinct classes of older women: the "retired well" (57.6% of the sample) were not working for pay but were in good or excellent health and had household wealth in the top 75%. "Retired unwell" women (14% of the sample) were also not working but were in fair/poor physical health and had very low household wealth. The "working advantaged" (17.1% of the sample) were healthy women still working, primarily in professional/managerial occupations, earning above median wages, and having the highest median levels of household wealth of the four groups. The "working average" class (11.7% of the sample) were women still in the labor force, overwhelmingly in sales/labor/service jobs and making below median wages. This group had a 1 in 5 chance of being in fair/poor health and a 1 in 3 chance of being in the bottom wealth quartile.

Multivariate latent class analysis including covariates revealed several significant relationships between women's earlier life history and latent class at age 66-68. Women who had spent any time as a single mother or who had ever been divorced had higher odds of being retired unwell or working advantaged than retired well. Women with strong attachment to the labor force across their lives were less likely to be retired unwell and more likely to be either working advantaged or working average at age 66-68. Although single motherhood, work history, and marital history had independent effects on women's late life status, race/ethnicity, education, and current marital status had stronger effects. Implications for future cohorts of older women are discussed.

CHAPTER 1

INTRODUCTION

The lives of American women have changed considerably in the past half century. Higher rates of labor force participation, increasing educational attainment, and higher rates of divorce and single motherhood are among these changes. These transformations in women's lives have coincided with other major changes that have affected both men and women, including a decline in the proportion of jobs offering middle class wages and benefits, an increasingly insecure economy in which workers are more likely to experience job loss, and a weakening of the U.S. retirement income system. Also during this period, the life span of Americans has increased, and their later years are generally spent in better health and with lower levels of disability than in prior generations. This is especially true for more educated Americans.

These substantial social and economic changes represent a confluence of forces that will reshape the landscape of late life for upcoming generations of Americans. Older women in particular are likely to see their retirement years altered, perhaps in both positive and negative ways. Women's work lives are still typically more closely intertwined with their family obligations than men's. Thus, recent shifts in family structure, especially divorce and single motherhood, will be more salient for women's late life well-being than for men's. However, variation in women's life course trajectories—in terms of education, childrearing, marital, and labor force history—combined with increasing polarization of economic well-being among working-age Americans, are likely to produce different outcomes for different groups of older

women. One such outcome is whether women will continue to work for pay as they age. The period of life beginning in one's mid 60's, traditionally considered the start of retirement, is already becoming a time of life when working for pay is increasingly common. As more women reach retirement age with a substantial work history, more may stay in the labor force in their 60's and beyond. Motivations for and patterns of working at older ages may vary across groups of women however. Some may work out of economic necessity, some may work in order to remain active in their later years, and still others may work for a combination of reasons. Some older women may be healthy and working full time at professional careers while others may be working at low wage jobs despite poor health in order to make ends meet. It seems likely, however, that women's decisions to work for pay at older ages, type of work they perform and their wages may be associated with earlier life paths, particularly their childrearing, marital, and prior work history even after accounting for demographic characteristics.

The purpose of this dissertation will be to determine if there are identifiable patterns in attachment or non-attachment to the labor force among women in their mid 60's and to examine whether such work patterns are associated with women's earlier life patterns—including prior labor force attachment, motherhood, number of children, and marital history. Prior research suggests that for women, interrupted work histories, divorce, and single motherhood impact later life economic well-being. It remains to be seen whether these patterns also influence labor force participation. Three broad research questions will guide this study: What patterns exist among women in their mid-60's in their relationship to the paid labor market and what is the prevalence of each pattern? What are the characteristics of the groups defined by these patterns among recent cohorts of older women? How are earlier life family and work history related to these later life patterns? I will draw on two theoretical perspectives—gendered life course (Moen

2001) and cumulative inequality (Ferraro, Shippee, and Schaefer 2009)—in addressing these questions. The aging of the U.S. population, the changing structure of the economy, and the transformation of women's work and family roles would suggest that the so-called retirement years will look very different for coming generations of older women. Evidence from today's older women can shed light on what lies ahead.

Chapter Overview

The remainder of this dissertation is structured as follows. Chapter 2 presents a background section providing a more detailed discussion of the social and economic trends that have already begun to change the "retirement years," with a particular focus on women and why their story merits special attention. Chapter 3 provides a review of previous research on women's late life economic and labor force circumstances with a particular focus on studies that take into account earlier life marriage, child, and work patterns. Chapter 3 also includes a discussion of the theoretical perspectives and specific research questions that guide this research. Chapter 4 includes a description of the data and sample used in this dissertation, a discussion of the analytic methods used, and a detailed description of variables used. Chapter 5 presents results, including descriptive statistics, latent class analysis, and multivariate models with covariates predicting latent class. Finally, Chapter 6 provides a discussion of the results, their implications, and directions for future research.

CHAPTER 2

BACKGROUND: A SHIFTING SOCIAL AND ECONOMIC LANDSCAPE

Economic and social changes of the past half century, described below, have reshaped

life in America and will, by extension, reshape the experience of old age in the decades ahead.

Some of the trends I discuss are specific to women while others affect both men and women.

Although some of these changes represent positive developments, their beneficial effects are

distributed unevenly, indicating that there will be greater variability and increased polarization of

late life well-being in upcoming generations of elders**.**

Work and Education

Women's entry into the labor force in ever larger numbers has been a major social and

economic phenomenon of the last 40 years (Goldin, 2006). Both younger and older women have

been part of this trend. Younger women comprised the groups with the fastest increases between

1970 and 1990. The share of women aged 35 to 44 who were in the labor force[1] grew from 51%

in 1970 to 77% in 1990 (Fullerton, 1999) and has stabilized at roughly that level since (75% in

2012) (Toossi, 2013). Older women's rates remained relatively flat over the 1970-1990 period

(Fullerton, 1999). However, the younger women whose entry into workplace drove the early

dramatic increases in labor

---

[1] Labor force participants are defined as those individuals who are working in the civilian labor force (full or part-time) or who are unemployed and looking for work.

force participation are aging, and their stronger attachment to the labor force over their life course is now driving up labor force participation rates among today's older women. Twenty three percent of women aged 55 and older were working in 1990 (Mosisa & Hipple, 2006), but by 2012, that figure had risen to 35% (Toossi, 2013). The increase over that period was large even among post-retirement aged women. For those 65 to 69 years old, it climbed from 17% in 1990 to 28% in 2012 (Mosisa & Hipple, 2006; Toossi, 2013).

Coinciding with this increase in labor force attachment was a dramatic increase in educational attainment for both men and women. In 1970, 55% of men and women over age 25 had completed high school. In 1990 that figure had risen to 87% for men and 88% for women. Likewise, 14% of men and 8% of women had completed 4 years of college in 1970 but this grew to 31% for both men and women in 2012 (U.S. Census Bureau, 2013). The association between education and several positive outcomes is well-established. More highly educated individuals tend to be healthier, to have higher incomes, to live longer, and to have lower levels of disability in old age. Higher educational attainment will become increasingly evident in future cohorts of older Americans.

Women and Retirement Income

Women's higher levels of education and workforce participation hold the potential for improving their economic well-being in late life. Historically, they have been more likely to be poor in old age than men (11% of women 65 and over in poverty in 2012 compared with 7% of men) (Federal Interagency Forum on Aging-Related Statistics 2012). This economic disadvantage arises primarily from women's lower lifetime earnings and reduced accrual of retirement assets because of interrupted work histories, higher rates of part-time work, and lower salaries over their life course (Munnell & Sass, 2008). In addition, their financial circumstances

often worsen if they are widowed (Karamcheva & Munnell, 2007), and because women live longer on average than men, their assets must sustain them for a longer period of retirement. Higher rates of labor force participation and full-time work across the life course will mean that more women reach old age with retirement assets of their own, and this is projected to improve their financial circumstances in future cohorts of retirees (Johnson, 2013).

Social Security benefits provide a good example of women's changing retirement income situation. A woman can qualify for benefits in three ways: 1) as a retired worker only (based on her own work history), 2) as a spouse or divorced spouse of a living or deceased worker, or 3) as both a worker and a spouse or divorced spouse, known as "dually entitled." (Divorced spouse benefits are only available when a marriage lasted at least 10 years.) Women who qualify only as retired workers collect their own benefit amount. Women qualifying only for spousal benefits collect a benefit based only on spouses' earnings, typically one half of the husband's or ex-husband's benefit if he is still alive, 100% of his benefit if he is deceased. A woman who is dually entitled receives a benefit that is equal to her own retired worker benefit plus an auxiliary amount based on her spouse or former spouse's earnings (H. M. Iams & Tamborini, 2012). Dually entitled women qualify for their own retired worker benefit but have a spouse or former spouse whose higher earnings make the spousal benefit greater than their own worker benefit. Thus, the benefit of dually entitled workers, who are overwhelmingly women, is supplemented with the auxiliary benefit of a spouse or ex-spouse to equal what it would be if they collected the higher spousal benefit only.

The proportion of women qualifying for Social Security benefits under these three methods has shifted substantially in recent decades due to primarily to the increase in women's labor force activity (Figure 1). In 1960, more than half (56%) of women age 62 and older

claimed benefits only as a spouse or widow. By 2009, this proportion had dropped to 27%.

Women who were dually entitled based on their own earnings and the earnings of a spouse

jumped from 4.5% to 27.4% over that same period, while women

claiming only their own benefit rose from 38.7% to 45.1% (H. M. Iams & Tamborini, 2012).

Thus, women's entrance into the labor force has gradually provided them with
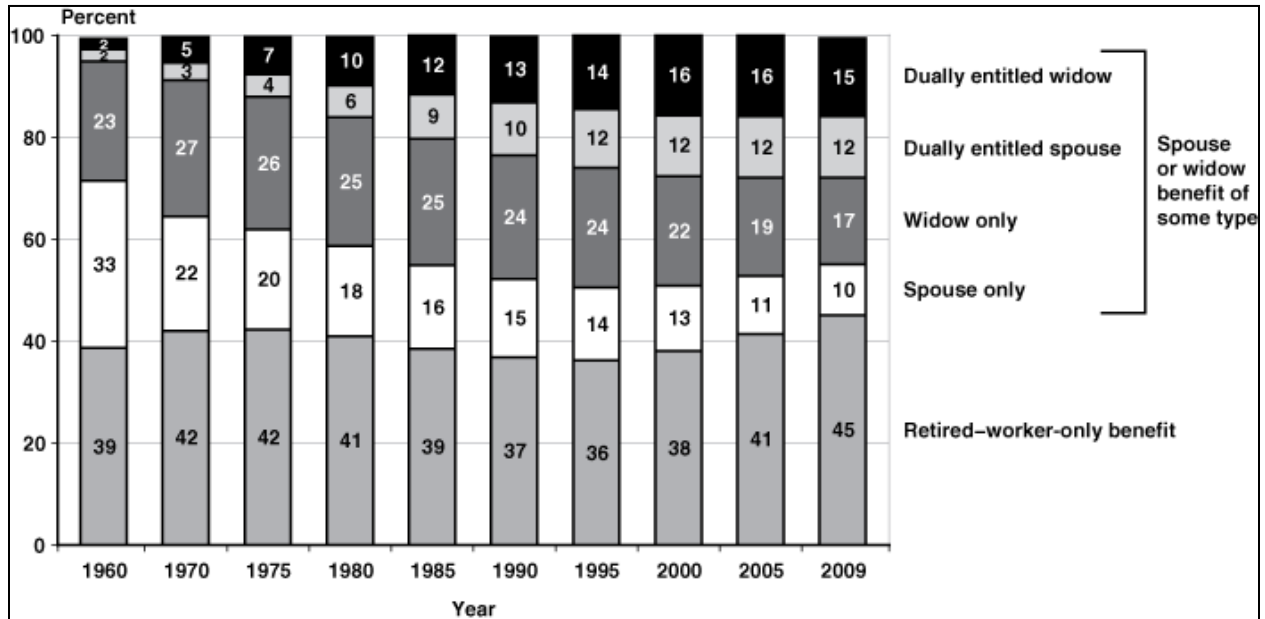
Figure 1. Percentage distribution of female Social Security beneficiaries aged 62 or older, by type of benefit and dual-entitlement status, selected years 1960–2009
Source: Iams and Tamborini 2012

Social Security benefits of their own, making them far less likely to be entirely dependent upon

the earnings history of a spouse or ex-spouse. However, women still have lower lifetime

earnings than men, and when the dually entitled are considered along with women receiving

spouse or widow benefits only, more than half of retired women still collect a benefit that is

partially or wholly dependent upon the higher lifetime earnings of a spouse (Iams and Tamborini

2012).

Private pension coverage has also increased for women since the 1970's due largely to the increase in women working full-time and to higher earnings. Among women aged 25-64 working full-time, participation in an employer-sponsored pension grew slightly from 38% in 1979 to 41% in 2010 (Munnell, Fraenkel and Hurwitz 2012). However, far more women were working full time in 2010 than in 1979, suggesting that the proportion of all women who had private pension coverage of some sort has increased much more than that. By 2010, private pension coverage for women (41%) nearly equaled that of men among full-time workers, with 43% of men participating in an employer plan (Munnell, Fraenkel, & Hurwitz, 2012). (Unfortunately, that parity was partially achieved at the expense of men, who lost considerable ground in pension coverage over this same period. (Munnell et al., 2012)).

The fact that more women now accrue their own retirement assets is a positive development offering them the potential for a greater degree of retirement security and reduced rates of poverty in old age. However, women remain at a disadvantage with respect to men for several reasons. Although full-time women workers have reach parity in pension coverage in their current jobs, women still lag men in ever having any pension coverage over their lifetime – 63% of women compared with 75% of men in 2005 (H. Iams, Phillips, Robinson, Deang, & Dushi, 2008). Women who have retirement accounts such as 401(k)'s are more likely to cash them in when they leave a job, making those funds unavailable at retirement age (Hardy & Shuey, 2000). In addition, some research indicates that women who manage their own retirement accounts tend to be more risk averse than men and make investment decisions that on average provide them with a lower rate of return (Embrey & Fox, 1997). Thus, the retirement income picture for women is a "good news/bad news" story (Munnell & Sass, 2005). Their major strides in earnings and work history have substantially increased their accrual of

retirement assets in their own name, better preparing them for old age, but they haven't yet caught up to men. Moreover, the gains that women have made are not distributed evenly. Employment rates and wages have climbed more quickly for college-educated women than for those with a high school education or less (Holden & Fontes, 2009), suggesting that the ability to save for retirement has improved more for those at the top of the socioeconomic ladder than those at the bottom.

Other Economic Changes

The transformation of women's education, work, and retirement in the past half century have taken place alongside other economic and social changes that have affected both men and women and that will also impact late life for future generations of American elders. Notable among these changes are the methods by which retirement is financed and shifts in the nature and structure of jobs in the U.S. labor market. These shifts, described below, are likely to introduce greater variability and inequality into the experience of aging.

Changes in the retirement income system

Some researchers have referred to today's retirees as living in a "golden age" of retirement income (Munnell & Soto, 2005) because they are relatively comfortable compared to generations that preceded them and, more than likely, the generations that will follow them. Retirement income for current and recent cohorts of retirees has been provided by the "three-legged stool" of private pension benefits, Social Security benefits, and personal savings. Changes in all three of these components have occurred in recent decades that may make retirement income less secure for some Americans, especially those in the bottom half of the income distribution.

Social Security is the largest source of income for most retired Americans (U.S. Social Security Administration, 2013). The Social Security "replacement rate" or the percentage of pre-retirement earnings replaced by social security stood at about 41% for the average earner who retired at age 65 in 2002 (U.S. Social Security Administration, 2013). Because of the increases in the Social Security full retirement age over time from 65 to 67, the replacement rate for an average earner who retires at age 65 is projected to fall to about to 36% in 2030 (U.S. Social Security Administration, 2012). In effect, the increase in the full retirement age serves as an across-the-board benefit cut (Munnell & Soto, 2005). In addition, it is likely that increases in Medicare premiums and in the portion of benefits that is subject to taxes will further erode the value of Social Security for coming generations of retirees (Munnell & Soto, 2005).

The second leg of the retirement income stool, personal savings, is also under pressure. The personal savings rate for working age Americans has been falling and personal saving outside of pensions has actually been negative since the mid-1990's (Munnell, Golub-Sass, & Varani, 2005). In addition, Americans lost wealth in the Great Recession of 2007-2009 as housing and stock prices plunged. Although stock prices have rebounded since then (up 45% since 2010), housing prices have increased only modestly (up 6% since 2010) (Munnell, Webb, & Fraenkel, 2013). Gains in stock prices primarily benefit households at the top of the income distribution since 89% of equities are held by the top one-third of households (Munnell et al., 2013). Housing equity, on the other hand, is important to all households and is particularly significant for households in the bottom half.

While the value of Social Security is eroding, and personal savings have decreased, it is changes in the third source of retirement income—employer-sponsored pension plans—that will likely represent the most significant potential threat to economic-well being in old age. Since the

early 1980's, employers have shifted from offering traditional defined benefit pensions, which pay a fixed annuity for the life of the retired worker, to offering defined contribution plans, such as 401(k)'s, where the worker contributes a portion of his/her own salary usually matched at some percentage by the employer. Employees are responsible for choosing and managing the investments in their own defined contribution plans. At retirement, they gain access to their accounts with whatever balances they have been able to build over the course of their working lives.

As a primary source of retirement income, defined contribution can perform as well as traditional defined benefit plans (Munnell & Sunden, 2005), but in order to do so, they require effort on the part of workers and carry risks that properly funded defined benefits plans did not. To amass assets that are sufficient to support retirement, workers need to contribute the maximum amount possible continuously over their working lives and avoid withdrawing money from their plan before retirement (Johnson, 2013). They must act as their own money managers making their own investment decisions. If they are too risk averse early in their working years, they may fail to grow their 401(k) balances to sufficient levels to support retirement. If they fail to properly rebalance their investments to more conservative assets as they age, their nest eggs are vulnerable to drops in equity prices that occur close to retirement.

These conditions are difficult for the average worker to sustain. At any given time, only about half of workers are even covered by an employer pension, so employees who change jobs over their career may not have continuous coverage. Many whose employers offer a plan do not participate at all or do not contribute the maximum allowable. Workers sometimes use 401(k) type plans as emergency funds during periods of unemployment and as sources of cash for home down payments, college tuition, and other major life expenses. Furthermore, employees are not

equally skilled at managing their accounts. Some research indicates that higher paid workers receive higher rates of returns on their 401(k) investments than lower paid workers do (Morey, 2009). Retirement income from private pensions is coming to depend more on workers themselves, and this will translate into more variable levels of private retirement income and more inequality in later life (O'Rand & Henretta, 1999). Some workers simply will not have enough saved in 401(k)s and IRAs to sustain them through a long period of retirement. Outliving savings is a particular risk for women who tend to live longer than men and more frequently survive their spouses.

The shift by employers away from defined benefit plans and toward defined contribution plans began in the early 1980's following the passage of the Employee Retirement Income and Security Act (Munnell & Sunden, 2005) and has been dramatic since. Figure 2 shows the percent of workers with any pension coverage who had defined benefit plans only, defined contribution plans only, or both types of plans, by year for 1983, 1995, and 2010. In 1983, 62% of workers with pension coverage had only defined benefit plans. In 2010, that number had fallen to 19% while the percentage who had defined contribution plans only increased from 12% in 1982 to 68% in 2010. Upcoming cohorts of retirees will be far more likely to have only a defined contribution plan than their parents were, and this represents a major shift in how retirement will be funded. How well current generations of workers meet the challenges of 401(k)'s described above will impact the ages at which they can retire and how comfortable their retirements will be.

