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Familial Caregiving and Timing of Retirement: A Gendered Cohort Analysis

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ABSTRACT
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Retirement timing has been linked to a host of outcomes for individuals, families, and communities. Well-known predictors of retirement timing include health, wealth, and cognitive capacity; a few studies have also linked gender and family caregiving to retirement timing. In the present study, data from the Health and Retirement Study were used to create profiles of pre-retirement family caregiving (operationalized as time and financial transfers to participants' aging parents and adult children). These profiles, as well as participant gender and cohort, were used to predict later retirement timing. All profiles retired, on average, earlier than their full eligibility for Social Security benefits. The Eldercare profile, which was characterized by high levels of time and financial transfers to aging parents, retired the earliest. On average, women retired earlier than men. Members of the War Babies cohort (b. 1941-1947) retired earlier than members of the HRS cohort (b. 1931-1941). There was not a significant interaction between caregiving profile and gender, revealing that when men enacted female-typical caregiving roles, their retirement timing resembled women's. Implications for individual retirement decision-making and policy are discussed.

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Study Overview

In Western industrialized cultures, retirement is a major age-graded developmental event (e.g., Baltes, 1987; Heckhausen, 1999; Moen & Wethington, 1999; Schaie, 1965), the timing of which has been linked to financial security, physical health, mental health, and psychosocial outcomes (e.g., Palmore, Fillenbaum, & George, 1984). The majority of US workers retire before their full Social Security eligibility, placing them at risk for financial disadvantage and burdening the Social Security system (Fields & Mitchell, 1984; Purcell, 2010).

Family caregiving is known to affect retirement timing, with financial caregiving associated with delayed retirement and time-intensive caregiving associated with earlier retirement (e.g., Dentinger & Clarkberg, 2002). However, most studies have only examined one type of caregiving at a time (e.g., transferring money to adult children or spending time caring for aging parents), rather than examining profiles defined by different combinations of caregiving types. The effects of caregiving on retirement timing are often reported retrospectively, which may be biased. Finally, the roles of gender and cohort in determining the link between caregiving and retirement timing are understudied, but are important to understand because these groups have different experiences and may have differential outcomes. The trend toward early retirement is especially pronounced for women. In the present study, profiles of pre-retirement caregiving (including combinations of financial and time-intensive caregiving for adult children and for aging parents) were compared in terms of the timing of their retirement, as were interactions between caregiving profiles, gender, and cohort membership

(defined by year of birth). These findings inform retirement decision-making and policy to optimize post-retirement well-being for individuals and families.

While the majority of retirement decision research has focused on health and wealth as predictors of retirement, recent research suggests that behavioral and psychosocial aspects of this decision are also important (reviewed in Knoll, 2011). The effect of the work-family interface, or the mutual influence of work and family roles on one another, is particularly understudied as a predictor of retirement (Raymo & Sweeney, 2006). The present study extended these psychosocial investigations by considering patterns of family caregiving as determinants of retirement timing. In addition to examining the moderating role of gender on the effect of family caregiving responsibilities on retirement timing, the present study also examined the role of cohort membership to assess how this decision might differ for individuals developing in different sociohistorical contexts. This investigation used data from the Health and Retirement Study (HRS), a large longitudinal study of retirement antecedents and consequences.

Family Caregiving and Retirement Timing

Retirement-aged adults may provide at least some type of care for their aging parents and/or adult children, often both at once (e.g., Grundy & Henretta, 2006). An analysis including participants in Great Britain and the United States found that around one-third of women aged 55-69 years reporting providing help to both their aging parents and their adult children, and only one-fifth of women provided help to neither (Grundy & Henretta, 2006). Caregiving "crises" (significant disconnects between supply and demand of caregivers, as well as lack of adequate support for caregivers) have been noted

regarding care for both dependent children and elders, making demands on the resources of retirement-aged adults (e.g., Larkin, 1999; Marks, 1996; Miller, 1986; Smith, 2004).

Intergenerational time and financial transfers. The HRS divides caregiving into time and financial transfers. The term "caregiving" often refers to time transfers such as helping elderly parents with personal care or babysitting for grandchildren (Attias-Donfut, Ogg, & Wolff, 2005), but care for family members can also take the form of financial transfers, such as gifts or loans of cash, or paying bills or expenses for the family member.

Intergenerational analyses indicate that, in general, financial transfers tend to be directed "downward" to younger generations, such as when parents or grandparents pay for educational expenses. However, time transfers are directed both "upward," such as when children drive their aging parents to medical appointments, and downward, such as when parents prepare meals for their adult children (Albertini, Kohli, & Vogel, 2007; Attias-Donfut, Ogg, & Wolff, 2005). The present study examined profiles of caregiving, simultaneously investigating retirement-aged adults' financial and time transfers to the generations above and below them.

Cluster analysis, an exploratory approach, was used to document the combinations (profiles) of caregiving that naturally occur among HRS participants. This aspect of the social context surrounding retirement timing has been relatively understudied. It is important to investigate this social context because family caregiving impacts the timing of retirement, particularly for women (e.g., Pavalko & Artis, 1997).

Gender

Gender is a psychosocial characteristic that shapes the nature of occupations and the timing and duration of employment (Moen, 1996), as well as the type and extent of familial responsibilities (e.g., Hochschild & Machung, 1989). Gender also influences retirement timing. Women tend to retire earlier than men for a host of reasons not yet fully understood (Han & Moen, 1999). Some research shows that women's family characteristics (e.g., marital status and number of children) are more influential on their retirement timing than men's (e.g., McDonald, 1996). This research suggests the importance of social factors in the retirement decision, especially when considering gender, which the profiles of family caregiving explored in the present study partially elucidate.

An early study of gender differences in predictors of retirement timing found that predictors varied by gender. For men, older age, lower education and occupational status, worse health, and increased social activity all increased the odds of retirement in any given year, while for women, only older age was a significant predictor (George, Fillenbaum, & Palmore, 1984). Another study found a gender difference in the effect of number of children on retirement timing. For women, having a greater number of dependents was associated with greater odds of retiring, while for men, more dependents decreased the odds of retirement (Talaga & Beehr, 1995), most likely reflecting men's greater breadwinning responsibilities and women's greater caregiving responsibilities. The present study extended this literature by examining the effects of gender and caregiving profile on retirement timing separately, as well as their interaction, thus explicating one explanation for gender differences in retirement timing.

Gender, caregiving, and retirement timing. Caregiving demands often peak at late midlife, which is also when women's labor force participation and lifetime earnings peak (Pavalko & Artis, 1997). Theorists note that patterns of gender inequality, encoded in social structures such as gender-segregated labor markets and marriage, mandate multiple roles for women across the life span that affect women's patterns of retirement timing (Zimmerman, Mitchell, Wister, & Gutman, 2000). The consistent finding that women tend to retire earlier than men (e.g., Antolin & Scarpetta, 1998; Moen & Flood, 2013) which has important implications reviewed below, is sometimes attributed to women marrying older partners and retiring around the same time (e.g., Hurd, 1990), but evidence suggests that family caregiving responsibilities may also contribute to this gender difference in retirement timing.

Zimmerman and colleagues found that pre-retirement, Canadian women did not anticipate that family caregiving responsibilities would affect their timing of retirement, but demographically matched female retirees reported that these responsibilities indeed were influential. In another study, 15% of Canadian women who had recently retired said they did so due to family responsibilities, while only 1% of men cited the same reason (Statistics Canada, 1997). Longitudinal analyses have revealed unidirectional effects such that the necessity of caregiving leads women to reduce or cease paid employment, but employment status does not affect likelihood of caregiving (Pavalko & Artis, 1997).

The effects of caregiving on retirement timing have been shown to be moderated by gender. One study found that women caring for a family member were much more likely to retire than women not caregiving, but men caring for a family member were less likely to retire (Dentinger & Clarkberg, 2002). The authors suggest that, consistent with

cultural gender roles mandating breadwinning roles for men and caregiving roles for women (e.g., Eagly & Steffen, 1984), men's caregiving may be more likely to take the form of financial support, for which continued employment is most beneficial. However, women's caregiving is more likely to take the form of time-intensive personal or instrumental care, for which a reduction in paid work could be most beneficial. These findings suggest that caregiving may exert opposing effects on timing of retirement depending on if the caregiving involves time transfers or money transfers. In the present study, the effects of both participant gender and type of caregiving (time transfers, financial transfers) on retirement timing, as well as their interaction, were analyzed, disentangling the effects of gender and type of caregiving on retirement timing.

Intergenerational Transfers and Retirement Timing

Transfers to aging parents. Although men and women don't differ in the degree to which they feel responsible for providing care for their aging parents (e.g., Wolfson, Handfield-Hones, Glass, McClaran, & Keyserlingk, 1993), women devote more time to parental caregiving and are more likely to be aging parents' primary caregivers compared with men (e.g., Climo, 2000; Henz, 2009; Horowitz, 1985; Neal, Ingersoll-Dayton, & Starrels, 1997). Eldercare can significantly increase work-family conflict and work-role strain, particularly for women (e.g., Anastas, Gibeau, & Larson, 1990; Johnson & Lo Sasso, 2006; Smith, 2004; Stone, Cafferata, & Sangl, 1987; Stone & Short, 1990). Retrospective reports suggest that individuals who retired due to caregiving responsibilities, including eldercare, were likely to later perceive that they retired earlier than they wanted to, even if the retirement was "voluntary" (Humble, Keefe, & Auton, 2012). The present study's use of pre-retirement measures of eldercare to prospectively

predict retirement timing eliminates recall bias (e.g., Raphael, 1987), such as participants' retrospective reports being affected later caregiving experiences or by their later assessments of their retirement decision.

Transfers to adult children. For both men and women, financial transfers to children outside of the household have been linked to delaying retirement (Szinovacz, DeViney, & Davey, 2001). Retirement may also be delayed due to the necessity of aiding adult children by caring for grandchildren, either as full-time or part-time caregivers (e.g., Pruchno, 1999). One qualitative study found that grandmothers with heavy grandchild care duties delayed retirement due to reduced and/or fragmented employment associated with the care and resultant financial stresses, including related financial support of their adult children and grandchildren (Harrington Meyer, 2012). However, care for grandchildren can also be a reason for unexpected and/or involuntary earlier retirement (Szinovacz & Davey, 2005).

Summary. The present study integrated studies that have linked different types of caregiving to retirement timing. Examining naturally-occurring profiles by combining several types of caregiving (including financial transfers to parents and children, personal and errand care for parents, and grandchild care) illuminated both which combinations were prevalent for this sample, as well as how different profiles were associated with retirement timing. Additionally, few of these studies used longitudinal designs to examine the predictive relations between caregiving and retirement timing, which was a strength of the present study.

Life-Span Developmental Theory

In the current study, the examination of gender and cohort membership as moderators in the relations between family caregiving profiles and retirement timing was grounded in life-span developmental theory (e.g., Baltes, 1979; Baltes, 1983; Baltes, Lindenberger, & Staudinger, 1998; Baltes, Reese, & Lipsitt, 1980; Baltes & Smith, 2004). Both life-span developmental theory and life course theory (e.g., Elder, 1974, 1985, 1998) are concerned with identifying the effects of sociohistorical time and group membership on developmental processes (e.g., Baltes, Cornelius, & Nesselroade, 1979). Rather than seeking to identify universal patterns, life-span developmental theory takes a contextualist approach, asking, "For whom?" and "Under what circumstances?"