It is important to keep in mind, however, that the shift in types of pension plans provided by employers does not impact all workers because, at any given time, more than half of private sector workers (58%) have no access to an employer sponsored pension of any kind (Munnell et

al., 2012). Workers with lower levels of education and in lower paid jobs are less likely to be covered by a pension plan. Changes in the U.S. job market over the past few decades have exacerbated this problem. I turn now to a discussion of shifts in the nature and structure of jobs that have increased polarization among American workers.
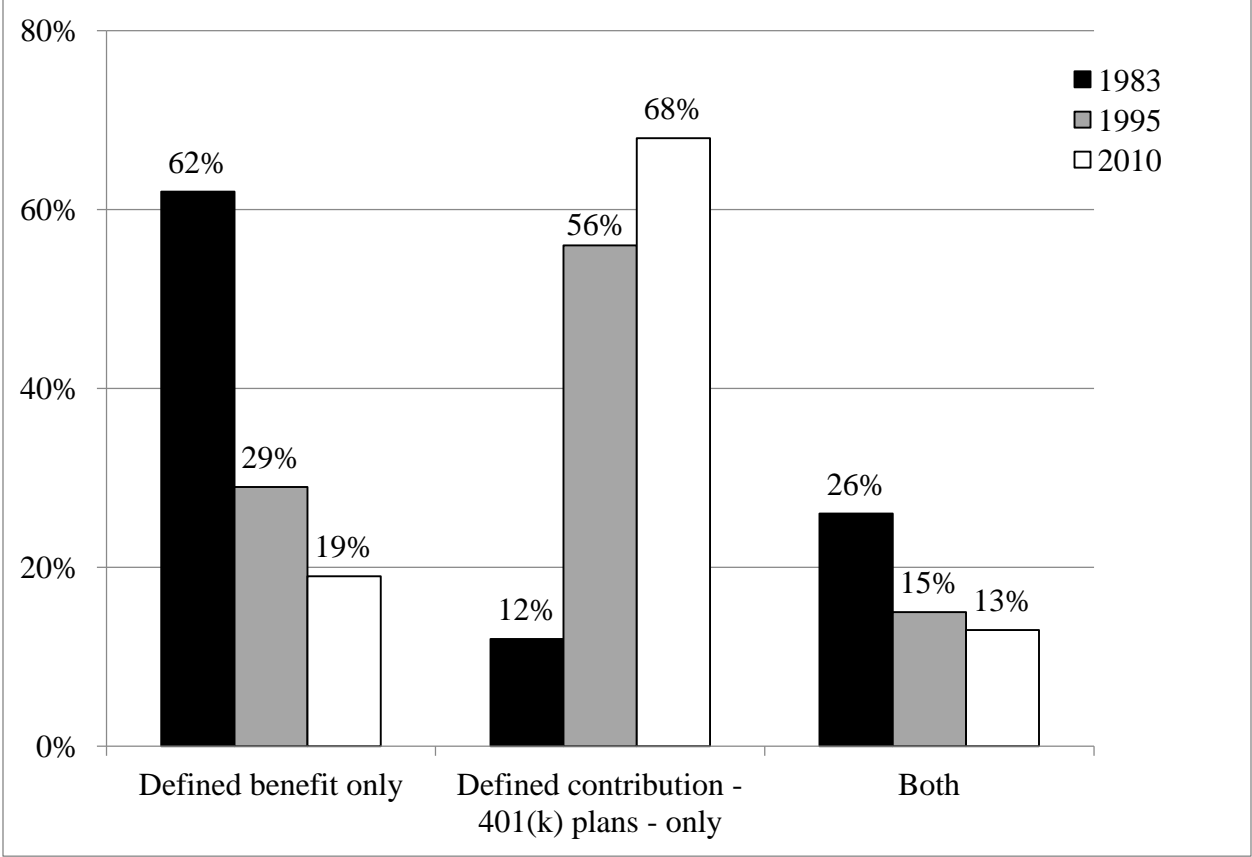
Figure 2. Workers with Pension Coverage by Type of Plan, 1983, 1995, and 2010
Source: Center for Retirement Research at Boston College 2013

Shifts in the nature of jobs and income inequality

Beginning in the mid 1970's, the U.S. economy began a period of fundamental change that has slowly transformed the types and quality of available jobs (Kalleberg, 2011). First among these has been a polarization of jobs along several dimensions of job quality especially

wages and benefits such as health insurance and pensions. Kalleberg classifies jobs as "good" when they pay high wages and offer benefits. "Bad" jobs, on the other hand, are low wage jobs without benefits. The last four decades have witnessed a decline in good jobs largely because of the "decline of many of the middle class occupations of yesteryear that used to provide relatively steady, moderate earnings while requiring relatively little skill" (Kalleberg 2011:64). Unionized blue-collar manufacturing jobs and "pink collar" jobs in administrative support are two examples of disappearing middle class jobs. At the same time that good jobs have been disappearing, there has been a large increase in the number of low-wage jobs without benefits in service sectors such as hospitality and retail trade. Women are more likely to occupy these low wage jobs than men (Hacker, 2008; Kalleberg, 2011). One possible reason for this may be that women's family and child-rearing commitments more often lead to spells in and out of the labor force, and low wage service sector jobs "do not penalize workers for intermittent work or a lack of experience" (O'Rand & Henretta, 1999, p. 125).

The polarization of job quality has been accompanied by increasing job insecurity and precariousness across all levels of the occupational hierarchy, not only for those at the low end (Hacker, 2008; Kalleberg, 2011; Van Horn, 2013) though workers with highly valued skills are less vulnerable . These changes in employment structures have tended to increase stratification among U.S. workers, and education has emerged as the major dividing line between those occupying good jobs and those occupying bad ones (Kalleberg, 2011).

Women workers have, on average, fared better than men over this period because of increasing levels of education, higher rates of full-time work and their prevalence in sectors such as healthcare and education that have not contracted as much as manufacturing has (Wood, 2014). Women's real median hourly wage rose by 23.6% from 1973 to 2012. In contrast, men's

real median wage fell by 5.8% over this same period (Economic Policy Institute, 2013).

However, the average increase in women's real wages masks substantial variability. Women

earning the wage at the 20th percentile had an increase of only 8.5% over those two decades, but

the wages of women at the 95th percentile rose 70.8% (Economic Policy Institute, 2013). Thus

inequality in women's earnings is growing with gains in wages are going disproportionately to
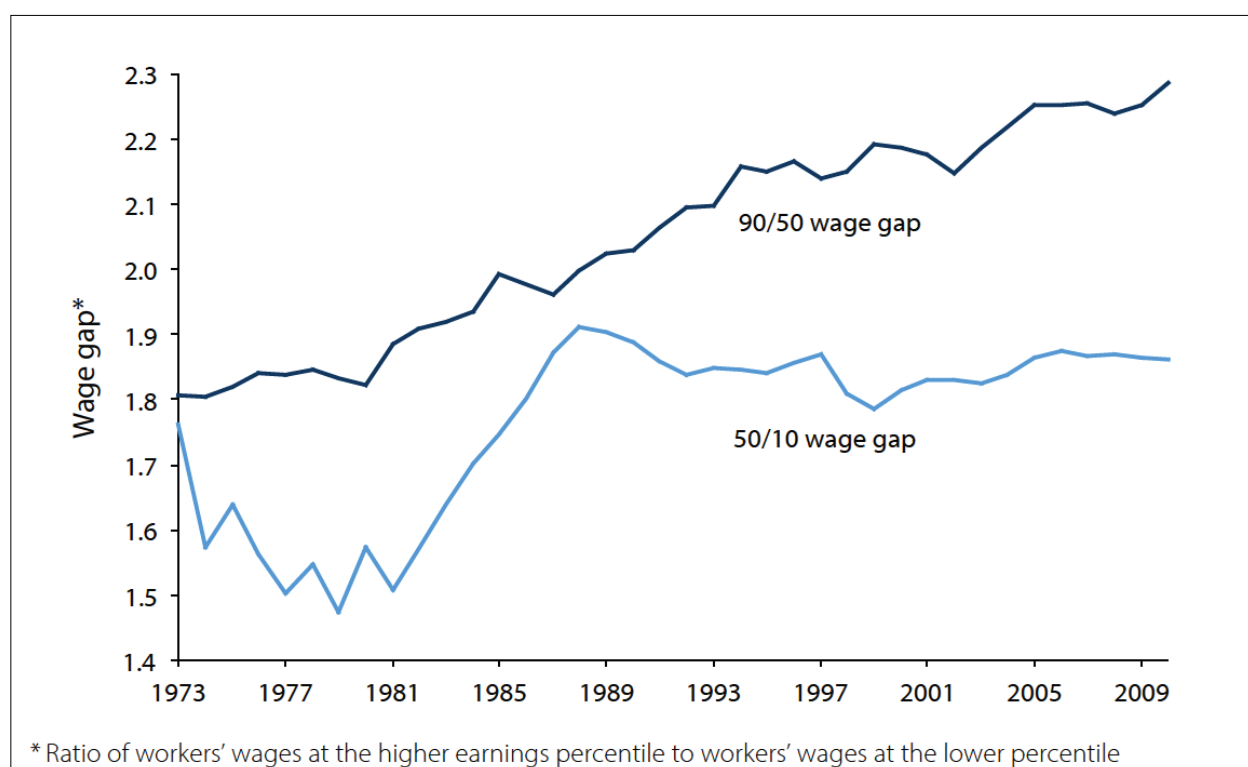
Figure 3. Wage Gaps among Women, 1973 to 2011
Source: Mishel et al, 2013

the top earning women. Figure 3 shows two ratios plotted over time from 1973 to 2011 (Mishel,

Bivens, Gould, & Shierholz, 2012). One is the ratio of women's wages at the 90th percentile to

those at the 50th percentile. The other is the ratio of women's wages at the 50th percentile to

those at the 10th percentile. Although the 50/10 ratio increased during the 1980's, it has

remained stable since. The 90/50 ratio, on the other hand, has grown steadily across the period

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indicating that women at the top end of the earnings distribution have done much better than those in the middle or at the bottom.

Although not shown, men's wages show a pattern of increasing inequality as well. The polarization of jobs, growing inequality in private pension benefits and wages affect both men and women. These factors will cause more inequality and stratification among retired Americans in the decades ahead. Public programs such as Social Security and Medicare tend to have a "status leveling effect" on retirement economic well-being because they provide benefits that are redistributive (O'Rand & Henretta, 1999). For example, lower wage workers receive a higher earnings replacement rate from Social Security benefits than do higher wage workers, and Medicare provides health insurance benefits that are equal across earnings levels. However, sources of *private* retirement income have always been unequal and tend to have a "status maintenance effect" whereby the inequalities that exist in the working years are continued into the retirement years (O'Rand & Henretta, 1999). The factors I have discussed in this section— changes in the retirement income system and rising inequality in the nature and rewards of jobs—are already increasing inequality among working age Americans. That greater inequality will follow Americans into their later years and is likely to swamp the status-leveling effect of public programs. Although inequality in late life will increase among both men and women, women may be more vulnerable to its effects than men because of recent shifts in marriage, family, and child rearing patterns.

Family Structure Changes

Coinciding with the labor force and economic changes discussed thus far have been well known shifts in marriage and family. The divorce rate in the United States increased dramatically from 1960 to 1979 (Stevenson & Wolfers, 2007), and although it has gradually

fallen since, it still substantially higher now than in 1960. The rate of divorces per 1000

population rose from 2.2 in 1960, peaked at 5.3 in 1979, and fell to 3.4 in 2009 (Carter et al.,

2006; U.S. Census Bureau, 2012). At the same time that divorce became more common in

America, marriage itself declined. The rate of marriage began falling in the early 1970s and "is

currently at its lowest point in recorded history" (Stevenson & Wolfers, 2007:29), declining

about 38% from its high of 10.9 per 1000 population in 1972 to 6.8 per 1000 in 2009 (U.S.

Census Bureau, 2012). "In 1960, 72% of American adults were married. By 2008, that share

had fallen to 52%" (Pew Research Center, 2010:1). Americans today are now less likely to

marry, and when they do, are more likely to divorce than they were fifty years ago. The first

generation to experience these family changes is now moving into old age, and the differences

between them and prior cohorts of older adults are becoming apparent. Notably, Baby Boomers

are more likely to enter their advanced years having experienced divorce, and they are more

likely to divorce even as they age. The divorce rate among adults aged 50 and over more than

doubled between 1990 and 2010 (S. L. Brown & Lin, 2012).

Other family forms have taken hold as traditional marriage has declined. Couples are far

more likely to cohabit now than forty years ago, and the increase in cohabitation is one reason

behind the decline in the marriage rate (Cherlin, 2009). At the same time, births to unmarried

women have increased dramatically—from 5% of all births in 1960 to 41% in 2008 (Pew

Research Center, 2010). Cohabitation and unmarried births are two sides of the same coin since

"nearly all the increase in births to unmarried women since the early 1980's has reflected a rise

in the number of births to cohabiting couples, not to lone mothers" (Cherlin, 2009:98).

However, cohabiting relationships to which children are born are not as stable as married

families. Roughly 50% of mothers giving birth during a cohabiting relationship will experience

the dissolution of that relationship compared with 20% of mothers giving birth while married (Kennedy & Bumpass, 2008).

The net effect of these changes in family patterns is that the traditional family model of married parents who stay married into retirement is becoming far less prevalent. This means more variability in family patterns among women at any one point in time, and more changes in women's family structures across their lives than had been the case in earlier decades (O'Rand & Henretta, 1999). More women are spending time outside of marriage during their adult lives, and many of them are raising children outside of marriage. Moreover, the declines in marriage and rise in divorce, cohabitation, and births outside of marriages have been strikingly class-based (Pew Research Center, 2010). College-educated Americans are more likely to marry than their peers with a high school education or less, and they are less likely to divorce (Aughinbaugh, Robles, & Sun, 2013; Pew Research Center, 2010). Among late baby boomers born between 1957 and 1964, 81% with a high school education or less were ever married by age 46 compared with 89% of those with bachelor's degrees. Among those who were ever married, 59% of those with a high school education or less experienced at least one divorce by age 46 compared with 30% of those with a bachelor's degree or higher (Aughinbaugh et al., 2013). The educational differences for this cohort (1957-1964) are larger than for the 1950-1955 birth cohort in which there was *no* educational difference in the likelihood of marrying (Aughinbaugh et al., 2013). Family patterns in the United States have become more strongly tied to socioeconomic status with each successive cohort. Although the implications of these changes are not fully evident among today's older Americans, analysis of current cohorts of elders may provide some insight into what their impacts may be.

Clearly changing family patterns affect both men and women. When children are involved, however, the economic impacts of divorce and single parenthood are higher for women. Parenthood in general, regardless of family status, typically exacts a higher economic cost on women (Crittenden, 2001; O'Rand & Henretta, 1999) because they are more likely to interrupt their work histories and to work part time to accommodate family needs. Even among those who continue working full-time, the structure of the workplace, in which the "ideal worker" is a full-time year round worker able to devote herself completely to her job as if she had no outside family responsibilities (Williams, 2000), means that many women end up in jobs that allow them greater flexibility to care for children. These positions typically pay less than male-dominated jobs. As I have already discussed, interrupted work histories, part-time work, and lower paying jobs all impact women's ability to save for retirement. This may not have been a concern for women in cohorts in which most women married once and stayed married and in which larger proportions of men had solid middle class earnings and pension benefits. However, the family structure changes discussed in this section indicate that in upcoming cohorts of elders, more women will lack a partner's earnings history to smooth finances in retirement. Mothers who are divorced or never married and who have low earnings over their work lives may face added financial strain when they reach retirement age.

Moreover, among women who have experienced divorce, there may be variation in its association with late life outcomes depending upon the timing of the marital disruption. Divorce typically has a stronger negative economic effect on women than on men (Smock, Manning, & Gupta, 1999). However, women who experience a divorce at a relatively early age may have more time to recover from economic effects that could affect their status in later life. Women

who experience a divorce later in life, on the other hand, might experience more serious consequences in retirement.

There is already evidence that divorce and single motherhood have a detrimental effect on women' economic well-being in old age. Johnson and Favreault (2004) used Health and Retirement Study data to model income, assets and poverty rates for women who were aged 65-75 in 1999. They found that women who were long term single mothers—those who spent 10 or more years raising children outside of marriage—had a poverty rate more than five times as high as women who were continuously married while raising their children (26.1% vs. 5.0%). The difference in the likelihood of being poor held up even when controlling for education, current marital status, and race/ethnicity: In multivariate analysis, the odds of being poor at age 65-75 were 55% higher for long term single mothers than for continuously married mothers. The authors concluded that "the financial difficulties confronting single mothers raising children persist into later life," and that the numbers of these "vulnerable women…will begin to soar when the many women who raised children outside of marriage in the 1970's retire in coming years" (Johnson & Favreault, 2004:S315). In this same study, *current* marital status mattered as well, controlling for motherhood. Divorced and never-married women had odds of being in poverty at age 65-75 that were 17.8 and 13.5 times higher respectively than women who were currently married.

Johnson and Favreault's finding on current marital status is consistent with other evidence showing that divorced women historically have had "dramatically lower incomes and higher poverty rates than widows and most other Social Security beneficiaries" (Butricia & Smith, 2012:11; Weaver, 1997). Although Social Security Benefits and retirement incomes of divorced women are projected to increase in coming cohorts of retirees because of women's

higher labor force participation rates and lifetime earnings, this will not be equally the case for all groups of divorced women (Butricia & Smith, 2012). Women with low lifetime earnings, especially those whose marriages did not last the 10 years required to enable them to qualify for any spousal Social Security benefits will be at particular risk of poverty in old age. The proportion of these more vulnerable divorced older women with short marriages as well as the proportion of older women who were never married are predicted to increase as a result of the general "retreat from marriage" (H. M. Iams & Tamborini, 2012). These trends will vary by socioeconomic status and by racial and ethnic group (H. M. Iams & Tamborini, 2012) with less educated women and Black women particularly at risk.

In short, there have been major shifts in American family and child rearing patterns across the last half century, most notably, increases in divorce, cohabitation, and births outside of marriage. These trends have the potential to impact the well-being of future generations of older adults. Although these changes have affected all Americans, they have been more pronounced among Americans at lower socioeconomic levels. Moreover, their impact is likely to be more substantial for women's late life circumstances than for men's given women's persistent role as primary caretaker of children and women's higher likelihood of altering their work lives to accommodate family responsibilities

Summary

In this background section, I have discussed several economic and social trends of the last several decades that have reshaped the lives of Americans, some of which have had a particularly transformative effect on women. Educational attainment and women's labor force participation and earnings jumped dramatically. More women now qualify for their own Social Security benefits and more women save for retirement through their own employer sponsored

pensions. Real wages for women have increased substantially since the early 1970's in contrast to an average decline for men. At the same time, the U.S. economy has lost large numbers of less-skilled jobs that provided middle class wages and health and pension benefits, and these have been replaced by less secure low wage jobs without benefits. Jobs that still provide pensions now do so through savings vehicles that depend on the volition and skill of employees themselves, transferring the risks of funding retirement from employers to workers. Family patterns have become more variable and less stable, with increases in the rates of divorce, cohabitation, and births outside of marriage and a decline in the rate of marriage. Education has become a major factor sorting people into "good jobs" or "bad jobs" and into different family structures, with less educated individuals more likely to be in low wage jobs with no benefits, less likely to marry, and more likely to divorce, cohabitate, and give birth to children outside of marriage. Thus while women's educational and economic gains have been substantial, their average improvements have occurred against a backdrop of greater economic insecurity, risk shifting from employers to workers (Hacker, 2008), and increasing economic stratification and variability of family patterns among all Americans.

These changes will alter the so-called "retirement" years in upcoming generations. Retirement as a distinct phase of the life course in which older adults make a clean shift from work to leisure has already been undergoing a transformation. Rates of labor force participation among older adults have been climbing since the early 1990's (Johnson, 2012; Shattuck, 2010) Given the changes that I have discussed here—shifts in the retirement income system, increasing wage inequality, and increasing variability in family patterns—it seems likely that there will be more economic inequality among retirement aged adults in the future. Older adults who are not

financially prepared for retirement may remain in the labor force longer than did previous cohorts (Munnell & Sass, 2008).

Women's labor force participation at older ages is likely to be an especially complex story. Despite the average gains in education and earnings, there is increasing stratification among working aged women in terms of wages and family patterns. Unstable family structures and childrearing outside of marriage have become more common in general, but they are more prevalent among less educated women. Less educated women are also more likely to be found in the low-wage jobs that have had little real wage growth and that do not offer pension benefits. In addition, women still retain primary responsibility for childrearing. As we have seen, motherhood takes a greater long term economic toll on women when they have raised their children outside of marriage. It may also exact a higher long term cost when women raise their children in the context of a changing and unstable family structure. Working for pay at older ages may be one way that women compensate for the economic effects of earlier life family and marital patterns. Of course not all older women who work will do so because of economic need. Many may stay in the labor force for other reasons. Work constitutes an important social role and can provide non-economic rewards such as enjoyment, a sense of accomplishment, and the ability to remain active and engaged in one's later years. These types of rewards may be more available to women in professional positions that require more education, and this may encourage them to stay in the labor force longer. Economic need and intrinsic rewards from work are likely to be present for older women workers at all levels of the occupational hierarchy, but may vary in their influence, depending upon level of education and on earlier life work and family patterns that shape women's late life circumstances.

In short, the increasing stratification of women in the working age population—in terms of income, work history, and family patterns—is likely to become more pronounced among older women as the cohorts of women who have experienced the changes discussed in this background section enter late life. Women who work may have different reasons for doing so and may be responding to different late life circumstances reached through divergent life paths. Older women may fall into different groups based on their labor force behavior—whether they work at all, how much they work, their wages, and their occupational group—and these groups may be related to life course factors.

The purposes of this dissertation will be 1) to identify and determine the prevalence of patterns in older women's retirement or work circumstances in terms of current work, wealth, health, occupation, and wages; 2) to describe the characteristics of women who fall into the groups defined by each pattern, including demographic characteristics, marital and child history, work history, health at first interview, and current psychological distress; and 3) to determine whether earlier life work, child, and marital history predict the likelihood of falling into each group while controlling for demographic predictors. The ability to identify specific groups of women on these late life factors and to predict how earlier life history is associated with later life patterns will permit a more complete picture of women's late life circumstances, one based on multiple factors simultaneously instead of on single factors examined one at a time. This will enrich our understanding of what factors may be associated with well-being at older ages. Although the trends discussed above are not yet as evident among today's older women as they will be among future cohorts, studying current cohorts can provide a benchmark for later comparison as well as insight into what the future implications of these changes might be.

CHAPTER 3

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Review of Previous Research

Although an enormous body of literature exists on women and work, much of it pertains to working age women with children. Until recently, less attention has been paid to the labor force decisions and work patterns of older women perhaps because rates of labor force participation were low among this group. Much research on older workers has looked at men and women together. Research specific to women has tended to focus on economic factors influencing whether or not women work in late life or on *current* family circumstances in late life that might affect women's labor force decisions such as marital status, spouse's retirement decisions, or women's caregiving responsibilities. Most of this research has tended to treat women as one group and to model whether women are in the labor force or not using a variable-centered approach that examines of separate predictors. Little attempt has been made to use indicators to uncover *groups* of women workers, to classify them based on their late life labor force patterns, and to connect earlier life patterns with those later employment groups. Below, I summarize existing research on older workers with an emphasis on research that looks specifically at older women.

Economic and Demographic Predictors of Late Life Work

A large and growing literature examines factors that encourage or discourage work or retirement at older ages (Heiland & Li, 2012; Monk, Haverstick, & Sass, 2010; Munnell & Sass, 2008). This research examines workers likelihood of being in the laborforce based on such factors as current economic conditions, workers' pension coverage, social security replacement rates, taxes, accumulated assets, health and disability, health insurance, and job conditions. Demographic correlates of work at older ages are taken into account, but little of this literature address issues that may be especially important for women's late life work decisions.