Family caregiving and retirement are influenced by sociohistorical factors such as local and national policy, social attitudes and norms, and changes in technology (e.g., Atchley, 1979; Czaja & Rubert, 2002; Marks, 1998; Walker, Pratt, & Eddy, 1995). Due to rapid changes in women's legal and social situations in the past several decades in the United States, gender-by-cohort interactions were also particularly interesting (e.g., Stewart & Healey, 1989). Although sociohistorical factors were not directly examined in this study, any cohort differences will be interpreted reflecting sociohistorical factors.

Developmental transitions (or turning points; Rutter, 1996) are of scholarly interest to life span and life course researchers because transitions themselves, including their timing and quality, can be predictive of behavioral and psychological outcomes (e.g., Brooks-Gunn, Peterson, & Eichorn, 1985; Rutter, 1989). As reviewed below, characteristics of the retirement transition, including its timing, may impact well-being after retirement, including financial, health, and psychosocial well-being.

As noted earlier, retirement is an age-graded, developmentally significant life event (e.g., Schaie, 1965; Baltes, 1982). Neugarten (e.g., 1969, 1979) discusses "social clocks," social norms for the timing of developmentally significant events. She posits that individuals are aware of social clocks, as well as whether they are early, on time, or late according to age norms. Psychological distress may occur as a result of "off-time" developmental events or transitions. Thus, in addition to the well-documented financial ramifications of off-time (especially early) retirement for individuals and their partners (reviewed in Sass, Sun, & Webb, 2007), one would expect psychological ramifications as well. Indeed, several studies have found evidence of worse physical and mental health associated with off-time (especially early) retirement (Calvo, Sarkisian, & Tamborini, 2013; Quick & Moen, 1998; Szinovacz & Davey, 2004).

Due to the structure of Social Security benefits in the United States over historic time, "off time" retirement ages may vary by cohort. In 1983, the Social Security Administration passed an amendment gradually increasing the full retirement age from 65 to 67 across 1998 to 2020 (reviewed in Purcell, 2010). However, despite this policy change, most Americans continue to retire earlier than their full benefits eligibility, a tendency that appears to be increasing with younger cohorts (Gendell & Siegel, 1992; Gendell, 2001). In addition to differences in the experience of retirement itself, earlier life experiences that differ across cohorts may shape work and family in a way that later impacts retirement.

Stewart and Healey (1989) provided evidence that the impact of social events (including catastrophes such as war as well as broad social trends) differentially affect individuals' development based on the ages/life stages during which the event was

experienced. Using a longitudinal study of three cohorts of women around and after World War II, Stewart and Healey noted cohort differences among women's family activity and labor force participation. These cohorts of women differed in terms of how many of them became mothers, the degree to which they participated in the labor force, their commitments to motherhood and employment, and the degree to which they viewed work and family roles as conflicting. The authors explain these behavioral differences by pointing to the different values and identities formed by different cohorts of women as they passed their childhoods and early adulthoods in different sociohistorical contexts. In the present study, potential cohort differences in the link between caregiving profiles and retirement timing, could be a function of differential experiences earlier in the life span, as well as differing context at the time of retirement itself (e.g., the strength of the economy when each cohort retires).

Theory-Driven Analytic Approach. The present investigation primarily employed a person-centered, rather than a variable-centered, analytical approach. Person-centered approaches seek to identify groups of participants who share particular attributes, rather than focusing on relations between variables across all individuals. Person-centered approaches are relatively underutilized in longitudinal analyses. However, they are particularly helpful for identifying group differences in patterns of development. Variable-centered approaches are more effective for determining relative influences of different factors (Laursen & Hoff, 2006). The present study combined this descriptive aspect, identifying the patterns of caregiving that exist when considering the combinations of four types (financial and time transfers to adult children and aging

parents), with a more traditional variable-centered approach, considering the relative contributions of caregiving profiles, gender, and cohort to the timing of retirement.

Definitions of Retirement

McDonald and Donahue (2011) argue that, because retirement is a function of society and the economy, both of which are in constant flux, the meaning and function of retirement as a social institution has been in flux since the emergence of retirement in the early 20th century. They note that the earliest form that retirement took in modern Western nations was an age-linked complete exit from the workforce for older middle-class workers. This exit was often accompanied by a pension and/or other rewards and was designed to encourage worker loyalty to employers. At other points in history, retirement has served other functions, such as removing older employees from the workforce during economic recessions to create vacancies for younger workers (McDonald & Donahue, 2011).

Current views of the meaning of retirement in the United States are heavily shaped by the policies of the Social Security Administration (see Gruber & Wise, 2002), an increased multiplicity of retirement paths (e.g., Beehr & Bennett, 2007), and the distinction between "objective" retirement (e.g., quitting career job, drawing Social Security benefits, ceasing to earn an income) and subjective retirement (an individual's sense or self-report of being retired; e.g., Maestas, 2010). The US Social Security Administration is currently structured such that full benefits are received when an individual retires at the ages of 65 to 67 (depending on year of birth), with additional credits if retirement is delayed further, until age 70. The earliest age at which most workers can receive (reduced) benefits is 62 years.

Alternative models of retirement such as "bridge jobs" (jobs in different industries or occupations from career jobs, taken between career jobs and retirement; Ruhm, 1990) and "partial retirement" have been discussed in the scholarly literature for decades (e.g., Ruhm, 1990). Recent scholarship has devoted considerable attention to the multiple forms that retirement can take (e.g., Beehr & Bennett, 2007), as well as the different timelines over which retirement may unfold (e.g., van Solinge & Henkens, 2007). Forms of retirement include re-entry (returning to one's full-time employment after initially retiring), job change, a shift to part-time employment (either for one's current job or a different job), a shift to self-employment, and "bridge jobs" (Ruhm, 1990).

Although these models of retirement are an interesting area of research in their own right, the present study focused on participants' first full retirement. Dannefer (1984) argues that, in addition to being an objective, measureable transition, retirement is also a subjective developmental and social transition that transforms individuals' identities, experiences, preferences, and meaning. Maestas (2010) discusses the benefits of first full subjective retirement as a measure, including evidence that subjectively retired individuals behave differently than non-subjectively retired individuals.

Only about 15% of workers born 1931–1941 returned to part-time or full-time paid work after fully retiring (Cahill, Giandrea, & Quinn, 2010), and these returns were often voluntary and expected prior to retirement (Maestas, 2010). Further, first full retirement represents a major transition whether or not workers later re-enter the workforce. Using participants' self-report of their first full retirement "encompasses many dimensions of work that are often difficulty to measure," such as a shift to self-employment or a decrease of effort on a continuously held job (Gustman & Steinmeier,

2000, p. 58). These statuses may be considered retirement by a worker but may not register as such by "objective" retirement measures such as hours worked per week. Thus, the present study used participants' reports of their first full retirement.

Outcomes of the Timing of Retirement

Timing of retirement has consequences for individuals. Although these outcomes are not the focus on the present investigation, they justify the present study's attention to predictors of the timing of retirement. The structure of Social Security benefits, outlined earlier, lead to an economic disadvantage to the individual retiring early, as well as causing a burden on the Social Security system by decreasing the number of workers contributing to it while increasing the number of retirees drawing benefits from it. A further potential financial disadvantage of earlier retirement to the individual, even if one delays claiming benefits, is that benefits are based on an individual's 35 years of highest earnings, and earnings in one's 50s and 60s are often at their peak (e.g., Skirbekk, 2008), again reducing contributions to the system overall. This disadvantage is especially salient for women, who tend to have shorter paid work histories and accumulate less individual retirement wealth than men (Coile, 2003).

Aside from systematic financial incentives and disincentives, several studies have examined cognitive, health, and psychological outcomes of timing of retirement. Bonsang, Adam, and Perelman (2012) recommend policies to encourage later retirement based on their finding that retirement decreases cognitive functioning, even controlling for pre-retirement cognitive abilities. Controlling for pre-retirement health, Calvo, Sarkisian, and Tamborini (2013) found that "early" retirement, but not "on time" or "late" retirement, dampened subjective physical and mental health.

One paper comparing the outcomes of retirement in six longitudinal datasets found that the effects of retirement on financial, health, social, and psychological outcomes (e.g., life satisfaction, happiness, and locus of control) varied as a function of timing of retirement (Palmore, Fillenbaum, & George, 1984). Early retirement was found to be associated with the following post-retirement outcomes: lower income, worse health, lower life satisfaction, lower happiness, and lower internal locus of control, controlling for pre-retirement health and other characteristics.

Together, these findings about outcomes of retirement timing suggest the importance of understanding factors that influence the timing of retirement, which were addressed in the present study. By identifying factors that predict early retirement, policies can be designed that promote worker well-being in multiple domains beyond retirement.

Known Predictors of the Timing of Retirement

Several individual differences variables have been linked to the timing of retirement. Individuals with better cognitive abilities are more likely to retire later (Parker, Carvalho, & Rohwedder, 2013). Poor health tends to lead to early retirement, whereas limited financial resources tend to delay retirement (see Barnes-Farrell, 2003). The present study addressed an understudied aspect of the social context, profiles of family caregiving responsibilities, that affect individuals' retirement timing.

Cohort and retirement timing. As reviewed earlier, life-span developmental theory (e.g., Baltes, 1979, 1983) predicts cohort differences in developmental phenomena that are affected by the sociohistorical context. Relatively little research examines the role of cohort in retirement timing, partially because of the time limitations of large

longitudinal studies. Greater variability and flexibility in the timing of retirement has been noted for later cohorts compared with earlier cohorts (Han & Moen, 1989; Smith & Moen, 1998). Since the middle of last century, both men and women's retirement ages have declined in the United States (e.g., Gendell & Siegel, 1992; Gendell, 2001), despite the age of eligibility for full Social Security benefits increasing.

Although I am not aware of any literature directly comparing the effect of family caregiving on timing of retirement for multiple cohorts, some general trends suggest that differences may exist. Greenhaus and Powell (2012) describe a historical trend in which both men and women's work decisions are increasingly influenced by family considerations, particularly as more women have entered the workforce in the past several decades. Raymo and Sweeney (2006) found that, for a single cohort of men and women born in 1939, higher reports of work-family conflict were associated with earlier retirement preferences. These trends suggest that work-family variables may be more influential on the timing of retirement for later cohorts than earlier cohorts.

The Baby Boomer cohorts are particularly of interest because this generation is still in the process of retiring, and its large size may have ramifications for older adult care infrastructure in the U.S. (e.g., Knickman & Snell, 2002). Much of the existing research on retirement has been based on the generation represented in the first cohort of the HRS study (the "HRS Cohort") born between 1931 and 1941 (Maestas, 2007). Therefore, a comparison between this cohort and a later cohort to assess the generalizability of the link between profiles of family caregiving and retirement timing could have implications for the degree to which previous retirement scholarship will apply to the coming large cohort of retirees. Unfortunately, too few Baby Boomers (born

1948-1965) have retired to include them in the present study. However, the immediately preceding cohort, the War Babies (born 1942-1947), is historically proximal to the Baby Boomers and therefore was compared with the HRS cohort.

Statement of the Problem

Retirement is an age-graded, normative life transition (Schaie, 1965; Baltes, 1982), the timing of which can have consequences for postretirement well-being (e.g., Calvo, Sarkisian, & Tamborini, 2013; Palmore, Fillenbaum, & George, 1984). Known predictors of the timing of retirement are multidimensional, including financial, cognitive, health, and psychosocial factors (e.g., Barnes-Farrell, 2003; Knoll, 2011; Parker, Carvalho, & Rohwedder, 2013). One psychosocial factor associated with retirement timing is providing care (including financial and time transfers) to family members, including aging parents and adult children (e.g., Pavalko & Artis, 1997). Because women are more likely to provide caregiving, examining the effect of caregiving on retirement timing may be especially important for understanding women's earlier retirement relative to men.