An exception is Munnell and Sass's (2008) examination of factors affecting whether older women work. They provide a detailed discussion of the complex factors that operate in women's labor force decisions and describe how these factors sometimes conflict with one another, making women's late life employment status difficult to predict. Then, using data from the 1992, 1998, and 2004 waves of the Health and Retirement Study, they examine what factors predict women's likelihood of being in the labor force at ages 51-56. Results indicate that birth cohort had a strong effect: women from later cohorts (war babies born 1942-1947 and early baby boomers born 1948-1953) had higher probabilities of working at in their 50's than their counterparts born from 1936-1941. Financial incentives were also important. Education was strongly associated with work, with college educated women having a higher probability of being in the labor force than their less educated peers. The authors considered education as a proxy for earnings and concluded that higher earnings provide an incentive for older women to work. The ability of a woman to improve her Social Security benefit by working longer, indicated by women having expected benefits greater than one-half of their husbands', was also predictive of labor force participation. Women who had more education than a spouse were also

more likely to work, suggesting that wives' higher earnings discouraged their withdrawal from the labor force. Last among the financial incentives affecting work, women who reported higher levels of financial wealth were less likely to be in the labor force.

In addition to financial incentives, Munnell and Sass (2008) found several family and demographic factors to be significant predictors of labor force participation. For single women but not married ones, having to care for an aging parent resulted in a lower likelihood of working. For married women, having a husband who was working increased women's likelihood of work. (This finding is consistent with other research showing that in married couples, wives and husbands tend to engage in joint decision making regarding retirement and retire within just a few years of each other (Ho & Raymo, 2009)). Higher earnings by a working husband, however, decreased women's probability of work. Current marital status also had an impact by itself, with divorced women being more likely to be working. Finally, health, a consistently strong predictor of late life labor force participation, had the expected negative impact on women's likelihood of working in their 50's, with women who reported fair or poor health being much less likely to be in the labor force net of other factors.

While wages, pensions, and demographic factors are known to influence labor force participation, economic cycles also have an impact for both older men and women. The Great Recession of 2007 to 2009 caused a sharp increase in unemployment rates as well as a decline in the value assets important to retirement including equities and real estate. The U.S. stock market fell 57% from October 2007 to March 2009 (Johnson, 2012), and U.S. households saw their home equity decline by more than $7 trillion (Gould Ellen & Dastrup, 2012). While older workers were less likely to lose their jobs in the recession than younger workers were, their unemployment rates reached higher levels than in previous recessions, and there is some

evidence that workers, especially men in their 60's, delayed retirement in response to declines in retirement wealth (Johnson, 2012). Across the period of the Great Recession, the labor force participation rate of women aged 65 and older continued a steady increase that began in the mid 1990's (Johnson, 2012). It is not clear to what degree this increase during the recession represents women's response to declining retirement wealth or a cohort effect as women with stronger attachment to the labor force across their lives reached their 60's. Nonetheless, women reaching traditional retirement ages of 65-66 were more likely to be working in the years of the recession than were their counterparts in prior periods.

While the research I have cited in this section contributes to our understanding of older women workers by highlighting the impacts of economic and financial factors, education, current marital status, financial wealth, and caregiving responsibilities, it does not capture any effects that might be associated with women's *earlier life* labor force attachment, child rearing or marital history. Moreover, like much research on women and work at older ages, this study's dependent variable is a binary indicator of whether the woman is in the labor force or not. This kind of dependent variable, while useful, is not able to capture the richness and variability of women's work patterns at older ages. Women who are in the labor force at older ages may work full-time or part time, may earn high wages in professional positions or low wages in service sector jobs without benefits.

Work and Family History as Predictors of Late Life Work

Some researchers *have* examined the ties between earlier life work and family patterns and later life labor force attachment (Choi, 2000, 2002; A. Pienta, 1999; A. M. Pienta, Burr, & Mutchler, 1994). Although some of these studies used samples of women born earlier than current cohorts of retirees, some relationships emerged between women's child rearing history,

labor force history, and the likelihood of working at older ages. Pienta and colleagues (1994) used a sample of 1,108 women aged 55 to 64 from the 1984 Survey of Income and Program Participation to model the likelihood of women working full-time, part-time, or not at all. Their primary independent variable was a categorical variable for women's work/family pathway classified women into one of five life course patterns: "continuous workers" began working before their youngest child turned 5, had no interruptions to their work history, and worked at least 50% of their adult lives; "delayed workers" were not in the labor force until after age 35 or until their youngest child was age 5 or older, had no interruptions after their delayed start, and worked at least 25% of their adult lives; "work-oriented" women had some family-related interruptions to their labor force participation but still worked at least one third of their adult lives; "family-oriented" women had long interruptions and worked less than 33% of their adult lives; and "other" for women who had spells out of the labor force only for non-family reasons. Other predictors in the model included number of children ever born, current marital status, health, education, occupation, age, net worth, and pension eligibility.

Results indicated that several life course factors were associated with later life labor force status. Women who had been continuous workers were more likely to be working full time than not working when they were aged 55-64 compared with women on the other work-family pathways. Women who had been "work-oriented", with time out of the labor force for family reasons, were less likely to be working full-time compared with not working than continuous workers were. Women who had taken the "family-oriented" pathway were much more likely than continuous workers to be not working at all in their later years. "Delayed entry" women were more likely to work part-time compared with full-time than continuous workers. In addition, the more children a woman had ever had, the more likely she was to be working full-

time as opposed to not working at all, controlling for other variables. The authors concluded that their findings supported an "attachment hypothesis" whereby women who have had stronger labor force attachment throughout their lives continue that level of attachment in their later years.

Evidence from this study thus "suggests that labor force participation at the end of the working life cycle is in part a reflection of earlier life course events" (A. M. Pienta et al., 1994: S236). In addition to effects of the primary independent variable of women's work/family pathways, the authors found that current circumstances mattered as well: pension-eligible women were more likely to work full-time (vs. not working), and married women with a working spouse, as well as divorced, widowed, and never married women were more likely to be in the labor force than out of it. Interestingly, women's education level had no impact on labor force participation net of other factors in the model. This finding is contrary to more recent evidence that education is positively associated with women working in later life (Munnell & Sass, 2008; Shattuck, 2010). Since the data used in the Pienta et al. study were from 1984, they predate the steady rise in labor force participation rates among older college educated women that began in the mid-1990's (Shattuck, 2010), and this likely explains why Pienta and her colleagues did not find the same relationship that consistently appears in more recent studies.

This study offers evidence that women's earlier life work and family history do indeed matter for later life labor force attachment. However, the women in the sample were younger than traditional retirement age (aged 55-64) and were from a cohort born between 1920 and 1930. Data is now available on more recent cohorts of women who have reached retirement age, enabling new analysis on the impact of life course factors on late life work at ages past traditional retirement age. Moreover, the authors' measures included only current marital status and took into account neither the stability of women's family life across their life course nor

whether women had spent time rearing children alone, factors that may well have an impact on later life circumstances. Finally, the dependent variable was a three-category indicator or current work status (full-time, part-time, not working), a variable which does not represent the complexity of work at older ages.

Another study by Pienta (1999) used the same sample of women to evaluate whether the timing of first birth (before or after age 30) was related to women being in the labor force or not at age 55-64. Only a few effects were found for timing of first birth. Among these was the finding that women who had had their first child after age 30 were more likely to be working at age 55-64 than women who were childless. This is consistent with other research indicating that childless women tend to withdraw from the labor force earlier in life than mothers (Munnell & Sass, 2008).

Choi (2000) has also evaluated the relationship between family and work histories and later life labor force attachment. Using the National Beneficiary Survey of 1982 and its 1991 follow-up wave, she tracked the labor force behavior of 4,565 women following their first receipt of Social Security benefits in 1980-1981. Using Cox proportional hazard models to adjusting for right censoring and selection bias due to mortality, she evaluated: 1) a binary indicator of whether women worked for pay or not between 1982 and 1991, and 2) the number of years worked between 1982 and 1991. Her primary independent variables were race, marital status in 1982 and 1991, number of health problems in 1982 and 1991, whether spouse worked between 1982 and 1991, number of children ever born, primary Social Security benefit amount, pension coverage in 1982 and spouse pension coverage in 1982.

Even in this sample from the 1980's, Choi found relatively high levels of labor force participation. Twenty-eight percent of women worked for pay at some time between 1982 and

1991 after starting to collect Social Security with a mean of 4.5 years of paid work after Social

Security receipt. More than 20 percent of the sample women worked in 9 or 10 of the

intervening years. Among those still working in 1991, 42% cited financial need as the primary

reason for work, and 31.7% cited wanting to work as the primary reason. In bivariate analyses,

those who worked at some point over the period tended to be older, non-White, less likely to

have been married in 1982 and in 1991, and, as expected, had fewer health problems. Twenty-

nine percent of non-workers (vs. 3.1% of workers) had not held a pre-Social Security job since

1951 that had lasted a year or more, suggesting, as Pienta and colleagues (1994) found, that

earlier labor force history is strongly related to late life employment. Pension coverage was also

highly tied to working. Lower percentages of workers than non-workers had any pension

coverage of their own or any spousal pension coverage in 1982. In multivariate analyses,

occupational group mattered, with women whose longest job had been managerial or

professional more likely to work than women in service or farming/machine operating type

positions. In contrast to Pienta et al. (1994), education was positively associated with the

likelihood of working. Other findings of this study tend to confirm the findings of Pienta and

colleagues. The number of children a woman had and the duration of her longest job were both

positively associated with paid work after Social Security receipt. Having a spouse who did not

work and number of health problems were negatively associated with the likelihood of working.

Race was not significantly associated with the likelihood of post-Social Security employment in

multivariate models.

Choi's study confirms some of the findings of other researchers but it also adds some

new results to the literature. The women in her sample had already begun receiving Social

Security benefits so their minimum age was 62, older than the women in the samples of Munnell

and Sass (2008) and Pienta et al (1994) who were in their 50's or early 60's. Pension coverage was negatively associated with paid work in Choi's post-Social Security age sample. In contrast, Pienta et al (1994) and Munnell and Sass (2008) found that pension coverage was *positively* associated with working in one's 50's and early 60's. Perhaps women who have strong attachment to the labor force across their adult lives are more likely both to have pension coverage and to remain working in their 50's, but this relationship may change after one's mid 60's when retirement age is reached and a lack of pension coverage is associated with additional years of work.

Choi includes number of children and marital status at both waves as predictors of labor force participation, but like Pienta et al (1994), her study does not include any indicators of changing family circumstances across the life course, such as number of marriages or divorces or periods of single motherhood, factors that might well be associated with late life work and that will become more salient among future cohorts of older women. Finally, this study, like the ones discussed above, models a binary outcome of working or not and a continuous outcome of number of years worked after Social Security receipt. These dependent variables have limited ability to capture the variability in women's work lives at older ages.

Choi (2002) conducted another study using data from the 1992 and 1994 waves of the Health and Retirement Study in which she assessed the relationship between three possible current parenting statuses and 1) women's self-defined retirement status and 2) likelihood of working for pay regardless of self-defined retirement status. The three parenting statuses were: 1) childless, 2) mother of adult children completely gone from the home, and 3) mother of one or more dependent children still at home or away at school. The 3,640 women in her sample were born between 1931 and 1941 and had all worked within the past 10 years. In addition to the

main independent variable of current parenting status, Choi's models included age, education, race/ethnicity, marital status and husband's work status, net worth at wave 1, net income at wave 1, pension coverage under an employer-sponsored plan, occupation type for current or most recent job, health conditions that affect ability to work, self-rated health, and changes in disability and self-rated health across waves.

Results showed that women who were Hispanic, divorced, had been laid off in the past 10 years, were in good health, and had children still at home were less likely to self-define as retired at both waves. On the other hand, women who were in poor health, had higher net worth, were childless or whose children were gone from home were more likely to self-define as retired. Interestingly, *actual* work status (as opposed to self-defined retirement status) was *not* predicted by women's current parenting status. However, the divorced or widowed were less likely to be out of the labor force in both waves. Other significant predictors of actual work status were age, education, net worth, occupation, and self-rated health with older, more educated, wealthier, and less healthy women less likely to work for pay. Women who had worked in sales/clerical or mechanical/machine operator occupations were also less likely to be working in either wave.

Based on these results, Choi concluded that retirement may be becoming "a status symbol rather than a marker of complete cessation from the world of work" (Choi, 2002: 43). Although she found that *actual* work status did not vary across current parenting status, her variables did not represent parenting status across the life course. Similarly, the marital status indicators that she included for each wave are not adequate to represent marital history and stability across the life course. Thus while this study offers some important findings, it addressed neither life course child and marital patterns nor differences in current wages, occupation and work schedule.

Other Research on Women Working in Late Life

Thus far, I have summarized quantitative studies that included some indicators of women's parenting and marital status. Most of the studies I have discussed, with the exception of Choi's 2002 analysis of Health and Retirement Study data, were based on samples of women in their 50's or early 60's before they reach traditional retirement age. Much less has been done using samples of women who have passed traditional retirement ages despite the fact that the labor force participation rate of women aged 65 and over has been climbing since the 1990's (Shattuck, 2010). One exception is Elizabeth Fideler's (2012) qualitative study of professional women in their 60's who are still on the job. Fideler interviewed a "snowball" sample of 155 highly educated women "to explore the older working woman phenomenon by investigating what positions professional women hold in the paid workforce and where, plus the myriad reasons why they are still actively employed" (Fideler, 2012, p. 3). The results of her study provide an interesting glimpse into the world of older professional women. Many of her respondents can afford to retire but work to remain active and engaged in their later years. Most have worked all their lives so that working represents a continuation of earlier life patterns. Given their age at the time of the interviews, these were Baby Boomer women raised during Second Wave feminism who strove to establish professional careers in an era when doing so was new for women. They are, as Fideler admits, privileged and not a representative sample of older American women. They were more likely to be married (mostly to highly educated, high earning husbands), and much less likely to be divorced than the population of all American women their age. Fideler's work is more recent than the other studies I have summarized here, but it offers only a small window into the world of older working women given its focus on

women at the top end of the socioeconomic ladder. Additional research is needed that will illuminate the work circumstances of a more representative sample of American women.

Health and Working at Older Ages

Thus far I have described previous research that examined associations between economic, demographic, and earlier life work and family factors and women's late life labor force participation. I have emphasized the work and family literature since that is the central focus of this dissertation. However, another factor closely associated with work in late life is health--both physical and mental. A fairly large literature looks at the health-work connection, and results are consistent in finding a positive association between physical and mental health and working for pay (Calvo, 2006; James & Spiro III, 2007; Luoh & Herzog, 2002). Older adults in better health are more likely to work for pay, and those working for pay are in better health than their retired counterparts. The direction of the relationship between health and work appears to bidirectional involving both "social selection" (healthier individuals are more likely to work) and "social causation" (working is good for individuals' physical and mental health). Using six waves of data from the HRS, Wickrama and colleagues (Wickrama, O'Neal, Kwag, & Lee, 2013) used cross-lagged auto-regressive structural equation models to test whether physical and mental health at each wave predicted working full-time, part-time, or not working at the next wave, and conversely, whether work status at one wave predicted changes in health over time. Their findings revealed "bi-directional, unique associations between work status (the level of working) and three dimensions of health in later years: immediate memory, physical disability, and depressive symptoms" (p. 813). Both physical and mental health exhibited this bidirectional relationship with work.

Although the purpose of this dissertation is not to examine the direction of the work-health association, health is an important descriptor of women's orientation to the labor force in late life. Though prior research overwhelmingly shows that older women in poor health are less likely to be working, there may be a portion of them who work *despite* ill health because of financial need or other reasons. Moreover, women who have maintained a strong attachment to the paid labor force across their lives may benefit in later years by being healthy enough to continue working longer if they need or want to.

Unpaid Caregiving and Paid and Unpaid Work

No matter their current or past relationship to the paid labor force, many women find themselves in caregiving roles in later life. One of the more significant possible caregiving relationships is that of caring for a spouse who requires assistance with activities of daily living (e.g. bathing, toileting, eating) or instrumental activities of daily living (e.g. driving, shopping, cooking, managing medications). Some prior research indicates that caring for a spouse affects the likelihood of both paid and volunteer work in late life. Carr and Kail (Carr & Kail, 2013) assessed whether three types of caregiving roles affected the likelihood of working part-time after transitioning out of full-time work at retirement age. They found that taking on a spousal caregiving role reduced the likelihood of working part-time more than caregiving for a parent or a grandchild did. Similarly, Choi and colleagues (Choi, Burr, Mutchler, & Caro, 2007) found that older women engaged in spousal caregiving were significantly less likely to participate in either formal or informal volunteer work. While this dissertation is not concerned specifically with the question of how late-life caregiving affects paid employment, the burden associated

with spousal caregiving may affect women's relationship to the paid labor force in late life and should be considered in analysis of late life work patterns.

Summary of Previous Research

In this section, I have summarized the existing research on older women workers. Taken together, these studies offer some important evidence about women's late life labor force participation. First, cohort matters with later cohorts of women more likely to be working at older ages than earlier cohorts. Women's labor force history also has an impact. Women who have worked continuously over their life course seem to be more likely to stay attached to the labor force in their later years. Current marital status and the work status of spouse, if present, are associated with the likelihood of working. Divorced women are consistently more likely to work than married ones, and among the married, those whose spouse is still in the labor force are more likely to work. Number of children ever born to a woman appears to impact the likelihood that she will work—having more children is associated with a greater likelihood of late life labor force participation. Education has a mixed association with women's late life work in the studies I have cited here. In some studies, education is positively associated with working in late life, but in others, there is no relationship net of other factors. This is likely explained by the period in which data were collected: more recent studies consistently find a positive association between women's education and labor force participation in later life. Pension coverage is tied to the likelihood of working but its relationship appears to depend upon a woman's age. Among pre-retirement age women, having a private pension is associated with a greater likelihood of work, but among post-retirement age women, it reduces the likelihood of work. In addition, higher levels of wealth reduce the likelihood of working for pay in late life. The occupational

group of women's current or most recent job also appears to make a difference: women in professional or managerial jobs are more likely to stay on the job than those in sales, clerical, or industrial type positions. Health, both physical and mental, is consistently and strongly associated with work, with healthier women more likely to work than those suffering from poor health and the relationship between work and health appearing to be bidirectional. Finally, caregiving, especially taking care of an ailing spouse, may also impact women's work decisions at older ages.

In sum, then, existing research on older women's labor force participation offers considerable evidence on the factors associated with paid work in late life. However, it falls short in several respects. First, much of it is devoted to women who are approaching but have not yet arrived at traditional retirement age. It thus offers little information about women who are working past traditional retirement age, a phenomenon that is growing and is likely to continue to grow given the changes in the structure of jobs and pensions that I discussed in the background section earlier. Second, outcome measures in existing research are generally categorical indicators of working or not, or working full-time or part-time. These kinds of dependent variables provide useful information, but they do not provide us with a full picture of women's late life circumstances. One 65 year-old woman with health problems may work full-time at Wal-Mart despite her health because she has no retirement assets and cannot subsist on her Social Security benefit, while another woman may continue her beloved work as a tenured professor although she has a generous defined benefit pension plan and the ability to retire at anytime she chooses. These diverse late life scenarios cannot be captured by categorical variables indicating working or not working.

Not only is the variability in women's late life work patterns inadequately modeled in existing research, but the diverse life paths that predict these patterns have not yet been sufficiently explored. Existing studies indicate that number of children and current marital status matter; so also might other factors pertaining to child and family history, such as a history of single motherhood or of partnering, un-partnering, and re-partnering over the life course. These kinds of family dynamics may affect women's ability to prepare for retirement and thereby impact later life employment decisions. Incorporating additional information on women's marital and family patterns across the life course could enhance our understanding of women's late life circumstances and seems particularly relevant now given the changes in family patterns that will be more prevalent among future cohorts of retirees.

Contribution of this Dissertation

This dissertation contributes to the literature on women and work at older ages in several ways. First, I use a life course approach that recognizes that earlier life patterns affect later life outcomes. Although some previous research attempts to do this, this dissertation incorporates variables pertaining to marital and child patterns over the life course that have not been included in prior studies. Second, I use data from more recent cohorts of older women than has been used in previous studies. Since birth cohort is associated with the likelihood of women's labor force participation, older studies may not accurately assess relationships in current cohorts of older women and will limit the possibility of predicting the behavior of future cohorts. Third, the analyses I present are based on the idea that individual variables relating to women's late life employment decisions may not tell the whole story, but instead patterns in those variables may define groups of women in terms of their late life circumstances. This differs from the more variable centered approach of prior research in which relationships between individual predictors

and late life employment are assessed using regression models. Such models tell us how individual variables independently affect the likelihood of working--for example, that having more education makes it more likely that a women will continue to work net of other factors. However, such models cannot reveal whether there are groups of women for which these relationships do not hold, and if there are such groups, what their relative size is. By identifying classes of women based on their response patterns on several variables important to predicting late life work, this dissertation will provide information about women's late life relationship to the labor force that is different from that found in existing research. Finally, by highlighting variability in late life patterns and tying it to earlier life history, my analyses provide a new perspective on the stratification of older women in terms of work and retirement in a way that is not done by previous research.

Theoretical Framework

Two related theoretical frameworks inform this dissertation: gendered life course perspective (Moen, 2001) and cumulative inequality (Ferraro, Shippee, & Schaefer, 2009). While this dissertation will not formally test these theories, they provide a lens through which women's lives may be viewed and a framework for asking new questions about how women's lives unfold over the life course. They are particularly relevant to a life course approach to women's late life labor force participation because they acknowledge the role of life course factors in generating and maintaining inequality as well as the family mechanisms specific to this process for women.

Moen: Gendered Life Course

Moen asserts that women are worthy of study in on their own because, more than men's lives, women's lives may be viewed "relational careers" or "linked lives" (Moen, 2001) in which

"individuals' life paths are played out in tandem with the life courses of parents, spouses, children, friends, and co-workers" (p. 181). As previously discussed in the background section above, women are still more likely than men to alter their work lives to accommodate family needs. If women's employment patterns across the life course are affected by the presence or absence of children or partners, so too may their later life outcomes, including labor force and retirement decisions. Moen recommends a "thoughtful reappraisal of existing life patterns taking into account the hidden domestic and care work that has been the province of women."

This dissertation will recognize the gendered nature of the life course by assessing how women's earlier life marital and child history affect later life circumstances. First, I will identifying groups of women based on important characteristics related to work and well-being at post-retirement age After identifying these groups, I will examine the relationship between earlier life patterns and the likelihood of belonging to each group. This approach acknowledges that different structural constraints specifically relevant to women are likely to create diverse patterns in later life. This dissertation is thus informed and guided by Moen's concept of the gendered life course.

Ferraro, Shippee, and Schaefer: Cumulative Inequality:

Cumulative inequality (CI) theory as articulated by Ferraro, Shippee, and Schaefer (2009) is a comprehensive version of the cumulative advantage/disadvantage mechanism designed to incorporate life course theory into empirically testable propositions. CI theory consists of 5 axioms and their sub-axioms. It is the first of these axioms and one of its sub-axioms that informs the approach of this dissertation:

1. Social systems generate inequality, which is manifested over the life course through demographic and developmental processes.
    b. Reproduction is a fulcrum for defining life course trajectories and population aging (p. 418).

Ferraro et al write:

> We assert that gerontologists would be wise to recognize that reproduction is a fulcrum for defining life course trajectories and population aging. Missing from much of the discussion of cumulative disadvantage in gerontology is the pivotal role that reproduction plays in life course processes (p. 416).

While Ferraro and colleagues' concept that "reproduction is a fulcrum for defining life trajectories" is closely related to Moen's idea of the gendered life course, it takes the idea a step further by calling for more specific inclusion of reproductive events in analyses of the life course than Moen does. It explicitly asserts that reproduction will affect outcomes in aging and that reproduction is one mechanism by which social inequality arises and is maintained. Thus its emphasis is slightly different than Moen's ideas of "relational careers" and "linked lives."

The analyses in this dissertation incorporate Ferraro et al.'s concept by examining women's childrearing history, in conjunction with their marital history, as a predictor of late life circumstances and well-being. The birth of any children, the number of children a woman has, and whether she raises them as a single mother define the life course trajectories of women and have impacts that last into old age. The analyses undertaken here will enable a nuanced portrait of the ways in which women's reproductive lives are associated with their well being in late life by determining whether and how their history of motherhood predicts unequal patterns of work and life circumstances when women are in their mid-60's.

Research Aims

This dissertation has three primary aims: 1) to determine if groups with specific underlying constellations of labor force participation can be identified among women in their mid 60's and how prevalent these groups are in recent cohorts of older women; 2) to describe the groups so identified on a variety of characteristics including ; and 3) to determine whether life

course factors—specifically patterns of childrearing, marital, and work history—are related to women's likelihood of belonging to the those underlying labor force groups, net of demographic characteristics.

By including life course factors that are salient for women's labor force involvement *throughout* their lives and that affect their retirement income prospects, it will give a fuller picture of women's orientation to the labor force at older ages. Results will provide an indication of how the increasing variability and stratification in family patterns and earnings among women who are currently working age may impact the labor force patterns and overall late life circumstances of future cohorts of older women.

This dissertation will address the following research questions.

1. What are the underlying patterns of women's relationship to the paid labor force among women in their mid-60's? What is the prevalence of each group of workers/non-workers among current and recent cohorts of older women? Indicators used to classify women's relationship to the labor force will include women's current work characteristics including work status, wage level, and occupation group as well as women's physical health status and household wealth, characteristics known to be strongly associated with labor force participation.

2. What are the characteristics of the groups defined by the patterns discovered in research question 1, including demographic characteristics, marital and child history, work history, health at first interview, and current psychological distress?

3. Do earlier life patterns such as motherhood, childrearing, marital history, and previous work history, predict the probability of a woman belonging to a particular group in her mid-60's, net of demographic characteristics?

In sum, this dissertation will enable me to accomplish objectives which have not yet been sufficiently addressed in the literature on older women and work. First, compared to the variable-centered approaches that have been taken in most research on late life labor force participation, these analyses will provide a richer picture of which women are working or not working at older ages and what the work lives of those in the labor force are like. Second, it

will provide more up-to-date research into the associations between earlier life work and family factors and the later life outcome of working for pay. Both of these objectives are worthy goals given the changing nature of work, family, and retirement income systems in the U.S. today.

CHAPTER 4

METHODS

Data Source

Data for this dissertation are from the Health and Retirement Study (HRS), a longitudinal survey of a nationally representative sample of Americans aged 50 and older and their spouses of any age. The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan. Respondents are interviewed every two years on a wide range of topics related to aging including income, work, assets, pension plans, health insurance, disability, physical and mental health, and family structure and support. There are several cohorts of primary respondents included in the HRS. The original HRS cohort interviewed in 1992 consisted of adults born between 1931 and 1941 and their spouses. Successive cohorts have been added over the course of the study including the War Babies cohort, added in 1998 and born between 1942 and 1947, and the Early Baby Boomers added in 2004 and born between 1948 and 1953.

Datasets for HRS are publically available from the University of Michigan for each year of the study. However, the RAND Corporation publishes several data sets based on the raw HRS files. One is a longitudinal data set based on HRS data, developed with funding from the National Institute on Aging and the Social Security Administration (Health and Retirement Study, 2013). The RAND HRS file contains a subset of processed variables for all available

waves of the HRS. This dissertation uses data from RAND HRS Version M, released in August of 2013. Some variables of interest for this dissertation were not contained in the RAND HRS file, specifically variables necessary to construct each respondent's marital and childrearing history such as years in which children were born and years in which marriages began and ended. Variables that were not contained in the RAND HRS file were obtained from other available RAND data files. Child birth dates were obtained from the RAND Family Data File, Version C (Health and Retirement Study, 2014d), a respondent-child level file with one record for each of a respondent's children. Dates for the beginning and end of marriages were obtained from the RAND Enhanced Fat Files for the even years from 1992 to 2010 (Health and Retirement Study, 2011a, 2011b, 2011c, 2011d, 2011e, 2011f, 2011g, 2014a, 2014b, 2014c). The RAND Fat Files are enhanced versions of "raw" HRS data files that take the raw variables from each questionnaire section and collapse them into a single respondent-level dataset for each wave.

The sample design of the HRS consists of a "nationally representative, multi-stage area probability sample (the core sample)" (Health and Retirement Study, 2008, p.2) and three oversamples designed to increase the numbers of Blacks, Hispanics, and residents of the state of Florida. Sampling weights were constructed to correct for the unequal probabilities of selection between the core sample and the 3 oversamples (Health and Retirement Study, 2008).

The HRS has excellent response rates, both for initial interviews and for re-interviews at subsequent waves. As will be described in more detail below, the sample used for this analysis consists of women born between 1931 and 1943. These women are members of the original HRS sample and the War Babies Cohort added to the survey in 1998. The original HRS sample had an overall first-wave response rate of 81.6% in 1992 while the War Babies cohort had a

response rate of 69.9% in 1998. Response rates for these two sample cohorts in follow-up waves

(excluding those who became deceased or asked to be permanently removed from the sample)

ranged from 92% to 95.9% (Health and Retirement Study, 2011h)

Analytic Sample

The primary objective of this dissertation is to assess women's patterns of attachment to

the labor force when they are past the traditional age of retirement. However, with each

additional year of age, labor force participation rates decline. Thus, I chose to assess women at

ages 66-68, the earliest ages at which two major financial incentives for retirement--eligibility

for full social security benefits and health insurance coverage under Medicare--have occurred. In

order to obtain the maximum sample size for analysis, I use all waves of the HRS in which

female primary respondents would have been at least age 66, but not over age 68. (The HRS is

conducted biennially.) Respondents who would have been aged 66-68 during one of the

interview years of the HRS were born between 1931 and 1943, and the years in which they were

interviewed at that age fell in 1998, 2000, 2002, 2004, 2006, 2008, and 2010 (HRS Waves 4

through 10).

Thus my analytic sample is pooled across waves and consists of primary respondent

women aged 66-68 who participated in the survey in the year they were that age. These selection

criteria yielded an initial sample size of 4,603. However, 199 respondents were missing data on

key variables relating to marital history, a primary area of interest for this dissertation, and

therefore their complete marital history could not be constructed. An additional 54 cases were

assigned weights of zero in the interview year when they were aged 66-68. These 253 cases

were excluded from analysis, leaving 4,350 cases in the final analytic sample. Table 1 shows

birth years for the pooled analysis sample, the HRS wave in which the respondents were aged 66-68, and the number of respondents in each birth year range.

Table 1. Birth Year and Focal HRS Wave for Sample Respondents (N = 4350)

Birth Year	Focal year and HRS wave number	Birth Year Group	Percent	N
1931	1998 - Wave 4	1	8.0	346
1932-1933	2000 - Wave 5	1	15.1	657
1934-1935	2002 - Wave 6	1	15.6	680
1936-1937	2004 - Wave 7	2	16.1	700
1938-1939	2006 - Wave 8	2	16.0	694
1940-1941	2008 - Wave 9	3	16.4	712
1942-1943	2010 - Wave 10	3	12.9	561
Total			100.0	4350

Analytic Method - Latent Class Analysis

To explore whether there are identifiable patterns in women's characteristics related to work force participation in late life and to determine the prevalence of these patterns I use latent class analysis (LCA), a method for uncovering the presence of underlying groups within a population. LCA posits that there is a latent (unobserved) *categorical* variable which may be used to classify individuals probabilistically into population subgroups (latent classes) using a set of observed indicators. An individual's true latent class is unknown. (Collins & Lanza, 2010). The process of LCA involves selecting a set of categorical observed indicators that are expected to define and distinguish the latent classes. Once the indicators are chosen, a series of models is fit with different numbers of latent classes, and respondents are grouped into the specified numbers of latent classes based on the similarity of their response patterns on the observed

indicators. In each model, two parameters are estimated using maximum likelihood estimation: 1) the *latent class prevalences* (i.e. individuals' probability of membership in each latent class) and 2) the *item response probabilities* <u>conditional</u> on latent class (i.e. the probability that an individual will have a certain response on an indicator variable given membership in each latent class)(Collins & Lanza, 2010).

After fitting models with different numbers of latent classes, a final model is selected from these based on: 1) measures of relative and absolute fit; 2) how well the classes can be labeled and described (interpretability); 2) how distinct the classes are from each other (latent class separation); 3) how similar individuals within each class are to each other (latent class homogeneity); and 4) on whether the model is well identified (Lanza & Rhoades, 2011) . Because LCA's focus is on individuals' response *patterns* on the observed variables rather than on the effect of individual indicators, it offers a person-centered rather than a variable-centered approach to grouping individuals. The latent groups are defined by *combination*s of responses on the indicator variables (Collins & Lanza, 2010; Lanza & Rhoades, 2011).

Once a latent class model is selected to describe the data, additional variables, or covariates, can be introduced to predict the odds of individuals' membership in each latent class compared to a reference class using multinomial logistic regression (Collins & Lanza, 2010; Lanza & Rhoades, 2011).

Model fit in LCA

Model fit in LCA is assessed with two types of fit indices: absolute and relative. The most commonly used absolute fit index in LCA is the likelihood ratio statistic, G^2, which is calculated by comparing the frequencies of expected and observed response patterns on the observed indicators based on the model being fit. Under most conditions, the G^2 statistic follows

a χ^2 distribution with degrees of freedom calculated based on the number of possible response patterns in the model and the number of parameters (latent class prevalences and item response probabilities) that are being estimated. The null hypothesis of the G^2 test is that the model being tested is the actual population model that produced the observed data--in other words, that the model fits the data.   Thus, in contrast to most hypothesis tests, with the G^2 statistic, it is desirable to have a p-value *greater* than .05 so that the null hypothesis is *not* rejected (Collins & Lanza, 2010).

Relative fit indices for latent class models evaluate the fit of one model over another in order to decide which model "represents the optimal balance between fit to a particular data set and parsimony" (Collins & Lanza, 2010, p. 112). The most common relative fit indices used for this purpose are the Akaike information criterion (AIC) (Akaike, 1987) and the Bayesian information criterion (BIC)(Schwartz, 1978). Both criteria use the G^2 statistic and adjust it for the parsimony of the model. These indices are calculated as:

$$AIC = G^2 + 2P$$

$$BIC = G^2 + [\log(N)]P$$

where P is the number of parameters being estimated in the model and N is the sample size. When comparing models, smaller values of AIC and BIC indicate a better balance between fit and parsimony (Collins & Lanza, 2010).

In evaluating latent class models in this dissertation, I use the G^2 statistic as well as the AIC and BIC.

The Latent Class Model

Figure 4 shows a conceptual diagram of a latent class model. The right side of the diagram, labeled as Phase 1, shows a baseline latent class model. Here, the oval C represents the

latent categorical variable, and Y_1, Y_2, and Y_3 represent the observed indicators of C. On the left

side of the diagram, labeled Phase 2, the rectangle X represents a vector of covariates used to

predict membership in the categories of C.
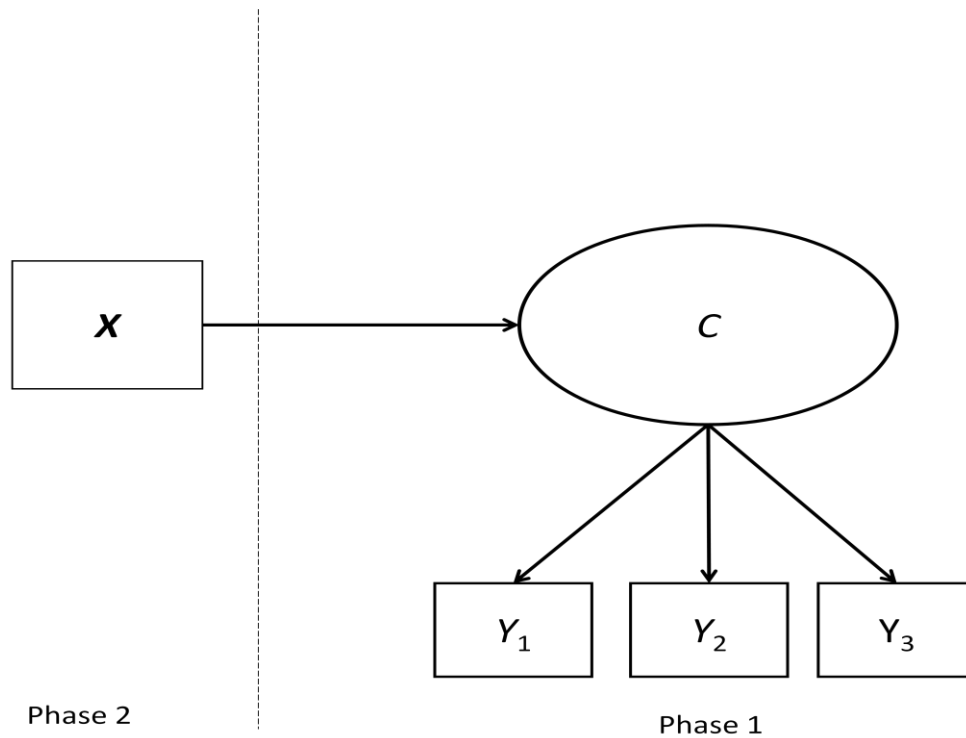
Figure 4. Conceptual diagram of latent class model with covariates (Source: Lanza et al, 2010).

Measures

The dependent variable in this dissertation is latent class of women's workforce

attachment at age 66-68. The analyses consist of describing the sample, modeling latent class,

and determining what predictors (covariates) are associated with belonging to one latent class

over another. Thus, the measures used in this dissertation include 1) variables used to describe

the sample that are not included in the latent class analysis, 2) observed indicators of latent class

and 3) covariates predicting the odds of latent class membership. Below, I discuss the measures

by topic area first, then I present the latent class model and explain the selection of observed indicators and covariates for the model.

Employment Characteristics

The primary focus of this dissertation is to describe and predict women's attachment or non-attachment to the labor force in late life. I include measures related both to their current work situation and also to their labor force history over their life course since past labor force history may be associated with current work circumstances. Similar to information collected from respondents about marital history and parenting, information about past employment is gathered in the first interview in which the respondent enters the HRS sample and is updated at each subsequent interview. The RAND HRS file contains a large selection of employment-related variables for all waves. The variables described here are either taken directly from RAND HRS or constructed from variables found there. All job-related variables used in these analyses refer to women's work history and current work status as of the interview wave in which she was aged 66-68.

Occupation coding. From 1992 through 2006, HRS used industrial and occupational classification codes from the 1990 Census to code respondents' occupation. However, beginning in 2008, the coding system was changed to that used in 2000 Census. The Census industrial and occupational classification coding system categorizes occupations into over 800 detailed codes based on specific job duties. These detailed codes are masked in publically available HRS data sets and instead HRS provides only the general category of occupation under which the detailed codes fall. In interview waves from 1992 through 2006, there were 17 such general categories. In 2008 and 2010, there were 25. In order to limit the number of codes in my occupation variables, I use five categories to represent the general occupation categories in HRS: 1 -

professional/managerial; 2 - sales; 3 - clerical; 4 - service; and 5 - labor (T. H. Brown & Warner, 2008). Appendix A shows the occupational codes used in HRS (1992-2006 and 2008-2010) and how they were recoded into these five occupational groups.

Employment history. *Ever worked for pay* is a dummy variable coded 1 for women who reported ever working for pay in their lifetimes. *Number of years worked* is a continuous variable that records the total number of years a woman ever worked. *Number of jobs held* is a continuous variable showing the total number of jobs a women ever held over her lifetime. *Number of jobs lasting 5 or more years* records the number of long-term jobs held by the respondent. *Occupation of longest held job* records the occupation of respondent's longest job coded into the 5 categories as described above: professional/managerial, sales, clerical, service, and labor.

Current employment status. *In the labor force* is a dummy variable coded 1 for women who are working for pay, either full or part time, or are unemployed and looking for work. Women who report being self-employed are included among those in the labor force. *Labor force status at age 66-68* is a categorical variable coded either not employed, employed full-time, employed part-time, or unemployed and looking for work. *Self-employed* is a dummy variable coded 1 for women who report being self-employed at the focal interview wave. *Occupation of primary job* is a five-category variable describing the respondent's current occupation of her primary job. In the latent class analysis, this variable is re-coded to three categories: professional/managerial, clerical, and sales/service/labor as I discuss below. *Hourly wage* is the respondent's hourly wage from the focal interview wave, inflation adjusted to 2010 dollars.   This variable is based on the RAND HRS variables "r4wgihr" to "r10wgihr," the imputed hourly wage of women, taken from the wave in which they were aged 66-68. In the

latent class analysis, I dichotomize hourly wage to create a dummy variable coded as 1 for women whose hourly wage falls below the median for the sample.

Marriage and Children

Marital history. In respondents' first HRS interviews, they are asked their current marital status, and the dates and nature of any past marital events. For example, a woman who is a widow in her first HRS interview, would be asked when her most recent marriage began and ended, and the dates and disposition of any other marriages that preceded her most recent one. At each subsequent interview wave, respondents are asked to update their marital history by reporting on any new marriages, divorces, or spousal deaths since their last interview. Variables showing the dates and marital events are collected in the Respondent Demographics section of the HRS. I obtained these variables from the RAND fat files for each year of the HRS (1992 to 2010, even years) and used them to create marital history variables for the respondents in my analytic sample.

Ever divorced is a dummy variable coded 1 for respondents who ever experienced a divorce. Number of divorces is a categorical variable coded as 0 - none, 1 - one divorce, or 2 - two or more divorces. To account for the possibility that divorces taking place at different stages of the life course might have different impacts on late life circumstances, I include two dummy variables for timing of divorce. *Divorced at 30 or younger* is a dummy variable coded as 1 for respondents who experienced a divorce at or before the age of 30. *Divorced at age 45 or older* is coded 1 for women who experienced a divorce at age 45 or later. *Number of times married* is coded 0 for no marriages, 1 for one marriage, 2 for two marriages, and 3 for three or more marriages.

Current marital status in the focal wave at age 66-68 is coded as 1 - married, 2 - divorced, 3 - widowed, or 4 - never married. This variable is based on the RAND HRS variables "r4mstath" through "r10mstath," the variables for "marital status without partnership," with the number of categories collapsed from 6 to 4. ("Married, spouse absent," 0.51% of sample, was combined with "married." "Separated," 1.6% of sample, was combined with "divorced.") These categories are assigned based on the legal marital status of the respondents without regard to unmarried partnerships. Thus, a woman who was in a cohabiting relationship at the time of the focal wave was coded based on her legal marital status, and the variable does not reflect the presence of her unmarried partner.

Children and single motherhood. *Number of own children* is based on the RAND HRS file variable "raevbrn," the number of children ever born to the respondent excluding still-births, miscarriages, step-children, and adoptions. In some cases, the number of children shown in this variable in the RAND HRS file was lower than the number of children shown as "own children" and not step-children in the RAND Family Data file. When the number of "own children" who were not step children was greater, the additional children were assumed to be adopted children, and they were added to the number of children ever born to the respondent to arrive at the respondent's number of own children. The revised variable thus counts children both born to the respondent and children adopted by the respondent but not step-children. *Any own children* is a dummy variable coded 1 for respondents who have a value of more than 0 on number of own children.

Using birthdates of respondent's own children found in the Rand Family Data file, variables were constructed that indicated the year in which respondent first child was born and the year in which parenting of minor children ended because the respondent's youngest child

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turned 18. From the marriage history variables taken described in the previous section, a similar history of marriages was created which showed the beginning and ending years of each respondent's marriages. Using the beginning and ending dates of all marriages and the beginning and ending dates of women's time raising minor children, the following variables related to single motherhood were constructed: *any time as a single mother* is a dummy variable coded 1 for women who had at least one year during which they had minor children but were unmarried for any reason (divorce, widowhood, or had never been married). *Years as a single mother* is the total number of years a respondent was raising minor children while unmarried. *Long-term single motherhood* is a dummy variable coded 1 for women who spent 10 or more years as single mothers. This value for categorizing long-term single mothers was chosen because it has been associated with women's poverty in old-age in previous research (Johnson & Favreault, 2004)

Health

Health is measured by three physical health variables and one mental health variable in these analyses. The physical health variables pertain to both the respondent and her spouse (if she is married): *1) respondent's self-rated health at the focal wave* 2) *respondent's self-rated health at her first interview wave*, 3) *spouse's self-rated health at the focal wave*. All three physical health variables are coded 1 - very good or excellent, 2 - good, or 3 - fair or poor. Self-rated health has been shown to be closely related to subsequent health outcomes including mortality among the elderly (Mossey & Shapiro, 1982). Self

Mental health is measured for the respondent at the focal interview wave at age 66-68 using *depression scores* from an eight item modified version of the 20-item Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). Respondents answered yes or no to questions about whether they had experienced any of the eight items for "much of the

time" in the past week: felt depressed; felt that everything was an effort; sleep was restless; felt happy; felt lonely; enjoyed life; felt sad; could not get going. The two positive items were reverse coded and the items were summed to form a scale of depressive symptoms with a possible range of 0 to 8. (Mean: 1.45; Standard error: 0.03)

Demographic Characteristics

In addition to current marital status, the following demographic variables are included in these analyses. *Race/ethnicity* is a four category variable coded as 1 - White, non-Hispanic, 2 - Black, non-Hispanic, 3 - other race, non-Hispanic, and 4 - Hispanic, any race.