Some existing research has examined the role of individual types of caregiving on retirement timing (e.g., Meyer, 2012; Szinovacz, DeViney, & Davey, 2001). However, less is known about how profiles of different types of caregiving (which frequently co-occur; e.g., Grundy & Henretta, 2006) combine to affect retirement timing, as well as how the link between these profiles and retirement timing may differ by gender and birth cohort. The link between familial caregiving and retirement timing is known to be moderated by gender (e.g., Dentinger & Clarkberg, 2002; Statistics Canada, 1997). Life-span developmental theory suggests that cohort differences may also be of theoretical and

practical importance (e.g., Baltes, Cornelius, & Nesselroade, 1979) because historical events can differentially shape developmental transitions. Thus, the present study examined the effects of family care profiles, gender, and cohort, as well as the interactions between these group memberships, on retirement timing.

Research Questions

Research question 1: Are there meaningful profiles of pre-retirement caregiving?

This research question lacks a priori hypotheses due to the exploratory nature of cluster analysis.

Research question 2: Are profiles of family caregiving differentially associated with timing of retirement?

Hypothesis 1 was that caregiving profiles with higher levels of time transfers to aging parents and adult children would be associated with earlier retirement timing.

Hypothesis 2 was that caregiving profiles with higher levels of financial transfers to aging parents and adult children would be associated with later retirement timing.

Research question 3: Do gender and cohort moderate the link between profiles of family caregiving and timing of retirement?

Hypothesis 3 was that the association between caregiving profiles with higher levels of time transfers to aging parents and adult children and earlier retirement timing would be stronger for women than for men.

Hypothesis 4 was that the association between caregiving profiles with higher levels of financial transfers to aging parents and adult children and earlier retirement timing would be stronger for men than for women.

Hypothesis 5 was nondirectional, but it was expected that the associations between caregiving profiles and retirement timing would differ for the HRS and War Babies cohorts.

Method

Sample

The sample consisted of a subset of the participants in the Health and Retirement Study, a publicly available longitudinal study of 36,166 participants aged 50+, assessed biennially since 1992. The HRS is sponsored by the National Institute on Aging and is conducted by the Institute for Social Research at the University of Michigan, Ann Arbor. It was created and designed to combat disciplinary fragmentation in the study of retirement by including psychologists, economists, demographers, epidemiologists, and health researchers on its co-investigator team (Juster & Suzman, 1995). The HRS data is collected as a field survey, with most interviews taking place by telephone. Interviews took an average of 110 minutes to complete for the targeted participants; spouse interviews took an average of 75 minutes. Participants were paid $10 each ($30 for both halves of a couple) for the first wave in 1992. The response rate for the initial wave of data collection was 80% (Juster & Suzman, 1995).

African-American and Hispanic populations were oversampled, as were citizens of Florida. New cohorts of participants have been added at several points during the study. Ten waves of data have been released to date. The present study used the RAND version of the HRS dataset, which has been cleaned, imputed (when appropriate), and combined across the ten waves of data with consistent variable naming. Although the

RAND version is much easier to use for longitudinal analysis, all variables are not included (see Stoiko, 2014 for an overview).

Figure 1 details the sample sizes for included and excluded participants for each analysis. Cluster analysis was limited to participants who provided at least one of the intergenerational transfer measures (n = 4,638). ANCOVAs were limited to cluster-included participants who reported a retirement date, and thus for whom the timing of retirement was known (n = 3,970). Out of the 14,607 participants who provided a first full retirement but did not provide any of the four caregiving variables, 9,569 participants either reported zero values for these questions or skipped the questions; the RAND version of the HRS dataset does not differentiate between zero responses and nonresponses. A further 5,038 participants lacked the entire previous wave from which to draw pre-retirement measures. The study began in the first wave with some participants already retired, including 1,804 of the participants who reported a first full retirement but don't provide caregiving variables. Without an existing previous wave, it is impossible to use predictor variables (pre-retirement caregiving) from the previous wave. Finally, 3,234 participants did not provide an interview at the wave immediately prior to their first reported full retirement (besides W1 retirees). Most of these participants represented cohorts of participants entering the study later, already retired and thus lacking pre-retirement measurements of caregiving.

Six cohorts are currently present in the HRS: 1) AHEAD, born before 1924; 2) the Children of Depression, born 1924-1930; 3) HRS, born 1931-1941; 4) War Babies, born 1942-1947, (5) Early Baby Boomers, born 1948-1953, and (6) Mid Baby Boomers, born 1954-1959. The HRS sample was interviewed separately in 1992, 1994, and 1996.

The AHEAD sample was interviewed separately in 1993 and 1995. The two studies were merged and the Children of Depression and War Babies cohorts added in 1998. The Early Baby Boomers cohort was added in 2004. The Mid Baby Boomers cohort was added in 2010.

To address Hypotheses 1-4, data from the 3,970 participants who provided complete information about their retirement date and at least one of the four caregiving variables were analyzed (see Figure 1). For the cohort comparison in Hypothesis 5, the 2,417 eligible members of the HRS cohort and the 388 eligible members of the War Babies cohort were compared (see Figure 1).

Measures

Timing of retirement. Timing of retirement was operationalized as the age (year and month) at which a participant first reported being fully retired, with the participants' age of full eligibility for Social Security benefits (year and month) subtracted. This score provided a measure for how many years earlier or later than full benefits eligibility each participant retired fully for the first time. This method also standardized across cohorts, which had different ages of full benefits eligibility. As discussed above, first full retirement was used (not considering bridge jobs, re-entries, etc.) because it marks a salient psychosocial and financial transition (Dannefer, 1984; Maestas, 2010). Additionally, more data were available using this operationalization, because any living participant may still re-enter the workforce in the future, making his or her data unusable until after death if another operationalization were used.