Because the analysis sample of women aged 66-68 was obtained by pooling across 7 waves, respondents were born over a 12 year age range. Given the rapid changes in women's labor force participation across the last part of the 20th century, differences in labor force attachment between women might be partially due to a cohort effect. In addition, women whose focal interview wave is 2008 or 2010 were interviewed after the Great Recession began in December of 2007. In order to control for differences in attachment to the labor force arising from birth cohort and to assess differences between women reaching age 66-68 after the recession began, a categorical variable for *cohort* was constructed to divide the sample into three groups by birth years: 1 - 1931-1935, 2 - 1936-1939, and 3 - 1940-1943.

Education is a four group variable for 1 - less than high school; 2 - high school diploma or GED; 3 - some college; and 4 - bachelor's degree or higher. *Household wealth* is the total (minus debt) of non-housing assets for the respondent's household, taken from the focal interview wave and converted to 2010 dollars.

Variables Used in Latent Class Analysis

Variables used in the LCA consist of 1) observed indicators of latent class, and 2) covariates used as predictors of latent class. Observed indicators must be categorical variables in LCA, and latent classes are formed by grouping cases together on the similarity of their response patterns out of all possible response patterns on the indicators. The number of possible response patterns increases with the number of variables and with the number of response categories on each variable. To reduce the complexity of the LCA models and thereby increase the likelihood of getting a well-identified model with an interpretable solution, some variables were recoded into versions with fewer categories, as described below.

Observed indicators of latent class. The observed indicators were chosen to represent women's current circumstances at age 66-68. These indicators include current employment characteristics as well as personal circumstances that have been shown in previous research to be strongly associated with labor force participation in late life. Variables used in the latent class analysis were as follows*: in the labor force* (yes or no); *occupation of current job -* professional/managerial, clerical, sales/service/labor, or not working. The occupational categories of sales, service, and labor were combined into one group in the latent class analysis. This reduced the number of occupational groups from 5 to 3 and was done to simplify model fitting by reducing the number of possible response patterns in the data. These three categories were chosen to be grouped together because women in these three occupational categories look the most similar in terms of wages, education, and wealth, variables that are also included as either indicators of latent class or covariates predicting latent class. *Below median hourly wage -* a binary variable coded 1 for women earning an hourly wage less than the median for all workers. *Fair or poor health -* a binary indicator coded 1 for women who rate their health as fair

or poor in the focal wave. Although both physical and mental health are associated with working in later life, the two are highly correlated (Pearson's r = 0.44 in this sample). Thus, I use only women's physical health in defining groups of older women's relationship to the paid labor force in order to simplify the latent class model. However, depression scores are included in the descriptive characteristic of latent classes. *Low household wealth* - a binary indicator coded 1 for women whose non-housing net worth at age 66-68 fell into the bottom 25% of the distribution.

      Covariates predicting latent class. Variable used as predictors of latent class included demographic characteristics, past family and marital history, and past labor force history. Demographic characteristics: *current marital status* - married, divorce/separated, widowed or never married. In some covariate models, current marital status was reduced to two categories: married and unmarried. *Race/ethnicity*, *spouse in fair or poor health* - a binary variable coded 1 if a married respondent's self-rated health was fair or poor. *Birth year 1940-1943* - a binary variable indicating if the respondent was born in the latest birth years of women in my sample. *Education* - collapsed into three categories: less than high school, high school, or some college or higher. The groups "some college" and "bachelors degree or more" were combined because only 3.7% of the sample reported having some college but less than a bachelor's degree and because these two groups had similar rates of labor force participation at ages 66-68. Past marital and family history variables included: *number of own children*, *any time as single mother*, *long term single mother* (10 or more years), *ever divorced*, *number of marriages*, *early divorce* (experienced a divorce at age 30 or before), and *late divorce* (experienced a divorce at age 45 or later). Because of high correlation between the marriage and family variables, including all of them in a single covariates model was not possible. They are entered separately

or in groups along with the demographic covariates. Past labor force history variables include: *longest occupation held: professional/managerial* - a binary variable coded 1 for women whose longest job was professional/managerial; and *total number of years worked* as of focal wave.

Figure 5 shows a diagram of the hypothesized relationships in the latent class analysis. The baseline latent class model is shown on the right side of the figure with the latent categorical variable indicating labor force/retirement status represented by the oval. Observed indicators of latent class are shown in the boxes along the bottom of the baseline model. The box on the left side of the figure, Phase 2 lists the predictors of latent class which include demographic characteristics, spousal health, birth cohort, and early life marriage and family predictors, which are of central interest in this dissertation.

Data Analysis

Data analysis proceeded in four phases. First, univariate and bivariate descriptive statistics were calculated for the sample including demographic characteristics, marriage and family history, and past and current employment characteristics. In the bivariate descriptive statistics, comparisons by group were made using chi-square tests for categorical variables and ANOVA for continuous variables. In the second phase, latent class analysis was used to fit a baseline model of women's participation/non-participation in the labor force at age 66-68 (Phase 1 in Figure 5). The final variables used in modeling latent class are discussed are described in the previous section. The fit of possible models was assessed using the G^2 likelihood ratio statistic and the AIC and BIC relative fit indices as described above.
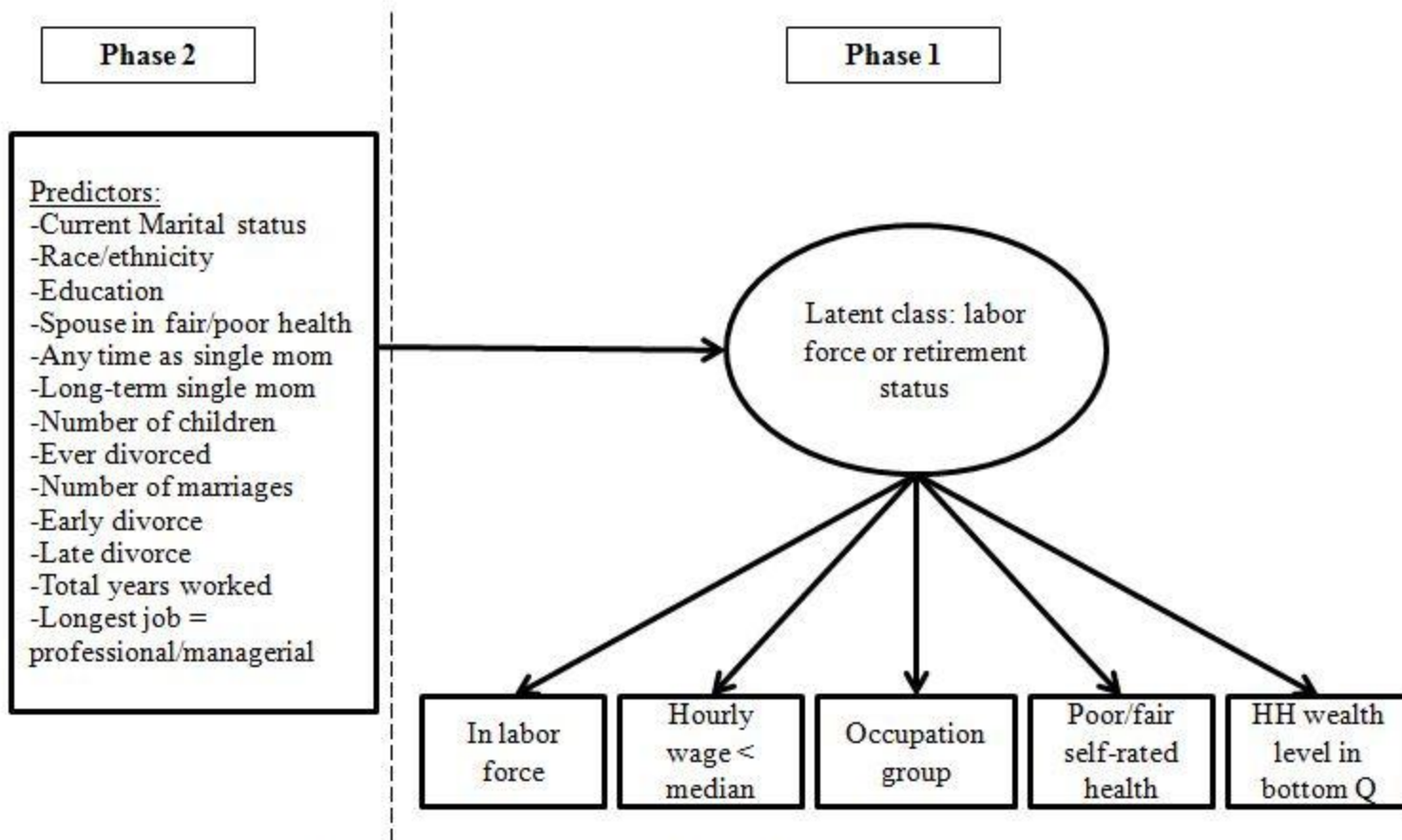
Figure 5. Proposed Model of Women's Labor Force/Retirement Status at Age 66-68

In the third phase of analysis, respondents were assigned to their most likely latent class (based on highest posterior probability), and bivariate descriptive statistics were calculated by assigned latent class. This approach enabled a comparison of the latent classes on more characteristics than could be included in multivariate models. Finally, multivariate analyses were conducted in which covariates were added to the baseline model as predictors of latent class (Phase 2 in Figure 5) including current demographic characteristics, and marriage, motherhood, and labor force variables from earlier in women's lives. All analyses except the latent class modeling were conducted using Stata 13. Latent class analysis was conducted using SAS 9.4 and the PROC LCA add-on software module available from the Penn State Methodology Center (Lanza, Dziak, Huang, Wagner, & Collins, 2014; Penn State, 2014) All analyses were weighted using the HRS weights from the respondent's focal interview wave.

CHAPTER 5

RESULTS

Description of Sample

Demographic Characteristics

Table 2 shows demographic characteristics of the pooled analysis sample of 4,350

women at aged 66-68. More than half (58.2%) are married, nearly one quarter (22.7%) are

widowed, and 15.6% are divorced. Eighty two percent are White, non-Hispanic. Consistent

with educational achievement among older cohorts of American women, well over half hold a

only high school diploma, while only 18.3% have a bachelor's degree or higher. Nearly one-fifth

of this sample did not finish high school. Most rate their health as good, very good, or excellent,

but one quarter feel that their health is fair or poor. Among married women in this sample,

spouse's self-rated health looks similar, with one-quarter of husbands reporting fair or poor

health. Household wealth is highly skewed at this stage of life, with a mean of $395,700, but a

median of only $63,000; moreover, 6% of respondents had a negative non-housing net worth

with a minimum of -$187,000 (not shown in table).

Labor Force Characteristics

Among this sample of older women, nearly all (95.7%) had worked for pay at some point

in their lives and 28.7% were still in the labor force at age 66-68 (Table 3). The modal

occupation group for women's longest held job was professional/managerial (31.1%), followed

by clerical at 27.4%. Mean number of year in the labor force among all women was 31.5. For

women who were still in the labor force at the focal interview wave, 61% were working part-

time, 34.8% full- time, and 4.2% were unemployed and looking for work. The distribution of

Table 2 . Characteristics of Pooled Sample at Age 66-68 Interview Wave
(N = 4350)

	Percent or mean
Marital status (%)	
Married	58.2
Divorced or separated	15.6
Widowed	22.7
Never married	3.5
Race/ethnicity (%)	
White, non-Hispanic	81.7
Black, non-Hispanic	9.7
Other race, non-Hispanic	1.8
Hispanic, any race	6.7
Education (%)	
Less than high school diploma	19.9
High school diploma or GED	58.2
Some college	3.7
Bachelor's degree or higher	18.3
Mean household wealth - 2010 dollars (thousands)	395.7
Median household wealth - 2010 dollars (thousands)	63.1
Self-rated health (%)	
Excellent or very good	43.7
Good	32.0
Fair or poor	24.3
Spouse's self rated health (%) - married R's only (n = 2590)	
Excellent or very good	41.8
Good	33.4
Fair or poor	24.8

Note. Percentages and means are weighted. N is unweighted

Table 3 . Labor Force Characteristics of Women at Ages 66-68
(N = 4350)

	Percent or mean
All women (n = 4,350)	
Ever worked for pay (%)	95.7
In labor force at age 66-68 (%)	28.7
Women who ever worked (n = 4,131):	
Occupation of longest held job (%)	
Professional/managerial	31.1
Sales	11.1
Clerical	27.4
Service	17.6
Labor	12.9
Mean number of years worked	31.5
Mean number of jobs held	2.4
Mean number of jobs lasting 5+ years	1.5
Women in labor force at age 66-68 (n = 1,185)	
Labor force status (%)	
Full-time	34.8
Part-time	61.0
Unemployed and looking for work	4.2
Self-employed (as % of those working)	21.8
Occupation of current primary job (%)	
Professional/managerial	30.0
Sales	17.6
Clerical	24.7
Service	21.0
Labor	6.7
Median hourly wage (2010 dollars)	12.0
Mean hourly wage (2010 dollars)	17.9
Professional/managerial	26.4
Sales	12.7
Clerical	16.5
Service	13.2
Labor	11.7
Mean number of years worked	38.7
Mean number of jobs held	3.1
Mean number of jobs held for 5+ years	1.9

Note. Percentages and means are weighted. N's are unweighted.

occupational group for women's current jobs is similar to that for longest held job for all women, with the exception that the percentage of women working in labor occupations is lower (6.7% vs 12.9%) and the percentage in sales and service occupations is slightly higher. The mean hourly wage among all working women (in 2010 dollars) is $17.90 per hour with a median wage of $12.00. Mean hourly wage differs by occupational group, with professional/managerial positions earning on average roughly double their peers in sales, service, and labor jobs.

Table 4 shows bivariate associations between demographic characteristics and labor force participation and full-time work at age 66-68. Married women have the lowest likelihood of being in the labor force at this age with 26.4% of them working for pay. In contrast, divorced women have the highest participation rate at 37.1% followed by the never married and widowed. Similarly, divorced women have the highest rate of full-time work and married women, the lowest. Race/ethnicity is not significantly associated with being in the labor force, but it is related to working full-time. White and Hispanic women have the lowest rates of full-time work, while Blacks and women of other races have the highest. Consistent with the most recent research on education and late life labor force participation, the more educated a woman is, the more likely she is to be working and to be working full-time. One fifth (19.4%) of women with less than a high school education were in the labor force at age 66-68 compared with more than a third of women with some college or a bachelor's degree (37.1% and 35.7% respectively). Household wealth is also associated with working for pay, with those in top and bottom wealth quartiles least likely to work or to work full time. Women with household wealth in the second quartile have the highest rates of any paid work (34%) and of full-time work (12.7%).

Women's self-rated health shows a linear relationship with paid work: those in excellent or very good health are the most likely to work and to work full-time while those in fair or poor

Table 4. Labor Force Participation at Ages 66-68 by Demographic Characteristics
(N = 4350)

	Percent in labor force		Percent working full time	
Marital status				
Married	26.4	***	8.4	**
Divorced or separated	37.1		13.4	
Widowed	28.3		11.7	
Never married	33.3		11.1	
Race/ethnicity				
White, non-Hispanic	28.7		9.6	***
Black, non-Hispanic	29.7		14.0	
Other race, non-Hispanic	41.7		20.0	
Hispanic, any race	24.0		6.8	
Education				
Less than high school diploma	19.4	***	6.2	***
High school diploma or GED	29.2		9.7	
Some college	37.1		17.9	
Bachelor's degree or higher	35.7		13.7	
Household wealth quartile				
1st quartile	22.8	***	8.6	**
2nd quartile	34.0		12.7	
3rd quartile	30.6		11.0	
4th quartile	26.9		7.9	
Self-rated health				
Excellent or very good	35.3	***	13.0	***
Good	30.7		9.5	
Fair or poor	14.5		5.4	
Spouse's self rated health - married R's only (n = 2575)				
Excellent or very good	29.3		8.2	
Good	25.3		7.9	
Fair or poor	24.0		9.9	
Birth year group				
1931-1935	26.1	**	8.9	†
1936-1939	27.5		9.4	
1940-1943	32.3		11.5	

Chi-square p value: † p < .10; ** p < .01; *** p < .001

Note. Percentages and means are weighted. N's are unweighted.

health are the least likely. Interestingly, for married women, the health of a spouse is not related

the likelihood of being in the labor force nor to the likelihood of working full time. Finally, birth

cohort is related to the likelihood of working. Women born in the later years of this sample are

the most likely to be in the labor force when they are aged 66-68. Thirty two percent of those

born between 1940 and 1943 are working at this age compared with 26.1% of those born in

1931-1935. Although these age groups are born within only a 12 year span, the differences

between them in rates of working are significant. This may be because of the increase in

women's labor force participation across successive cohorts or because the last cohort reached

age 66-68 in either the 2008 or 2010 interview wave, after the start of the Great Recession during

which there was a decline in housing values and equity prices that hurt the retirement prospects

of many Americans near retirement. Indeed, both forces may be at work in producing the

younger group's higher rate of working past retirement age.

Marital and Family History

High rates of marriage and motherhood are evident for the women of this generation with

roughly 97% of the sample having been married at least once in their

lifetime (Table 5). The vast majority of women (70.3%) have been married only once, but more

than a quarter were married two or more times. Nearly all (93%) had at least one child of their

own with a mean number of children of 3.1. A substantial proportion (30.8%) spent at least one

year as a single mother while their children were under age 18, with nearly one tenth of women

having spent 10 or more years as a single mother. Among women married at least once, more

than a third had been divorced at least once. Thirteen percent had experienced a divorce at or

before age 30, while 10% had experienced a later divorce, at age 45 or older. One quarter of

married women had been widowed at least once by age 66-68.

Table 5 . Marital and Family History of Women at Ages 66-68
(N = 4350)

	Percent or mean
All women (n = 4,350)	
Number of times married (%):	
Never married	3.4
One	70.3
Two	21.2
Three or more	5.2
Any own children (%)	93.0
Mean number of own children	3.1
Any time as single mother (%)	30.8
10 or more years as single mother (%)	9.4
Years as single mother (mean; n = 1,379)	7.8
Women married at least once (n = 4,211)	
Ever divorced (%)	34.3
Number of divorces (%):	
None	65.7
One	25.9
Two or more	8.4
Divorced at or before age 30 (%)	13.4
Divorced at age 45 or later (%)	10.0
Ever widowed (%)	25.7
Widowed before age 40 (%)	4.2

Note. Percentages and means are weighted. N's are unweighted.

Table 6 shows bivariate relationships between sample demographic characteristics and marriage and family history variables. Marriage and family events are closely related to demographics. Analysis of race/ethnicity indicates that Black women of this generation had the second highest mean number of own children (3.8) after Hispanics (4.2), and were most the likely to spend at least a year as a single mother. Black women and women in the "other race"

category were most likely to be long term single mothers (29.1% and 29.9% respectively). White women were least likely to ever have been a single mother (27.1%) or a long-term single mother (6.2%). Whites had the highest mean number of marriages (1.31) but the lowest mean number of own children (2.9).

Education had no significant relationship to the likelihood of ever having been divorced, but those with a bachelor's degree or more had the lowest mean number of marriages (1.21) and the lowest mean number of children (2.2). The likelihood of having spent time as a single mother was strongly related to education: 22.5% of women with a college degree compared with 40.9% of women who had not graduated high school. Household wealth at age 66-68 showed a strong bivariate relationship to earlier life marital and family history. Those in the bottom wealth quartile had the highest rates of experiencing divorce (45.3%), the highest number of children (3.8), the greatest likelihood of having been a single mother (49.5%) and a long term single mother (21.3%). These figures decline steadily across wealth quartiles, with women in the wealthiest households having the lowest rates of divorce and single motherhood and the lowest mean number of children.

Self-rated health at age 66-68 is associated with earlier life marital and family events. Thirty percent of those in excellent/very good health had experienced a divorce at some point, but this figure climbs to 40.2% among those who are in fair or poor health at age 66-68. Those in fair or poor health at age 66-68 had also had the highest number of children, and the greatest likelihood of having ever been a single mother and of having raised children outside of marriage for 10 or more years. Finally, birth cohort, also shows strong bivariate relationships with earlier

Table 6. Women's Marriage and Family History at Age 66-68 by Demographic Characteristics
(N = 4350)

	Ever divorced (%)		Number Marriages (mean)		Own children (mean)		Ever single mother (%)		Long-term single mother (%)	
Race/ethnicity										
White, non-Hispanic	33.0	**	1.31	***	2.9	***	27.1	***	6.2	***
Black, non-Hispanic	39.6		1.20		3.8		57.4		29.1	
Other race, non-Hispanic	19.8		1.13		3.0		38.6		29.9	
Hispanic, any race	29.4		1.15		4.2		34.1		14.4	
Education										
Less than high school diploma	34.0		1.31	**	4.0	***	40.9	***	13.3	**
High school diploma or GED	33.5		1.30		3.0		30.1		8.5	
Some college	35.3		1.32		3.1		26.1		10.6	
Bachelor's degree or higher	30.8		1.21		2.2		22.5		7.5	
Household wealth quartile (at age 66-68)										
1st quartile	45.3	***	1.29	***	3.8	***	49.5	***	21.3	***
2nd quartile	38.3		1.34		3.3		35.8		11.1	
3rd quartile	30.4		1.31		2.9		24.2		4.3	
4th quartile	22.8		1.22		2.6		19.0		4.0	
Self-rated health										
Excellent or very good	30.4	***	1.29	**	2.9	***	25.3	***	6.5	***
Good	31.7		1.25		3.0		30.3		8.9	
Fair or poor	40.2		1.33		3.5		41.1		15.1	
Birth year group										
1931-1935	28.2	***	1.26		3.3	***	26.8	**	8.0	**
1936-1939	30.9		1.29		3.2		31.3		7.5	
1940-1943	39.8		1.31		2.8		34.0		12.1	

*Note. Significance tests for means were conducted with ANOVA, significance tests for percentages, with chi-square tests. Percentages and means are weighted. N's are unweighted. χ2 or F test significance level: ** p < .01; *** p < .001*

life circumstances. Each successive cohort has higher rates of divorce, a lower mean number of children, and higher percentages of women who had been single mothers for any length of time.