The following variables ("clustering variables") were each taken from the HRS Wave immediately before each participant's first reported full retirement (as were the

covariates). Descriptive statistics for each of these variables, separately for the entire cluster sample and only participants who provided each type of care, are provided in Table 1.

Financial transfers to parents. Financial transfers to parents were reported as the dollar amount provided in the past two years. In the HRS, participants answered the question, "Not counting any shared housing or shared food, did you give financial help to your [(deceased) /parents/mother/father/mother (and/or her husband)/father (and/or his wife)] amounting to $500 or more [since previous wave Month Year]?" then received a follow-up question to clarify the amount. This question was phrased, "For: your [Mother (and/or her husband)/Mother/Father (and/or his wife)/Father/Parents] about how much money did that amount to altogether [Since previous wave Month Year]?" If participants asked for a definition of financial help, they were told, "By financial help we mean giving money, helping pay bills, or covering specific types of costs such as those for medical care or insurance, schooling, down payment for a home, rent, etc. The financial help can be considered support, a gift or a loan." Descriptive statistics for this variable are given in Table 1.

Financial transfers to adult children. Financial transfers to adult children were reported as the dollar amount provided in the past two years. For adult child financial transfers, in a section about financial support to children in the past two years, participants first answered the question, "To which child did you give the largest amount?" followed by "To which child did you give the next largest amount?" through all of a participant's children. Participants were then asked, "About how much did that

amount to for each child?" the values for which were summed into a single variable. Descriptive statistics for this variable are given in Table 1.

Parent time transfers. Time transfers to aging parents were operationalized as the number of hours spent helping the respondent's parent(s) with basic personal needs (e.g., dressing, eating) and errands (e.g., household chores, transportation) in the past two years. To assess personal needs care to parents, participants were first asked, "How about another kind of help: Did you spend any time (since [previous wave month], [previous wave year]/in the last two years) helping your (/(deceased) parents/(deceased) mother (and/or her husband)/mother/father (and/or his wife)/father) with basic personal activities like dressing, eating, and bathing?" If participants indicated that they had, they were asked, "for: your (/mother/father/mother's husband/father's wife), roughly how many hours (/Since [previous wave month], [previous wave year]/ In the last two years) did you yourself spend giving such assistance?"

To assess errand help for parents, participants were first asked, "Did you spend any time (since [previous wave month], [previous wave year]/in the last two years) helping your (/(deceased) /parents/(deceased) /mother (and/or her husband)/mother/father (and/or his wife)/father) with other things such as household chores, errands, transportation, etc.?" If participants indicated that they had, they were asked, "for: your (/mother (and/or her husband)/mother/father (and/or his wife)/father/parents) roughly how many hours (/since [previous wave month], [previous wave year]/since [previous wave year]/In the last two years) did you yourself spend giving such assistance?

For the present study, the number of hours reported for each of these sets of activities were summed into an overall parental time transfer variable. Descriptive statistics for this variable are given in Table 1.

Child time transfers. Due to limitations in the types of caregiving questions asked in the HRS, time transfers to adult children were operationalized as providing childcare to participants' grandchildren. In the HRS, this question was asked as, "Roughly how many hours altogether did you spend since [date of previous interview/in the last two years] taking care of grandchildren?" This question was not asked of participants who indicated that their grandchildren live in their houses. Descriptive statistics for this variable are given in Table 1.

Covariates. The following covariates were included in the analyses, as they are known to be associated with the timing of retirement: education, marital status, spouse's retirement status, household net worth, cognition, and health. As with the clustering variables, values for these variables were taken from the HRS Wave immediately before each participant's first reported full retirement.

Education. The HRS operationalizes education as number of years of education. The average number of years of education was 12.04 (SD = 3.46), or a high-school diploma.

Marital status. The HRS codes participants' marital statuses into the following categories: married, married spouse absent (e.g., institutionalized), partnered, separated, divorced, widowed, and never married. For the purposes of this study, these categories were dichotomized into married/partnered and all other categories (unpartnered). The married spouse absent category (1% of total participants) was coded as unpartnered due

to the caregiving focus of the current study. About three-quarters (75.5%) of participants reported being married/partnered.

Spouse's Retirement Status. The HRS codes participants' spouses' retirement status into the following categories: not retired, completely retired, partly retired, and question irrelevant. For the purposes of this study, these categories were dichotomized into spouse retired (spouse completely retired) and spouse still working (all other categories). About a quarter (25.8%) of participants reported having a retired spouse/partner.

Household net worth. The HRS measure of household net worth is derived in the following way. The nominal US dollar values of the following possessions are summed to calculate total household assets: vehicles, primary residences, other real estate, businesses, IRA/Keogh accounts, stocks, mutual funds, and investment trusts, checking, savings, or money market accounts, CDs, government savings bonds, and T-bills, bonds and bond funds, and all other savings. The values of all household debt, including mortgages, other home loans, and other debts, are then subtracted from total household assets to calculate household net worth. The average household net worth across the ten waves was $366,846.66 (SD = $963,483.85).

Cognition. Total word recall summary score was used as an indicator of cognitive capacity. Participants were asked to immediately recall as many items as possible from a list of 20 nouns that was read to them (e.g., lake, door, coffee). The average number of recalled words across the ten waves was 11.10 words (SD = 3.82). Although memory is only one facet of cognition, this is the only cognitive variable available and consistently

measured across all 10 waves of the HRS. Word list recall is also a particularly useful marker of cognitive decline (e.g., Bennett et al., 2002; Petersen et al., 1999).

Health. Self-reported health was used as an indicator of participant health. In the HRS, self-reported health was assessed with the question, "Would you say your health is excellent, very good, good, fair, or poor?" Responses were provided on the following five-point Likert-type scale: 1. Excellent, 2. Very Good, 3. Good, 4. Fair, 5. Poor. Responses were reverse-coded so that higher scores reflect better self-reported health. The average score for self-reported health was 3.27 (SD = 1.11), or good health. This item is widely used as an assessment of health (e.g., de Boer et al., 2004; Idler & Benyamini, 1997; Jylha, 2009).

Results

Descriptive/Preliminary Analyses

Descriptive statistics for covariates are given in Table 2, and correlations among study variables are given in Table 3. Significant (though small) correlations were as follows. A positive relation was evident among time and financial transfers to aging parents (r = .11), but the relation was negative among time and financial transfers to adult children (r = -.07). There was a positive relation among financial transfers to parents and financial transfers to children (r = .12). There was a negative relation between financial transfers to children and time transfers to parents (r = -.07). Finally, there was not a significant relation among either time transfers to adult children and time transfers to aging parents (r = -.04), or among financial transfers to aging parents and time transfers to adult children (r = -.03). Contrary to prior literature, there was a negative correlation between memory and retirement timing.

Table 4 provides descriptive statistics comparing the included sample (participants who reported a first full retirement and reported providing at least one of the four types of transfers being studied) with the excluded sample (participants who either didn't report a first full retirement in the ten available waves of data or didn't report providing at least one of the four types of transfers being studied). Direct comparisons on time-varying covariates (e.g., spousal retirement status, wealth) were only possible for participants who reported their first full retirement. Thus, Table 4 reports descriptive statistics for gender and education (non-time-varying covariates) for all categories of excluded participants. However, comparisons for all covariates were only reported for the excluded participant group who reported a first full retirement but did not report any of the caregiving variables (time or financial transfers) under study.

Compared with participants who reported a first full retirement but did not report at least one of the types of care examined in the present study, cluster-included participants were more likely to be female, more likely to be married/partnered, and more likely to have a retired spouse. They had higher educational attainment, more wealth, better cognition, and better health (see Table 4). These demographic differences could be the result of sampling for participants who provided transfers, most of whom provided financial transfers.

Missing data. Screening for missing data was completed before beginning ANCOVA analyses. The only prevalent ($n > 3$) instance of missing data was for the cognition covariate; 775 cases were missing out of 4833. To avoid biasing the sample (as listwise deletion could have done), missing data were imputed using the mean cognition score for each cluster.

Normality. The outcome variable, retirement timing, evidenced moderate skew (-.86, SE = .02) and kurtosis (2.61, SE = .04; Bulmer, 1979), though not at levels that are considered inappropriate for further analysis (e.g., Curran, West, & Finch, 1996). For Analysis of Variance (ANOVA), equal variances are considered more important than equal sample sizes (e.g., Brown & Forsythe, 1974). When groups have unequal variances, the chances of a Type I error or a Type II error are increased based on which group has the greater variance. Glass, Peckham, and Sanders (1972) explain that when groups with smaller sample sizes have the larger variance, the probability of Type I errors ("false positives") are increased; when the groups with larger sample sizes have the larger variance, the probability of Type II errors ("false negatives") are increased.

In the present study, a Levene's test revealed that the groups used in the ANCOVAs (caregiving profiles) had significantly different variance, $F(7,3958) = 9.65$, $p < .001$. Further investigation revealed that the largest group (n = 3436; variance = 70.82) had larger variance than two of the three smaller groups (n = 206; variance = 39.56; and n = 218; variance = 51.76) and similar variance to one of the smaller groups (n = 110; variance = 75.47). Thus, it seems likely that any effect of unequal ANCOVA groups would be failing to detect significant differences, rather than falsely discovering significant differences. These caveats should be kept in mind while interpreting results.

Cohort. There was an overall trend toward the War Babies cohort retiring earlier than HRS cohort. Due to the longitudinal nature of the study, a skew toward early retirement in the younger cohort is inevitable, but this finding is also consistent with other research suggesting that more recent cohorts have been retiring earlier since mid-century in the United States (e.g., Gendell, 2001). See Table 5 for the percentage of

participants in each cohort who have reported a first full retirement during the ten available waves of the HRS, as well as average retirement ages and timing for each cohort.

Cluster Analysis: Profiles of Time and Financial Transfers

For the purposes of the cluster analysis, financial transfers to aging parents and adult children were calculated as a proportion score: the transfer amount divided by the participants' household income at that timepoint. This made financial transfers more comparable across the wide range of participants' financial means. These adjustments aided the creation of a meaningful cluster solution (i.e., not dominated by financial transfers to adult children).

Cluster analysis is extremely sensitive to outliers (Kaufman & Rousseeuw, 2005). Thus, before computing the cluster solution, outliers were identified using the inter-quartile range method (Tukey, 1977). In this method, the interquartile range is defined as the difference between the lower quartile (the value that separates the lowest 25% of data) and the upper quartile (the value that separates the highest 25% of data). Any value below 1.5 times the value of the lower quartile or above 1.5 times the value of the upper quartile is defined as an outlier. Outliers were removed for each of the four caregiving variables. There were no negative outliers because negative dollar amounts or hours were not reportable. Positive outliers were any value above 1850 hours of childcare (164 participants), 1775 of personal and errand care to parents (97 participants), 40.8% of household income to children (475 participants), and 15.8% of household income to parents (52 participants).

This method, rather than others such as trimming and Windsorizing (e.g., Ruppert, 1988), did not identify a priori a certain percentage of the sample to trim or make less extreme, but rather used the range of the data itself to determine outliers. The number of outliers was large. However, given the nature of the variables, the removal of these outliers seems warranted. For example, the largest group of outliers were individuals who provided more than 40.8% of their household income to their children two years before their retirement. It seems unlikely that these sums of money were representative of regular financial transfers, and more likely represented one-time transfers such as paying for a wedding or assisting with the down payment of a house. Similarly, the volume of time transfers for many of the outliers suggested that the participants may be partial or full-time coresident grandparents, despite not identifying themselves as such.