Latent Class Analysis

Baseline Latent Class Model

In order to arrive at a baseline latent class model describing women's labor force or retirement situation at age 66-68, latent class models with 1 to 5 classes were fit to the data using the observed indicators shown in Figure 5: *In labor force* (yes or no); *hourly wage below median*; *occupation of current job* (non-worker, sales/labor/service, clerical, professional/managerial); fair or poor *self-rated health*; *household wealth in bottom quartile*. Table 7 shows the fit statistics for the 1 to 5 class models. The G^2 statistic declines across successive models and reaches non-significance in Model 4 (p = .207). The AIC and BIC also decline across successive models with the BIC reaching its lowest value in the 4 class model. The four class model is well identified: the best fitted 4-class model (i.e. the model with the highest log likelihood) arose in 65% of 100 sets of random starting values, indicating that the 4 class model has one clear modal solution. The 5 class model, in contrast, was not well identified, with the best fitting 5 class model arising in only 11% of 100 random starts, suggesting that a 5 class model has no single solution. Thus, the 4 class model was selected based on fit statistics, model identification, and on model interpretability.

Table 7 . Fit statistics for 1 to 5 class latent models of women's labor force or
retirement status at age 66-68

Number of Classes	df	G^2	p value	AIC	BIC	Solution %*
1	56	6,960.14	p < .0001	6,974.1	7,018.8	100
2	48	566.32	p < .0001	596.3	692.0	100
3	40	233.55	p < .0001	279.6	426.2	78
4	**32**	**38.24**	**0.207**	**100.2**	**298.0**	**65**
5	24	14.09	0.945	92.1	340.8	11
		(5-class latent model is not well identified)				

Note. Solution in bold is the selected model.
*Percentage of times the solution was selected in 100 random sets of starting values.

Table 8 shows the latent class prevalences and item response probabilities conditional on latent class from the selected 4 class model. The 4 classes of women's labor force/retirement status at age 66-68 have been named to describe their overall characteristics based on the item response probabilities for the five observed indicators. The names of the four classes are: 1) retired well, 2) retired unwell, 3) working advantaged, and 4) working average. In the description of each latent class that follows, the latent class prevalence γ (gamma) represents the probability that any member of the entire sample falls into that class, or simply the percent of the sample in that latent class. Each latent class has a set of conditional probabilities, or probabilities that individuals respond a certain way on each indicator *given membership in that class*. These probabilities are represented using the small Greek letter ρ (rho).

More than half of the sample, 57.6%, falls into the "retired well" latent class. These women are not in the labor force at all ($\rho = 0.00$) and thus fall into the "none" occupational group ($\rho = 1.00$) and earn no wages. They are doing fairly well in two other aspects of life which are associated with late life labor force participation, with only a very small probability ($\rho = 0.14$) of reporting fair/poor health or of having a low household wealth ($\rho = 0.12$) This group of women

Table 8 . Four-class Latent Model of Women's Workforce Attachment at Age 66-68
(N = 4350)

	Latent Class							
	Retired well		Retired unwell		Working advantaged		Working average	
Latent Class Prevalences (γ):	57.6%		14.0%		17.1%		11.4%	
(SE)	(7.1)		(1.5)		(1.5)		(7.1)	
Probabililty of respondent characteristic ρ *(SE)*								
In labor force	0.00	(0.00)	0.02	(0.01)	**1.00**	(0.00)	**1.00**	0.00
Occupation of current job								
None	**1.00**	(0.00)	**1.00**	(0.00)	0.05	(0.02)	0.05	(0.02)
Sales, labor, or service	0.00	(0.00)	0.00	(0.00)	0.22	(0.04)	**0.75**	(0.04)
Clerical	0.00	(0.00)	0.00	(0.00)	0.28	(0.03)	0.17	(0.03)
Professional/managerial	0.00	(0.00)	0.00	(0.00)	0.45	(0.04)	0.03	(0.03)
Below median wage	0.00	(0.00)	0.00	(0.00)	0.25	(0.03)	**0.80**	(0.05)
Health poor or fair	0.14	(0.09)	**0.92**	(0.06)	0.07	(0.02)	0.18	(0.03)
Household wealth in bottom quartile	0.12	(0.01)	**0.64**	(0.04)	0.06	(0.02)	0.30	(0.04)

Note. Item probabilities of .50 or greater are shown in bold to facilitate interpretation.

is thus privileged enough to be out of the labor force despite having a very low likelihood of experiencing health problems that might preclude working for pay.

I have named the second latent class in the 4-class model the "retired unwell." These women comprise 14.0% of the sample. Like the retired well group, the retired unwell have a near zero probability of working for pay (and thus fall into the "none" occupation group and earn no wages). In contrast to the retired well group, however, the retired unwell have an extremely high probability ($\rho = 0.92$) of rating their health as fair or poor and a relatively high probability ($\rho = 0.64$) of having non-housing household wealth that falls into the bottom quartile of the wealth distribution for this sample.

The third latent class in this baseline model is named the "working advantaged" and makes up 17.1% of the sample. These 66-68 year old women are in the labor force ($\rho = 1.00$), and they have near zero probabilities of rating their health as fair or poor ($\rho = 0.07$) or of having low household wealth ($\rho = 0.06$). They have a low probability of earning less than median level wages ($\rho = 0.25$) and their most likely occupational group is professional/managerial ($\rho = 0.45$) with much lower probabilities of working in clerical ($\rho = 0.28$) or sales/service/labor ($\rho = 0.22$) occupations.

Finally, the fourth latent class, comprising 11.4% of the sample, is what I have termed the "working average." These women are in the labor force ($\rho = 1.00$), overwhelmingly in sales, labor, or service jobs ($\rho = 0.75$) that pay less than the median wage for women workers of this age ($\rho = 0.80$). They also have a low probability of reporting fair or poor health, but at $\rho = 0.18$, that probability is higher than for the working advantaged group. Likewise, they have a higher and non-trivial probability of having household wealth in the bottom quartile ($\rho = 0.30$) compared with the working advantaged group.

In sum, this 4-class latent model shows two groups of workers and two groups of non-workers. Beyond the distinction of working or not working, the workers and non-workers are further distinguished by their relative levels of good health and wealth, and in the case of workers, by their wages and occupational group. These four latent classes thus provide a rough indication of the stratification among older women with respect to work as well as with respect to health and wealth, which are closely tied to working at older ages. The retired well group comprises the overwhelming majority of the sample (57.6%). Another 17.1% of the sample is working despite looking similar to the retired well on health and household wealth. These advantaged workers are most likely to be in professional/managerial positions. Among the less advantaged of these 66-68 year old women, the retired unwell (14% of sample) are most likely to be women whose health precludes them from working for pay despite the fact that extra income might be needed as a result of low levels of household wealth. On the other hand, the working average (11.4% of sample) are healthy enough to work, have a lower probability of having low household wealth, but are working predominately in sales, service, and labor positions that pay below this samples median wage of $12.00 per hour (2010 dollars).

It should be noted that this 4 class latent class model does not take into account the work schedule of the women who are in the labor force. Models using full versus part-time work schedule (not shown) did not produce a well-identified latent class model with interpretable classes, so the decision was made to simplify the work status variable to indicate only whether a woman was in the labor force or not.

Because the women in my sample were born between 1931 and 1943, they were aged 66-68 in different waves of the HRS. For women born in the later years of 1940-1943, their focal interview wave used in the above latent class model was either 2008 or 2010, both of which

followed the start of the Great Recession in December 2007. To evaluate whether the recession impacted the baseline latent class model presented above, a separate latent class analysis (not shown) was conducted excluding the women whose focal wave was 2008 or 2010. The new model thus included only the 3,077 women born between 1931 and 1939. The results of this new baseline latent class model were very similar to those presented above. A four-class model was also the best solution, and the four latent classes were very similar in terms of item response probabilities, enabling them to be named similarly.

The primary difference between the model with the 2008 and 2010 waves dropped was in the latent class prevalences. In the new model, the latent class prevalences were as follows: retired well - 50.3% (vs. 57.6% in model with full sample); retired unwell- 23.3% (vs. 14.0%); working advantaged - 16.1% (vs. 17.1%); and working average - 10.3% (vs. 11.4%). Thus the main difference between the original model and the one with the reduced sample was in the prevalences of the retired well and retired unwell groups. Women who were aged 66-68 before the Great Recession began were more likely to be retired unwell and less likely to be retired well than were women in sample as a whole. The difference in prevalences of the two groups still in the labor force was trivial, only about 1 percentage point for each. This result suggests two things: 1) For the entire pooled sample, the start of the Great Recession did not substantially impact rates of being in the paid labor force; and 2) Women born earlier in this pooled sample had higher likelihood of being out of the labor force and in poor health than did women in the full sample. This result is consistent with research showing that in recent decades, older Americans are healthier and have lower levels of disability in their retirement years than their earlier born peers. Since the overall interpretation of the model with the reduced sample was the same, the remaining analyses were conducted with the full pooled sample.

Table 9 . Characteristics of Sample by Assigned Latent Class
(N = 4,350)

	Latent Class				
	Retired well	Retired unwell	Working advantaged	Working average	
	n = 2682	n = 496	n = 711	n = 461	
Mean posterior probability	0.91	0.88	0.84	0.85	
(SD)	(0.00)	(0.00)	(0.01)	(0.00)	
Race/ethnicity (%)					
White, non-Hispanic	86.3	50.4	85.8	75.9	***
Black, non-Hispanic	7.6	22.1	7.9	14.1	
Other race, non-Hispanic	1.2	3.9	2.9	2.3	
Hispanic, any race	4.9	23.7	3.4	7.8	
Education (%)					
Less than high school	17.0	59.1	6.0	25.3	***
High school graduate	60.7	37.0	56.0	66.3	
Some college/bachelor's or higher	22.3	3.9	38.0	8.4	
Mean household wealth (in thousands)	484.7	-0.9	450.4	124.9	***
Median household wealth (in thousands)	104.3	0.0	159.0	14.1	***
Self-rated health at first interview wave					
Excellent or very good	58.1	14.5	75.9	60.6	***
Good	26.6	28.2	20.1	26.7	
Fair or poor	15.3	57.3	4.1	12.7	
Mean CES-D Score at age 66-68	1.3	3.5	0.8	1.3	***

Percentages and means in table cells are weighted. N's and mean posterior probabilities are unweighted

Chi-square used to test group differences in percentages. ANOVA used to test differences in means.

*P-value for χ^2 or F: *** p < .001, ** p < .01, * p < .05*

Table 9. Characteristics of Sample by Assigned Latent Class - continued
(N = 4,350)

	Latent Class			
	Retired well	Retired unwell	Working advantaged	Working average
	n = 2682	n = 496	n = 711	n = 461
Mean posterior probability	0.91	0.88	0.84	0.85
(SD)	(0.00)	(0.00)	(0.01)	(0.00)
Current Marital status (%)				
Married	65.1	26.2	58.9	44.6 ***
Divorced	10.9	32.2	18.9	22.1
Widowed	20.8	37.0	19.2	27.4
Never married	3.2	4.7	3.0	5.9
Ever divorced	29.3	46.8	36.8	37.6 ***
Divorced at age 30 or younger	11.5	19.7	13.4	15.4 ***
Divorced at age 45 or older	8.4	12.9	12.1	12.8 **
Number of marriages (mean)	1.27	1.31	1.31	1.31
Any own children	93.4	94.2	90.9	93.7
Number of own children (mean)	3.0	4.0	2.8	3.3 ***
Any time as single mother	26.1	50.7	32.3	38.5 ***
10 or more years as single mother	6.9	23.9	8.5	12.3 ***

Percentages and means in table cells are weighted. N's and mean posterior probabilities are unweighted

Chi-square used to test group differences in percentages. ANOVA used to test differences in means.

P-value for χ^2 or F: *** p < .001, ** p < .01, * p < .05

Table 9. Characteristics of Sample by Assigned Latent Class - continued
(N = 4,350)

	Latent Class			
			Working	
	Retired well	Retired unwell	advantaged	Working average
	n = 2682	n = 496	n = 711	n = 461
Mean posterior probability	0.91	0.88	0.84	0.85
(SD)	(0.00)	(0.00)	(0.01)	(0.00)
Number of years worked lifetime (mean)	27.7	20.3	39.6	37.6 ***
Working full-time at age 66-68(%)	-	-	38.2	30.0 *
Occupation of longest held job:				
Never worked	5.1	16.2	-	- ***
Sales, service, or labor	36.9	60.6	21.2	68.5
Clerical	28.3	12.9	30.1	18.5
Professional/managerial	29.7	10.7	48.5	13.1
Birth year group (row percentages)				
1931-1935	64.9	9.5	16.8	8.8 *
1936-1939	63.0	9.6	17.0	10.5
1940-1943	58.7	9.6	20.7	11.0

Percentages and means in table cells are weighted. N's and mean posterior probabilities are unweighted

Chi-square used to test group differences in percentages. ANOVA used to test differences in means.

P-value for χ^2 or F: *** p < .001, ** p < .01, * p < .05

Bivariate Description of Latent Classes

In LCA, an individual's latent class is probabilistic based on her response pattern to the observed indicators, but her true latent class is unknown (Collins & Lanza, 2010). An individual's probability of membership in each class of a model can be calculated, and that individual can be classified as belonging to the class for which she has the highest probability of membership, or posterior probability. This approach of assigning latent class based on highest posterior probability and treating it as a known entity is not recommended when assessing the impact of predictors on latent class since such a "classify-analyze" approach introduces bias, leading to weakening of estimates (Bray, Lanza, & Tan, 2015). Instead, the predictor variables should be included as part of a latent class analysis with covariates. However, for descriptive purposes only, I calculated posterior probabilities for each individual in my sample and assigned her to her most likely latent class. I then calculated descriptive statistics to compare the four groups on demographic, and family and marital history characteristics. This enables description and comparison of the characteristics of the members of each latent class on more variables than could be included in multivariate latent class model. Table 9 presents bivariate statistics based on assigned latent class. In the next section, I will present multivariate analyses using latent class analysis with covariates without assigning latent class.

Members of each latent class differ significantly on most measures examined. Race/ethnicity has a strong relationship with latent work/retirement circumstances at age 66-68. The two more advantaged groups--retired well and working advantaged--are overwhelmingly White, 86.3% and 85.8% respectively, compared with 81.7 of the entire sample. However, the most disadvantaged class, the retired unwell, is disproportionately Black or Hispanic. Twenty two percent of the retired unwell are Black compared with 9.7% of the entire sample, and 23.7%

are Hispanic compared with 6.7% of the sample. As expected based on household wealth's inclusion in the latent class model, mean and median household wealth are highest among the retired well and the working advantaged. Indeed these two groups look similar in terms of wealth. In contrast, the retired unwell have a negative mean household wealth (-$900) and a median wealth of zero. The working average have greater wealth than the retired unwell but lag far behind women in the retired well and working advantaged groups.

Current marital status is also strongly associated with assigned latent class in bivariate analysis. Most women in the retired well and working advantaged groups are currently married (65.1% and 58.9% respectively) while women in the retired unwell group are more likely to be divorced (32.2%) or widowed (37.0%) than women in the other three groups. The working average women again fall somewhere in the middle, with higher likelihoods of being currently divorced or widowed than the retired well and working advantaged.

Physical health at the first interview wave (1992 or 1994 for 98% of the sample) differed by assigned latent class as well. The retired well group was mostly in good, excellent, or very good health when they entered the sample with only 15.3% reporting fair or poor health at that time. The working advantaged group reported the best health when they entered the sample with 96% saying they were in good or better health. Consistent with the latent class model showing probability of fair or poor health at age 66-68, self-reported health upon entrance to the sample was the worst for the retired unwell. 57.3% reported fair or poor health at least 2 years prior to age 66-68. The working average group looked very similar to the retired well when they entered the sample, with 12.7% reporting fair or poor health. Psychological well-being at the age 66-68 focal wave, as measured by CES-D depression scores, followed a similar pattern as self-rated health at first interview. The retired well and working average groups had similar mean scores

(1.3) while the retired unwell were the worst off (mean score 3.5) and the working advantaged were the best off (mean score: 0.8)

Marriage and family history varies by assigned latent class as well. Nearly half (46.8%) of women in the retired unwell group experienced a divorce in their lifetime, much higher than women in the other three groups, with the retired well having the lowest rate of lifetime divorce at 29.3%. Early divorces (at or after age 30) and late divorces (at or after age 45) were also slightly more common among the retired unwell, but there were no differences between classes in mean number of marriages. There were also no differences between groups in the likelihood of having any own children with more than 90% of women in all 4 classes having at least one child. The mean number of children did vary, however, by assigned latent class. The retired unwell had the highest mean number of children (4.0) followed by the other less advantaged group, the working average who had a mean of 3.3 children. The working advantaged had the lowest mean number of children at 2.8.

The percentage of women who had spent at any time as a single mother differed substantially and significantly by latent class. More than half of the members of the retired unwell group (50.7%) had been single mothers at some point, and nearly a quarter (23.9%) had spent 10 years or longer as a single mom. In contrast the percentage of women in the retired well class who had been single mothers (26.1%) was only about half of that for the retired unwell, and long term single motherhood was uncommon, with only 6.9% of the retired well having raised kids outside of marriage for 10 years or longer. The working advantaged and working average classes fell between the retired well and retired unwell groups. They had higher rates of single motherhood than the retired well--32.3% for the working advantaged and 38.5% for the working average, but these rates were well below the rate among the retired unwell. Similarly, they had

higher rates of long term single motherhood than the retired well, but these were much lower than the rate of long term single motherhood for the retired unwell group.

Work history also differed by group. Women in the retired unwell class had the lowest lifetime attachment to the labor force, working an average of only 20.3 years by age 66-68. The retired well group had worked an average of 27.7 years. The strongest lifetime attachment to the labor force, however, was found among the working advantaged class who had worked a mean of 39.6 years and among the working average group whose mean number of working years was 37.6. The members of these two groups had, on average, been in the labor force for the overwhelming majority of their adult lives. In terms of current work schedule, the working advantaged class was more likely to be working full-time (38.2%) than the members of the working average group (30.0%). The latent classes also varied in the occupational group of their longest held jobs. The retired well group was the most diverse on this variable, with roughly a third in each of the three occupational categories: sales, service, or labor jobs (36.9%), clerical jobs (28.3%) and professional/managerial jobs (29.7%). Only 5.1% of this group had never worked. Among the retired unwell, in contrast, 16.2% had never worked, and 60.6% had worked their longest job in sales, service, or labor. The working advantaged had the lowest percentage of women whose longest job had been in that category (21.2%) while nearly half had been in professional and managerial positions for their longest job (48.5%). Finally, a large majority (68.5%) of the working average had worked their longest position in sales, service, or labor jobs.

Birth year was associated with the likelihood of belonging to the four latent classes. Members of the most recent birth year group, born between 1940-1943, were less likely to be in the retired well group than their earlier born peers (58.7% for 1940-1943 compared with 64.9% for 1931-1935 and 63% for 1936-1939). They were also the most likely to be in one of the two

groups of women who were still in the labor force at age 66-68, with 20.7% in the working advantaged class and 11.0% in the working average class.

In summary, bivariate analyses showed many significant associations between demographic characteristics and earlier life marriage and family history and latent class of work/retirement status at age 66-68. Blacks and Hispanics were more likely to be in the retired unwell group. Divorce, either as a current marital status or as an experience over the lifetime, was more common among the retired unwell and among the two groups still in the labor force. Single motherhood, any period or long term, was also more common among the retired unwell and among the working advantaged and working average than among the retired well. The two classes still working at age 66-68 showed the highest lifetime attachment to the labor force. Next I present multivariate latent class analysis that includes covariates predicting latent class.

Covariates as Predictors of Latent Class

      Demographic characteristics. Covariates were added as predictors of latent class to the baseline 4 class model shown in Table 8. To avoid problems resulting from high correlations between variables, some covariates, especially marital and child history, were added in separate models to assess their relationships with latent class while controlling for demographic characteristics. (A correlation matrix of marriage and family variables is shown in Appendix B) In Model 1, shown in Table 10, only demographic characteristics were entered as predictors of latent class. The retired well group serves as the reference class. Odds ratios shown in the table may be interpreted as the odds of a woman with each demographic characteristic belonging to the each of three latent classes over the reference class of retired well while controlling for the other variables in the model.   The odds ratios for the intercept may be interpreted as the odds of

a woman with a value of zero on all predictors being in each latent class compared with the

retired well class. In this case, the intercept values would be those for a White, non-Hispanic,

Table 10 . Model 1: Demographic covariates in four-class latent model: odds ratio estimates
   from multinomial logistic regression of covariates on latent class membership (N = 4,350)

Odds Ratio Estimates for membership in each latent class compared to the reference class of Retired Well [95% CI's]	Latent Class			
	Retired Well	Retired unwell	Working advantaged	Working average
Intercept	Reference	**0.03**	**0.16**	**0.15**
		[0.02-0.05]	[0.07-0.38]	[0.06-0.34]
Divorced[1]		**19.69**	**1.97**	**5.38**
		[12.68-30.58]	[1.30-2.98]	[2.94-9.86]
Widowed[1]		**7.23**	1.09	**2.24**
		[4.99-10.47]	[0.76-1.55]	[1.38-3.66]
Never married[1]		**5.99**	0.77	**3.31**
		[3.21-11.16]	[0.32-1.84]	[1.41-7.78]
Black, non-Hispanic[2]		**9.81**	1.39	**3.86**
		[6.7-14.34]	[0.84-2.30]	[2.26-6.57]
Other race, non-Hispanic[2]		**3.64**	**2.51**	**2.33**
		[1.51-8.77]	[1.35-4.64]	[1.12-4.85]
Hispanic, any race[2]		**7.71**	1.23	**2.49**
		[5.05-11.77]	[0.68-2.22]	[1.46-4.26]
Birth year 1940-1943		1.33	1.22	**1.35**
		[0.98-1.80]	[0.92-1.62]	[1.03-1.78]
Has a spouse in poor or fair health		**2.88**	0.78	1.35
		[1.93-4.30]	[0.51-1.20]	[0.85-2.15]
Education - less than high school[3]		**5.64**	**0.32**	1.57
		[4.08-7.80]	[0.15-0.67]	[0.92-2.69]
Education - Some college or more[3]		**0.17**	**2.66**	**0.12**
		[1.18-5.99]	[1.18-5.99]	[0.06-0.22]

Note. Odds ratios in bold are significant at p < .05.

[1] Reference group is "married."   [2] Reference group is "white, non-Hispanic."

 [3] Reference group is "high school graduate"

currently married woman who was born between 1930 and 1939 and who has a high school education and a spouse whose health is good, very good, or excellent. For 66-68 year old women with those characteristics, the odds of being in any of the three latent classes of retired unwell, working advantaged, or working average over the retired well class are extremely low. Odds ratios are 0.03 for retired unwell, 0.16 for working advantaged, and 0.15 for the working average class. In short, women with these characteristics are highly likely to fall into the retired well latent class.

In this multivariate model, there are strong independent effects of current marital status, race/ethnicity, and education on latent class of work/retirement status. Women who are currently divorced at age 66-68 are more likely to be in the other three classes than in the retired well class. They have nearly 20 times the odds of being in the retired unwell class, 5 times the odds of being in the working average group, and nearly 2 times the odds of being in the working advantaged group than in the retired well group compared to the married, even accounting for race, education and birth year. The effect of being widowed is also significant, with the widowed being 7.23 times more likely to be retired unwell than retired well and 2.24 times more likely to be working average than to be to retired well, compared to the married. Having never been married is also associated with membership in the retired unwell (OR = 5.99) and working average classes (OR = 3.31) over the reference class compared to the currently married.

Race/ethnicity has strong independent effects as well, even when accounting for education, current marital status, and the other variables in the model. Black women have 9.8 times the odds of being in the retired unwell group and 3.9 times the odds of being in the working average group over the retired well class, compared to Whites. Hispanic women are also more likely than Whites to be in the retired unwell or working average groups than the

retired well group. Non-Hispanic women of other races have higher odds than White women of being in all three of the other latent classes over being in the retired well class. Women who have a spouse in fair or poor health are 3 times more likely to be in the retired unwell class than in the retired well class (OR = 2.88).

Education shows a similar relationship with latent class in this multivariate model as it did in the bivariate analysis. Women with less than a high school education are more likely to be in the retired unwell group (OR = 5.64), less likely to be in the working advantaged group (OR = 0.32), and more likely to be in the working average group (OR = 1.57) than to be retired well compared with women who have a high school diploma. Women with at least some college are less likely to be in the retired unwell class (OR = 0.17) or the working average class (OR = 0.12) and more likely to be working advantaged (OR = 2.66) than retired well, compared with women who have only a high school education. In summary, many of the relationships between race/ethnicity, current marital status, and education that were evident in the bivariate statistics of Table 9 remain even after controlling for other demographic characteristics.

Table 11 shows the overall tests of significance for each covariate in Model 1 of Table 10. The likelihood ratio (LR) test statistic represents -2 times the difference in log likelihoods between the model with all covariates and a model with the covariate being tested removed from the model. The LR test statistic follows a χ^2 distribution with degrees of freedom equal to the number of parameters being estimated in the model with all covariates minus the number of parameters being estimated in a model without the covariate being tested (df = p_2 - p_1). Since the model is a four class model, degrees of freedom for a single binary covariate is 3, one for each odds ratio being estimated for that covariate. (No odds ratio is estimated for the reference class.). The null hypothesis being tested with the LR test is that "the

covariate of interest does not contribute significantly to the prediction of latent class membership over and above the other covariates in the model" (Collins & Lanza, 2010, p. 155). As Table 11 indicates, all of the demographic covariates in Model 1 are highly significant predictors of latent class with p-values of less than .001.

Marriage, Children, and Previous Labor Force Participation. To investigate whether earlier life marriage, family, and work characteristics are associated with later life work/retirement circumstances, covariates related to these earlier life patterns were added to Model 1 to assess their relationship to latent class. Because many of the marriage and family variables were highly correlated, they could not all be evaluated in a single model. Instead, they are added one or two at a time in Models 2 through 12.

Table 11 . Model 1 Overall significance tests for demographic covariates

Covariate	Likelihood Ratio Statistic	df	p
Divorced	162.81	3	0.0000
Widowed	111.10	3	0.0001
Never married	20.81	3	0.0000
Black, non-Hispanic	160.30	3	0.0000
Other race, non-Hispanic	17.68	3	0.0005
Hispanic, any race	141.38	3	0.0000
Birth year 1940-1943	17.22	3	0.0006
Has a spouse in poor or fair health	22.61	3	0.0000
Education - less than high school	112.67	3	0.0000
Education - Some college or more	64.53	3	0.0000

In Model 2 (Table 12) "any time as a single mother" was added to Model 1 to assess whether single motherhood predicts latent work/retirement status at age 66-68 over and above demographic characteristics. The addition of single motherhood as a covariate attenuates the odds ratios of the demographic predictors somewhat, but the significant relationships remain the

same as those shown in Model 1. Having spent any time as a single mother has significant

independent associations with latent class membership, net of current marital status,

Table 12 . Model 2: Odds ratio estimates from multinomial regression of any time as single
  mother on latent class membership
(N = 4,350)

Odds Ratio Estimates for membership in latent class compared to reference class (Retired well) [95% confidence intervals]	Latent Class			
	Retired Well	Retired unwell	Working advantaged	Working average
Intercept	Reference	**0.03** [0.02-0.05]	**0.16** [0.07-0.32]	**0.14** [0.06-0.30]
Divorced[1]		**15.03** [9.66-23.37]	**1.71** [1.13-2.58]	**4.67** [2.63-8.29]
Widowed[1]		**6.36** [4.47-9.05]	1.02 [0.73-1.42]	**2.14** [1.36-3.36]
Never married[1]		**5.09** [2.91-8.89]	0.80 [0.36-1.76]	**3.08** [1.44-6.61]
Black, non-Hispanic[2]		**8.31** [5.86-11.78]	1.32 [0.83-2.09]	**3.46** [2.13-5.59]
Other race, non-Hispanic[2]		**2.90** [1.41-5.98]	**2.35** [1.35-4.08]	**2.05** [1.09-3.86]
Hispanic, any race[2]		**7.15** [4.89-10.45]	1.28 [0.75-2.17]	**2.36** [1.46-3.84]
Birth year 1940-1943		1.28 [0.96-1.71]	1.21 [0.92-1.58]	**1.31** [1.04-1.71]
Has a spouse in poor or fair health		**2.71** [1.86-3.92]	0.77 [0.51-1.17]	1.32 [0.85-2.03]
Education - less than high school[3]		**5.33** [3.94-7.20]	**0.34** [0.18-0.66]	1.52 [0.94-2.45]
Education - Some college or more[3]		**0.19** [0.12-0.30]	**2.63** [1.33-5.21]	**0.13** [0.07-0.22]
Any time as single mother		**1.48** [1.11-1.98]	**1.39** [1.03-1.88]	1.24 [0.93-1.64]

Note. Odds ratios in bold are significant at p < .05.

[1] *Reference group is "married"*

[2] *Reference group is "white, non-Hispanic"*

[3] *Reference group is "high school graduate"*

race/ethnicity, education, spousal health, and birth year group. Women in their mid 60's who had spent any time raising children outside of marriage have 1.5 times the odds of being in the retired unwell group as in the retired well one and 1.4 times the odds of being in the working advantaged group over the retired well group even when accounting for the other variables in the model. This finding suggests that perhaps single motherhood has different effects for different groups of women. To test whether single motherhood's effect might vary by education level or by race, interaction terms for single motherhood times college education and single motherhood times black were added separately to Model 2 (models not shown) but neither term was significant.

Table 13 shows the earlier life marriage, family, and work covariates added in additional models, Models 3-12. (Model 2 odds ratios for single motherhood are also included for ease of comparison.) These models show the effect of adding the specified variables to the demographic covariates model, Model 1. It should be noted that in Models 3-12, current marital status was collapsed into single dummy variable, "unmarried", coded 1 for women who are divorced, widowed, or never married at age 66-68. This change was made to facilitate the calculation of overall significance tests for covariates since the high correlation between current marital status in 4 groups and many of the marriage and family covariates entered resulted in SAS being unable to calculate LR ratio test statistics and p-values for some variables.

As Model 3 in Table 13 indicates, long term single motherhood (10 or more years) had no significant association with latent class of work/retirement status at age 66-68). Having ever been divorced, however, was significantly associated with belonging to each of the three latent classes of retired unwell, working advantaged, and working average over the reference class of retired well (Model 4). However, when both any time as a single mother and ever divorced was

Table 13 . Single Motherhood, Marriage History, and Work Covariates in Four-class
Latent Models 2-12 (N = 4350)

Odds Ratio Estimates for membership in latent class compared to reference class of Retired well [95% CI's]		Latent Class		
	Retired Well	Retired unwell	Working advantaged	Working average
Model 2:				
Any time as single mother	Reference	**1.48**	**1.39**	1.24
		[1.11-1.98]	[1.03-1.88]	[0.93-1.64]
Model 3:				
10 or more years as single mother		1.46	1.18	1.14
		[0.96-2.24]	[0.63-2.19]	[0.71-1.81]
Model 4:				
Ever divorced		**1.95**	**1.39**	**1.41**
		[1.46-2.62]	[1.04-1.86]	[1.08-1.83]
Model 5:				
Ever divorced		**1.65**	1.20	1.23
		[1.23-2.22]	[0.87-1.37]	[0.94-1.62]
Any time as single mother		**1.38**	1.34	1.26
		[1.02-1.86]	[0.95-1.90]	[0.95-1.68]
Model 6				
Number of marriages		**1.30**	**1.25**	1.14
		[1.08-1.58]	[1.04-1.50]	[0.96-1.36]
Model 7:				
Number of marriages		1.15	1.13	1.04
		[0.95-1.40]	[0.93-1.37]	[0.88-1.23]
Any time as single mother		**1.58**	**1.37**	**1.36**
		[1.18-2.11]	[1.00-1.88]	[1.05-1.77]

Note. Models control for race/ethnicity, current marital status, education, cohort, and spouse's health.
Odds ratios in bold are significant at p < .05.

Table 13 . Single Motherhood, Marriage History, and Work Covariates in Four-class Latent Models 2-12 (N = 4350) - Continued

| | | Latent Class | | |
Odds Ratio Estimates for membership in latent class compared to reference class of Retired well [95% CI's]	Retired Well	Retired unwell	Working advantaged	Working average
Model 8:				
Divorced before age 30	Reference	**1.59**	1.21	1.29
		[1.06-2.37]	[0.79-1.84]	[0.90-1.83]
Model 9:				
Divorced at age 45 or older		1.20	1.27	**1.48**
		[0.83-1.74]	[0.84-1.90]	[1.03-2.14]
Model 10:				
More than 3 own children		**1.56**	0.97	1.40
		[1.18-2.06]	[0.73-1.29]	[0.99-1.97]
Model 11:				
More than 32 years in labor force		**0.53**	**3.71**	**2.50**
		[0.40-0.72]	[2.73-5.04]	[1.88-3.33]
Model 12:				
Any time as single mother		**1.79**	**1.37**	1.28
		[1.35-2.37]	[1.02-1.84]	[0.99-1.66]
More than 32 years in labor force		**0.52**	**3.60**	**2.44**
		[0.39-0.69]	[2.69-4.82]	[1.88-3.33]

Note. Models control for race/ethnicity, current marital status, education, cohort, and spouse's health.
Odds ratios in bold are significant at p < .05.

included in the same model, both predicted a greater odds of membership in the retired unwell class over the retired well class (OR = 1.65 for ever divorced, and 1.38 for any time as single mother) but had no significant relationship with belonging to the working advantaged or working average groups compared with the retired well. Number of marriages, when entered on its own (Model 6), predicted membership in the retired unwell (OR = 1.30) and working advantaged groups (OR = 1.25) but when any time as a single mother was added (Model 7), the effect of number of marriages was reduced to non-significance while any single motherhood produced significant odds of being retired unwell (OR = 1.58), working advantaged (OR = 1.37) and working average (OR = 1.36) over being retired well.

Timing of divorce made a difference. Having experienced a divorce at or before age 30 increased the odds of being in the retired unwell (OR = 1.59) over the retired well latent class even when controlling for demographics and current marital status of married vs. unmarried. A late divorce, at age 45 or older (Model 9), increased the odds of being in the working average group (OR = 1.48) over the retired well group. Having a large number of children, more than the median number of 3 for this sample, also predicted membership in the retired unwell group (OR = 1.56) over the retired well group net of demographic factors (Model 10).

Women who had had a strong attachment to the labor force throughout their lives, measured as having been in the labor force for more than 32 years (the median for this sample) were less likely to be retired unwell (OR = 0.53) than retired well but more likely to be working advantaged (OR = 3.71) and working average (OR = 2.50) than retired well (Model 11). Having a professional/managerial position as one's longest job was also entered as a covariate predicting latent class (not shown), but models that included this variable did not converge, most likely because of the high correlation (r = .68) between current and longest occupation among women

working at age 66-68. As a result, I included this variable only in the descriptive statistics of assigned latent class in Table 9.

Finally, when both any single motherhood and more than 32 years in the labor force were entered in a model with demographic covariates (Model 12), both had significant relationships with latent class of work/retirement status. Any period of single motherhood predicted membership in the retired unwell (OR = 1.79) and working advantaged (OR = 1.37) over the retired well class, while the relationship between above median time in the labor force and latent class remained essentially unchanged from Model 11, with a lower odds of being retired unwell, and a higher odds of being in both working advantaged and working average classes compared with retired well.

Table 14 shows the LR test statistics, degrees of freedom and p-values from the overall tests of significance for the covariates tested in Models 2 through 12 (excluding demographic covariates).

In summary, latent class analysis of women's late life circumstances based on labor force participation, wages, health, wealth, and occupational group revealed 4 latent groups: the retired well (57.6%), the retired unwell (14.0%), the working advantaged (17.1%), and the working average (11.4%). Multivariate analysis predicting women's latent class at age 66-68 found strong associations between demographic factors, with women who were non-White, currently unmarried, had a spouse in poor health and those with less than a high school education more likely to be in the retired unwell group than the retired well group. Being currently divorced and having at least some college education predicted membership in the working advantaged group over the retired well group. Being currently unmarried (any status), non-White, born between

1940 and 1943, and no high school diploma predicted membership in the working average class over the retired well class.

Table 14. Overall significance tests for covariates in Models 2-12

Covariate	Likelihood Ratio Statistic	df	p
Model 2:			
Any time as single mother	664.63	3	0.0000
Model 3:			
10 or more years as single mother	2.99	3	0.3924
Model 4:			
Ever divorced	43.13	3	0.0000
Model 5:			
Ever divorced	25.29	3	0.0000
Any time as single mother	24.16	3	0.0000
Model 6			
Number of marriages	343.18	3	0.0000
Model 7:			
Number of marriages	6.67	3	0.0833
Any time as single mother	51.18	3	0.0000
Model 8:			
Divorced before age 30	8.76	3	0.0327
Model 9:			
Divorced at age 45 or older	10.66	3	0.0137
Model 10:			
More than 3 own children	19.87	3	0.0002
Model 11:			
More than 32 years in labor force	539.2	3	0.0000
Model 12:			
Any time as single mother	100.37	3	0.0000
More than 32 years in labor force	1252.64	3	0.0000

When life course variables related to child and marital history were added as covariates to the multivariate model with demographics, many of them were significant predictors of latent

class, though their odds ratios shifted slightly depending on what other family and child history variables were included in the model. Having spent any time as a single mother consistently predicted membership in the retired unwell group over the retired well one, and in most models also predicted membership in the working advantaged class. In only one model (Model 7) did any single motherhood predict membership in the working average class over the retired well one. In contrast, long term single motherhood of 10 years or longer was not associated with membership in any class over the retired well. Number of children predicted class membership, with women having more than 3 children more likely to be retired unwell than retired well. Ever having experienced a divorce predicted membership in both of the working latent classes and the retired unwell class over the retired well group. Women experiencing a late divorce were more likely to be working average than retired well, and women who had had an early divorce were more likely to be retired unwell than retired well. Finally, strong attachment to the labor force across the life course gave women higher odds of being in either working class than in the retired well one but lower odds of being retired unwell than of being retired well.

In the next chapter, I present a more detailed overview of the results, I discuss the contribution and implications of these findings, and I discuss questions still unanswered that may be addressed in future research.

CHAPTER 6

SUMMARY AND DISCUSSION

Overview and Summary

The aims of this dissertation were 1) to ascertain patterns in older women's relationship to the paid labor force based on current variables known to affect their likelihood of working, 2) to describe the characteristics of women who fall into each pattern, and 3) to determine how earlier life family and work history are related to these later life circumstances. Previous research into women and work in late life has tended to be variable-centered, focusing on the effects of individual variables such as education, health, and current family circumstances in predicting labor force participation. This approach, while valuable, falls short in two respects. First, it does not enable us to see how different *groups* of older women look when simultaneously assessing a constellation of factors associated with work and retirement. A variable-centered approach reveals how different factors independently contribute to women's likelihood of working, but the person-centered latent class analysis approach taken in this dissertation uses *combinations* of those different factors as indicators of women's overall relationship to the labor force in late life. This provides a richer picture of women in late life than simply assessing the independent effects of individual predictor variables. Second, the focus in previous research on women's current characteristics such as marital status and health ignores women's marital, motherhood, and labor force history over the life course, a history that is undeniably linked to later life outcomes.

Given the rapid changes over the last several decades in women's labor force participation and in marriage and family patterns in the United States, an understanding of how divorce, single motherhood, and labor force attachment over the life course impacts the retirement years among current cohorts of older women will be critical in predicting and preparing for shifting patterns of well-being in late life. Women's continued role as primary caretaker of children and higher likelihood of altering their work lives to accommodate family responsibilities, coupled with increasingly diverse family patterns in the U.S. makes women's late life stories worthy of special attention.

In this dissertation, I used latent class analysis (LCA) to uncover patterns of women's work/retirement status at age 66-68 in a pooled sample of women born between 1931 and 1943. Latent class was based on women's current health status, household wealth, labor force participation, and for those in the labor force, wage level and occupational group. Four latent classes emerged from the baseline LCA: the "retired well" class comprised 57.6% of the sample and consisted of women who were not working for pay but had a high probability of being in good or better health and a very low probability of having low household wealth defined as the bottom quartile. The "retired unwell" made up 14% of the sample. These women were also not working but had near certain probability of being in only fair or poor physical health and a high probability of having low household wealth. The "working advantaged" comprised another 17.1% of the sample and was made up of women who were still working at age 66-68, whose modal occupational group was professional/managerial, who were unlikely to be making less than the median wage among workers and very unlikely to be in fair or poor physical health or to be in the bottom quartile of household wealth. Finally, the "working average" class, 11.7% of the sample, was women still in the labor force, overwhelmingly in sales/labor/service jobs and

making below median wages. They had roughly a 1 in 5 chance of being in fair or poor physical health, and nearly a 1 in 3 chance of being in the bottom wealth quartile.

Descriptive statistics of the four latent classes indicated that non-white and less educated women were disproportionately represented among the retired unwell. The majority of the retired unwell had a history of ill health dating back to their entrance into the HRS sample. Nearly three quarters were unmarried at the focal wave, and their median level of non-housing wealth was zero. Half had spent time as single mothers and they had more children than the other three classes. The retired unwell also showed the highest levels of current depressive symptoms. In contrast, the working advantaged group had the best health on entrance into the sample and the lowest level of current depressive symptoms in the focal wave. They also had the highest median level of household wealth despite being less likely to be married than the retired well group. The working average and retired well classes looked very similar on health at first interview and on current depressive symptoms, with both classes looking better off than the retired well but not as good as the working advantaged on these measures.

Multivariate LCA controlling for covariates showed a strong association between women's latent class and demographic characteristics. Women who were Black or Hispanic, currently unmarried, non-high school graduates, or who had a spouse in fair/poor health had much higher odds of being in the retired unwell group than in the retired well group. Being a member of the working advantaged group (vs. retired well) was more likely for divorced than married women and for women with a college education. Membership in the working average group (vs. the retired well) was more likely for unmarried women of any status, non-white women, women born in the later birth year group (1941-1943), and women who did not graduate high school.

Even when controlling for these demographic characteristics, several earlier life history variables were significant predictors of later life latent work/retirement status. Women who had spent any time as a single mother had a higher odds of being retired unwell or working advantaged than of being retired well. However, having spent 10 or more years as a single mother was not a significant predictor of membership in any of the three latent classes compared with the reference class of retired well. Experiencing divorce at any point in life predicted membership in both of the working classes and the retired unwell class over membership in the retired well class. Early divorce was associated with higher odds of being retired unwell, whereas late divorce predicted being in the working average group over the retired well group. Strong attachment to the labor force across the life course predicted labor force participation in later life: women who had worked more than the median number of years for this sample were more likely to still be working and less likely to be in the retired unwell group than in the retired well group.

Discussion

Child and Marital History

The findings from these analyses provide evidence that women's marital and family patterns at younger ages are associated with their work/retirement status and well-being at older ages, net of current demographic factors. Women who spent any time raising children outside of marriage were more likely to be either 1) out of the labor force in ill health with few financial resources (retired unwell) or 2) in the labor force in good health and earning above the median wages (working advantaged) than they were to be retired in good health with average or above average levels of wealth (retired well) net of race/ethnicity, education, current marital status, birth year, and spousal health. This finding suggests that single motherhood is associated with two distinct outcomes at older ages, a finding that would not have been evident in traditional

variable-centered analyses. Some single mothers become advantaged older workers, perhaps in response to stronger attachment to the labor force over their life resulting from their need to provide for children on their own when they were younger. For other women, single motherhood is associated with ill health and withdrawal from the labor force in later life. Why single motherhood operates differently for some women than for others is not clear from these analyses since interaction terms of single motherhood with education and race were not significant. These results do make it clear, however, that single mothers are less likely to be in the retired well group when they are in their mid 60's than are women who never raised children outside of marriage.

Surprisingly, long term single motherhood, defined as 10 or more years raising children outside of marriage, was not associated with latent class of women's retirement/work circumstances at age 66-68. This finding is inconsistent with Johnson and Favreault's (2004) finding that long term single mothers were more likely to be in poverty in old age. I expected that women with longer experiences as single mothers would be worse off in old age and would have higher odds of belonging to the retired unwell or the working average groups than to the retired well group, but this was not the case.

Having ever been divorced consistently predicted membership in the retired unwell group over the retired well group. When single motherhood was not in the same model, divorce also predicted membership in the two working groups, but when single motherhood was included, only the odds ratio for membership in the retired unwell group remained significant. Similarly, number of marriages, when entered in a covariates model on its own, predicted membership in the retired unwell and working advantaged groups (but not the working average group) over the retired well. Adding single motherhood to that model, however, reduced the effect of number of

marriages to non-significance while single motherhood predicted membership in all three classes over being retired well. These findings suggests that much of the impact of earlier life divorce and number of marriages on women's late life circumstances is attributable to the fact that marital disruption often leaves them to raise children alone.

Timing of divorce also had significant associations with latent class. Women experiencing divorce at a young age were more likely to end up in the retired unwell group than in the retired well one, though early divorce had no impact on membership in the two working classes over the retired well. One might expect that an early divorce would have little impact on later life circumstances since women would have had at least 35 years to recover from any negative effects. However, women who divorce at a young age appear more likely to experience additional marital instability across the life course (Pearson's r between early divorce and number of marriages = 0.54) and this may explain the impact of early divorce. Late divorce, after age 45, had a more intuitive impact on women's relationship to the labor force at age 66-68, with women who had divorced at some point in the past 21-23 years being more likely to be in the working average group than in the retired well one. This is likely a reflection of women's need to continue working for pay once there is no longer a spouse to share the financial burden.

Taken together, the results of the multivariate models suggest that markers of marital instability and motherhood history across the life course are more consistently and more strongly related to membership in the retired unwell group in late life over the retired well compared with the other two classes. Being retired unwell is predicted by single motherhood, any divorce, early divorce, number of marriages, and having more than 3 children. Membership in the working advantaged group appears to be second in its association with marital and child history, predicted by single motherhood in two of the models and by number of marriages in one model.

Membership in the working average group is predicted by any divorce, late divorce and single motherhood (in one model). If being retired and well at age 66-68 is more desirable than being retired and poor and sick, then women with unstable marital histories and time raising children alone are at a distinct disadvantage even when accounting for demographic factors.

Labor Force History

Only one predictor related to labor force history was included in the LCA covariates models, a dummy variable indicating if a woman had spent 32 or more years in the labor force, the median for this sample, but this predictor was consistently and strongly related to latent class membership. Women who had spent more than the median time in the labor force were more likely to be working advantaged or working average and less likely to be retired unwell compared with being retired well at age 66-68. This finding suggests that strong labor force attachment across the life course is predictive of continued labor force participation at older ages. Consistent with Pienta et al.'s (1994) "attachment hypothesis," women who have always worked are more likely to continue doing so as they age. But the findings of this dissertation also suggest that a history of work may be associated with the ability to retire in good health since women who worked longer than 32 years had half the odds of being retired and unwell as they did of being retired and well.

Demographic Characteristics

Although this dissertation has shown that child, marital, and labor force history affect late life retirement/work circumstances, it is important to note that their effects are dwarfed by those of demographic characteristics including race/ethnicity, education, and current marital status. In Table 12 of Chapter 5, even after including single motherhood as a covariate predicting latent class, being currently divorced was the strongest predictor of membership in the retired unwell

class followed by being Black, Hispanic, or widowed, and having less than a high school education. All of the odds ratios associated with these variables were much larger than that for single motherhood for predicting this class over the retired well class. The sizes of odds ratios for demographic factors predicting membership in the working average class, though smaller than those predicting retired unwell, still indicate that being currently divorced, widowed, or never married and being non-white is associated with a higher odds of being in the working average group. Recall that the working average group occupies primarily sales, service, and labor jobs, is overwhelmingly paid less than the median hourly wage, and has a roughly 1 in 5 chance of being in fair/poor health and a roughly 1 in 3 chance of being in the lowest wealth quartile. This suggest that this group is composed of many women who work at older ages because they need the continued income, even after reaching the age at which they can collect Social Security benefits and receive health insurance through Medicare. Among demographic predictors of membership in the working advantaged group, only being "other race, non-Hispanic" (vs. White), divorced, and having at least some college were significant.

Health and Late Life Work

Although this dissertation was not focused specifically on assessing the relationship between health and late life work, a few observations on this relationship can be made. One notable finding from the latent class analysis is that no group of "working unwell" emerged from this sample. Although the association between health and labor force participation is strong and well-established (unhealthy individuals are much less likely to work), it stands to reason that there are at least some older women who are working despite fair or poor health because they need the extra income. However, these women did not emerge as a separate latent class. Instead, they appear to be part of the working average group, whose probability of being in fair

or poor health is 0.18.   This may be because the proportion of older women who are in fair or poor health and who also still work for pay is so small. About a quarter (24.3%) of the sample reported being fair or poor health at age 66-68 and among those, only 14.5% were still in the labor force, translating into only about 3.5% of the overall sample working while in ill health. Thus, it was not possible to determine the covariates of working while in fair/poor health or to describe this group on its own.

Instead, fair/poor physical health is the defining characteristic of the retired unwell group, women who are not working. An examination of women's self-reported health when they first entered the sample indicates that 57.3% of the retired unwell group reported being in fair or poor health when they entered the sample, which was at least 4 years prior to focal wave in which they were aged 66-68. This suggests that for the majority of women in the retired unwell group, ill health may be a long-term condition which may contribute both to them being out of the labor force and to them having low levels of household wealth.

Although the measure of mental health was not included in the latent class analysis or multivariate models, in the descriptive statistics of assigned latent classes, CES-D depression scores were consistent with what is already known about physical health, work, and mental health. Women in the working advantaged group were the best off in terms of depression scores (as well as physical health). They had the lowest CES-D scores of the four latent classes. Not far behind were the retired well and the working average, who had scores similar to each other. The retired unwell, however, fared the worst, showing much higher levels of depression than any of the other classes. This group was most likely to be non-white and had the lowest education levels of the four classes. A lifetime of disadvantage translates into poor health, both mental and

physical, at older ages, consistent with a large body of research on socioeconomic status and well-being.

Gendered Life Course and Cumulative Inequality

This dissertation was informed by two related theoretical frameworks: 1) Moen's (2001) idea of the gendered life course wherein women's lives are "relational careers" affected by the life courses of partners, children, and parents; and 2) Ferraro and colleagues (2009) assertion that "reproduction is a fulcrum for defining life course trajectories and population aging" (p. 418). The findings of this dissertation offer some support for these ideas. With respect to Moen's gendered life course, this dissertation did not attempt to compare women's late life circumstances to men's in terms of the impact of marital history, parenthood, or single parenthood. Nonetheless, even among this sample of all women, differences in late life circumstances are evident based on marital disruption, number of children, and having raised children outside of marriage, net of demographic factors. This suggests that among women, variations in "relational careers" do indeed lead to different late life outcomes.

The findings presented here also provides some support for Ferraro et. al.'s idea--part of their overall cumulative inequality framework--that reproduction is a fulcrum for defining life course trajectories. Women's motherhood history (single motherhood and number of children) did indeed predict work/retirement status at age 66-68 net of other factors. However, the effects of these reproductive history variables were small in comparison with effects of other factors. The findings of this dissertation suggest that while reproduction is impactful, structural sources of disadvantage and inequality arising from race/ethnicity and education are much more important causes of cumulative inequality that lead to disparate circumstances in old age.

Moreover, the results presented here suggest that reproduction-related variables lead to different outcomes for different groups of women. Any period of single motherhood predicted membership in both the retired unwell group and the working advantaged group, two very different late life circumstances. Interactions with race and education in these analyses did not explain this difference. Perhaps women who are more advantaged to begin with can draw on more resources to address the challenges of raising kids alone. Alternatively, perhaps they are able to end an unhappy marriage and raise their children on their own *because* they have strong work force attachment and therefore the ability to support themselves and their children without a partner. On the other hand, women with fewer resources may find that single motherhood leads to lifelong disadvantage. Future research might attempt try to unravel the mechanisms by which single motherhood and marital disruption leads to those two very different outcomes

Summary

Taken together, the analyses presented here indicate that older women's work/retirement patterns, while impacted by marital, motherhood, and work history, are more strongly affected by systems of social stratification including race, current marital status, and education. These systems create intractably unequal distributions of education, employment opportunities, health, and wealth across the life course and lead to disparate outcomes in the "golden years." While the income support and health insurance provided by Social Security and Medicare offer critical assistance for those in the more disadvantaged groups of retired well and working average, such programs cannot compensate for a lifetime of disadvantage. Moreover, proposals to increase the age at which older Americans can receive such old age benefits, offered in the name of fiscal responsibility, will only worsen the situation of the most disadvantaged older Americans since,

as this dissertation indicates, many women who are only in their mid-60's are too ill or disabled to remain in the labor force. Maintaining programs to support older women (and men) who can no longer work for pay is critical to keeping them from falling further. Policy changes that can lead to improved outcomes at older ages for women must be focused on younger aged women and directed at improving access to quality education, good job opportunities, living wages, and high quality childcare so that women can more adequately prepare themselves for their later years no matter their race/ethnicity, current marital status or family history.

Implications

This dissertation examined the late life circumstances and earlier life marital, child, and work history of a group of women who reached ages 66-68 over the 12 year period from 1998 to 2010. These women comprise the most recent cohort of women in the U.S. who have passed retirement age. However, the social and economic climate in which they grew to old age differs from that being experienced by today's working age women, the ones who will comprise future cohorts of older women. Today's working age women are aging in a different world than that of their mothers. As I described in Chapter 2, more recent cohorts are experiencing higher rates of single motherhood and cohabitation and lower rates of marriage, higher rates of labor force participation across the life course, and increasing stratification of women's job quality, wages, and retirement benefits by education. The findings of this dissertation provide evidence that these variables are directly related to women's circumstances in old age and thus suggest that in future cohorts of older women, the distribution of patterns of work/retirement will be different. Indeed, the results presented here offer clues to what may lie ahead for older women in the U.S.

Notably, women who have had stronger attachment to the labor force are more likely to continue working at older ages. Moreover, stronger attachment to the labor force across the life

course predicts greater well-being at older ages since women who have always worked are more likely to be in the working advantaged group than the retired well but less likely to be retired unwell than retired well at ages 66-68. The fact that more recent generations of women are more attached to the work force across their lives thus bodes well for the well-being of future cohorts of older women who have worked for their entire adult lives, though benefits will certainly vary by education level and kind of jobs held.

Single motherhood predicted late life circumstances in these analyses, but single motherhood for today's younger women looks much different from what it was for the sample of women in this dissertation. "Single" mothers are increasingly women in cohabiting relationships rather than women who are raising children completely on their own. Though cohabiting relationships are less stable than married ones, the impact of raising children outside of marriage may differ for future cohorts of retirement age women, perhaps becoming more stratified by mother's education level.

The decline in marriage rates also means that the impact of divorce in shaping women's later life situation may be reduced. Having ever been divorced, and more importantly, being currently divorced, were both associated with outcomes in old age for women. If women marry at lower rates while also having stronger attachment to the labor force across their lives, the relationship between divorce and late life circumstances may shift, perhaps for the better.

Though the meaning and impact of being unmarried and raising children as a single mother may be changing across cohorts, the combination of changing family patterns and increasing economic and educational stratification among women suggests that the distribution of women across the latent classes I have described will almost certainly shift in coming cohorts of older women. In this sample, 58% were retired well, 14% were retired unwell, 17% were

working advantaged, and 11% were working average. Given stronger labor force attachment in more recent generations of women and changes in the retirement income system in the U.S., it seems likely that the two working classes will grow in size in future cohorts of older women. The working advantaged group may be expected to increase as college-educated women who have worked their entire lives enter the "retirement years" in good health and remain in the labor force longer, a trend that is already evident.

The working average group will likely also increase in size as larger numbers of unmarried women reach their mid 60's without sufficient retirement assets to support withdrawal from the labor force. A lifetime of work in lower wage jobs, the kind occupied by the working average group that often do not offer pension benefits, will leave women who are healthy enough to work little option but to continue doing so, especially those women who are unmarried. Though the ranks of the working poor are estimated to be rather small among older Americans— 3.5% of workers aged 51-61 in (Lee, Teng, Lim, & Gallo, 2005), their representation among post-retirement aged women will almost certainly grow, increasing the prevalence of the working average latent class or perhaps emerging as a distinct separate group.

Based on the findings presented here, the prevalence of the retired unwell group also seems likely to grow. This latent class had the most unstable marital histories, the highest rates of single motherhood, and the weakest attachment to the labor force across their lifetimes. To the extent that these factors retain the same association with women's late life circumstances as in these analyses, rising rates of single motherhood and declining rates of marriage, especially among the less educated, seem almost certain to leave more women in the retired unwell group. Women at the bottom of the socioeconomic distribution are more likely to be poor, sick, and out of the labor force at older ages in the decades ahead.

If the proportions of women in the working advantaged, working average, and retired unwell groups grow in future cohorts, the proportion of women in their mid 60's who are retired and well will decline. Some women who might have fallen into the retired well group among today's retirement aged women, will instead become tomorrow's working advantaged because of their education and strong attachment to the labor force. Others may find themselves in either in the working average or retired unwell group owing to changes in the marriage and family patterns and increasing stratification in the labor market. In short, increasing stratification among today's working aged women in terms of wages, pensions, and family patterns will translate into greater stratification among older women than is evident in this sample.

Even accounting for the educational, labor force, and marriage and child history differences between the latent classes, differences between them in terms of race/ethnicity are striking. Non-white women, especially Black women, had much higher odds of being in the retired unwell group even while controlling for other demographic factors and including single motherhood in the model. An accumulation of a lifetime of racial disadvantage and discrimination has clear effects on well-being in old age. Black and Hispanic women are more likely to live in disordered communities where crime is common, to have reduced access to high quality health care, and to be educated in lower quality school systems than their white middle class counterparts. Thus, even when accounting for education levels and child and marital history variables, they are more likely to be retired and in ill health or still working but at lower wage jobs than to be working advantaged or retired and well. Though the purpose of this dissertation was to evaluate family and marital history, these analyses make clear that persistent structural racial disadvantage will continue to produce disparate outcomes for older women.

One finding of this dissertation that is encouraging is that strong attachment to the labor force across women's lifetimes is associated with membership in the two working groups, both of whom are in better situations at age 66-68 than women in the retired unwell group. The retired unwell group had the very weakest attachment to the labor force, thus stronger attachment to the labor force may help some women avoid falling into the retired unwell group at this age. Women who can stay attached to the labor force across their adult lives even while raising children outside of marriage may be better positioned to support themselves when they reach retirement age. Unfortunately, although women's labor force participation in the U.S. has reached historical highs, it still lags behind that of women in other industrialized nations. Government and employer policies that could help and encourage women to remain in the labor force across the life course even while raising children might improve their situation in the retirement years, especially for women who raise children on their own. Access to high quality affordable day care for all women and wages that make working more attractive than staying out of the labor force (including a higher minimum wage) are two key policies that could help women both when they are younger and at retirement age, as the findings of this dissertation suggest.

Limitations

Several limitations to this dissertation must be acknowledged. Although this dissertation used data from all ten waves of the Health and Retirement Study, the analyses presented here are cross-sectional. Women's circumstances were not followed over time, and these analyses thus offer no insight into whether and how women transition from one latent class to another in the later period of their lives. Moreover, I have looked at women at one specific and narrow age range, 66-68. This age range was selected because it represents the earliest age at which women

are eligible for both Social Security and Medicare and have thus passed important milestones for receipt of public old age benefits. However, rates of labor force participation decline with each passing year, and the relationship between women's earlier life history and late life circumstances might differ for women who are older or younger than the women in my sample. Finally, although I include fair/poor health as an indicator of latent class, no conclusions can be drawn from these analyses about the direction of the relationship between health and late life circumstances. As I discussed in Chapter 2, the relationship between health and work and finances is complex and almost certainly multi-directional. Women may withdraw from the labor force because of ill health leading to financial problems and a reduction in wealth, or poverty and weak attachment to the labor force across the life course may both conspire to produce ill health in old age. This dissertation was not designed to address this issue.

Directions for Future Research

Perhaps the most compelling direction for future research would be to view the findings of this dissertation as a baseline portrait of women's relationship to the paid labor force in late life for the current cohort of older women and to conduct similar analyses in the future to see how this portrait changes with new generations. How will the combination of economic, job market and family pattern changes that I described in Chapter 2 affect future generations of women when they reach old age? Will the U.S. see an increase in the proportion of women who are retired and unwell as I suggest?

A second avenue of research would be to identify and describe women who are working and poor or working, poor, and ill health when they reach retirement age. These women did not emerge as a separate class in the latent class analysis. Though statistically, they fell in with the working average group, they surely exist in a practical sense as a distinct group. Qualitative

research that explores these women's lived experiences of their current circumstances, and their past motherhood and marital history, could provide important insight that would inform other avenues of research to improve well being at older ages.

A third potential research direction would be to examine whether and how women transition in and out of the latent classes described here as they age. For example if a woman is in the working average group at age 66-68, how likely is that she will transition to retired well or retired unwell and what factors are associated with those transitions? Understanding the factors that lead women into more or less advantageous circumstances in old age may help them prepare better for the retirement period of life.

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APPENDICES

Recoding of HRS occupation codes used in analyses

HRS 1992-2006

Recoded variable categores[1]	HRS Codes 1992-2006	Census 1994 General Categories
1. Professional/Managerial	1	Managerial specialty operation (003-037)
	2	Professional specialty operation and technical support (043-235)
2. Sales	3	Sales (243-285)
3. Clerical	4	Clerical, administrative support (303-389)
4. Service	5	Service: private household, cleaning and building services (403-407)
	6	Service: protection (413-427)
	7	Service: food preparation (433-444)
	8	Health services (445-447)
	9	Personal services (448-469)
	17	Armed forces (900)
5. Labor	10	Farming, forestry, fishing (473-499)
	11	Mechanics and repair (503-549)
	12	Construction trade and extractors (553-617)
	13	Precision production (633-699)
	14	Operators: machine (703-799)
	15	Operators: transport, etc. (803-859)
	16	Operators: handlers, etc. (863-889)

HRS 2008 and 2010

Recoded variable categores[1]	HRS Codes 2008-2010	Census 2000 General Categories
1. Professional/Managerial	1	Management Occupations (000-044)
	2	Business Operations Specialists (050-073)
	3	Financial Specialists (080-195)
	4	Computer and Mathematical Occupations (100-124)

	5	Architecture and Engineering Occupations (130-156)
	6	Life, Physical, and Social Science Occupations (160-196)
	7	Community and Social Services Occupations (200-206)
	8	Legal Occupations (210-215)
	9	Education, Training, and Library Occupations (220-255)
	10	Arts, Design, Entertainment, Sports, and Media occupations (260-296)
	11	Healthcare Practitioners and Technical Occupations (300-354)
2. Service	12	Healthcare Support Occupations (360-365)
	13	Protective Service Occupations (370-395)
	14	Food Preparation and Serving Occupations (400-416)
	15	Building and Grounds Cleaning and Maintenance Occupations(420-425)
	16	Personal Care and Service Occupations (430-465)
	25	Military Specific Occupations (980-985)
3. Sales	17	Sales Occupations (470-496)
4. Clerical	18	Office and Administrative Support Occupations (500-593)
5. Labor	19	Farming, Fishing, and Forestry Occupations (600-613)
	20	Construction Trades (620-676)
	21	Extraction Workers (680-694)
	22	Installation, Maintenance, and Repair Workers (700-762)
	23	Production Occupations (770
	24	Transportation and Material Moving Occupations (900-975)

[1] Sales, service, and labor categories (2, 4, and 5) were combined for some analyses.

APPENDIX B.

Correlation Matrix of Key Marriage, Family, and Work Variables

	1	2	3	4	5	6	7	8
1. Ever divorced	1.0000							
2. Early divorce	0.5388	1.0000						
	0.0000							
3. Late divorce	0.4484	0.0672	1.0000					
	0.0000	*0.0000*						
4. Number of marriages	0.6253	0.5311	0.3036	1.0000				
	0.0000	*0.0000*	*0.0000*					
5. Number of children	-0.0009	-0.0030	0.0323	0.0631	1.0000			
	0.9509	*0.8442*	*0.0330*	*0.0000*				
6. Ever a single mother	0.4929	0.3472	0.1352	0.3433	0.1692	1.0000		
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*			
7. Long-term single mother	0.1800	0.1296	0.0139	-0.0648	0.1087	0.4939	1.0000	
	0.0000	*0.0000*	*0.3589*	*0.0000*	*0.0000*	*0.0000*		
8. Number of years worked	0.1405	0.0842	0.0497	0.0837	-0.2396	0.0701	0.0420	1.0000
	0.0000	*0.0000*	*0.0010*	*0.0000*	*0.0000*	*0.0000*	*0.0056*	

Note. P-values of correlation coefficients are shown in italics.