The cluster solution was determined using two steps (Henry, Tolan, & Gorman-Smith, 2005). First, an agglomerative (hierarchical) approach was used to determine an appropriate number of clusters. The resultant dendogram suggested two–cluster and four-cluster solutions as appropriate, but two-cluster solutions are rarely meaningful, reflecting all high or all low levels of the clustering variable. An iterative (K-means) approach was then used to examine the "fit" of the four-cluster solution and save cluster membership as a variable. Specific cluster solutions were not hypothesized because this is an exploratory approach (Kaufman & Rousseeuw, 2005).

Figure 2 shows the four clusters, with values for each type of caregiving given in z-scores for each variable. The first profile ("Eldercare") was characterized by high levels of financial and time transfers to parents, but relatively low levels of financial and time

transfers to adult children. The second profile ("Heavy Childcare") was characterized by high levels of time transfers to adult children, but relatively low levels of other forms of transfers. The third profile ("Moderate Childcare") was characterized by moderate levels of time transfers to adult children, but relatively low levels of other types of transfers. Finally, the fourth profile ("Adult Child Financial Support") was characterized by high levels of financial transfers to adult children, but relatively low levels of other forms of transfers. Table 6 shows the average amount of each type of transfer for each profile.

To validate these clusters, a MANOVA was used to determine whether caregiving profiles significantly differed on the four clustering variables, indicating statistical distinction between the clusters (Aldenderfer & Blashfield, 1984). There was significant overall effect of cluster, $F(12, 12768.69) = 3160.40$, $p < .001$, $\eta^2_p = .55$. Each of the profiles differed from each of the other three profiles at $p < .001$. Posthoc analyses with Bonferonni adjustments for multiple comparisons revealed the following differences. The Eldercare profile significantly differed from all other clusters in terms of financial transfers to aging parents and time transfers to aging parents ($p < .001$ for each comparison). The Heavy Childcare and Moderate Childcare profiles both significantly differed from all other profiles ($p < .001$) in terms of time transfers to adult children. The Adult Child Financial Support profile significantly differed from all other profiles ($p < .001$) in terms of financial transfers to adult children. These MANOVA results support the statistical distinction between clusters and confirm their distinguishing features. Further validation of the Eldercare cluster is given in Appendix A.

Cluster Descriptions: Characteristics of Cluster Members

A series of descriptive analyses were completed to explicate profile membership. (Note that clusters are necessarily limited by the type of data available and are confined to people who already retired.) Men and women were not evenly distributed into profiles (see Table 7). Standardized residuals (measured on a z-score distribution such that any score more extreme than ± 1.96 indicates a significant difference) revealed that men were underrepresented, relative to their overall sample size, in the Eldercare (3.2% of men, SR = -3.6) and Heavy Childcare (1.1% of men, SR = -4.2) profiles, while women were overrepresented, relative to their overall sample size, in the Eldercare (6.2% of women, SR = 3.1) and Heavy Childcare (3.7% of women, SR = 3.7). Significant gender differences were not evident in Moderate Childcare and Adult Child Financial Support profiles.

Overall, a significant difference in caregiving profile membership was not evident among retirees from the HRS cohort compared to the War Babies cohort (see Table 7). However, the standardized residual indicated that the War Babies cohort was overrepresented in the Eldercare profile (9.3% of War Babies) relative to their overall sample size (SR = 2.2). To determine whether this finding was due to a gender difference in cohort representation, a further chi-square analysis was used to determine whether men and women were differentially represented in the samples from the HRS and War Babies cohorts. A significant difference was not evident ($\chi^2(1, N = 3187) = 3.77, p = .052$), nor did any standardized residuals exceed 1.3.

Logistic regression analyses were used to further describe each profile in terms of demographics (see Table 8 for regression results and Table 7 for descriptive statistics for each predictor by profile). Likelihood of profile membership was regressed separately for

each profile using the following predictors: gender, race (white/nonwhite), job tenure, number of children, number of living parents, education, and household wealth.

For the following logistic regression results, each of the predictive relation controls for other predictors in the model. Being female and having a greater number of living parents significantly increased the odds of a participant belonging to the Eldercare profile. Being female, having shorter job tenure, having fewer living parents, and having less education significantly increased the odds of a participant belonging to the Heavy Childcare profile. Having fewer living parents significantly increased the odds of a participant belonging to the Moderate Childcare profile. Finally, being male and having fewer living parents significantly increased the odds of a participant belonging to the Adult Child Financial Support profile.

Gender and Profile Differences in Retirement Timing

A two-way ANCOVA, analyzing the effects of gender and profile membership on retirement timing, controlling for education, marital status, spouse's retirement status, household net worth, cognition, and health, was used to test Hypotheses 1-4 (see Table 9 for statistics). These hypotheses stated that caregiving profiles with higher levels of time transfers to aging parents and adult children would be associated with earlier retirement timing (H1), especially for women (H3), while caregiving profiles with higher levels of financial transfers to aging parents and adult children were expected to be associated with later retirement timing (H2), especially for men (H4).

The main effects of profile and gender on timing of retirement were significant. The overall interaction between profile and gender was not significant (p = .12; see Table

10 for retirement timing by gender and profile). All of the covariates significantly predicted retirement timing, except years of education.

A comparison of main effects with a Bonferroni confidence interval adjustment revealed only one significant difference between caregiving profiles for retirement timing. Members of the Eldercare profile (M = -5.99, SD = 6.29) retired significantly earlier than members of the Adult Child Financial Support profile (M = -4.06, SD = 8.42). This finding partially supports Hypotheses 1 and 2, which stated that profiles with higher levels of financial transfers would be associated with later retirement timing, while profiles with higher levels of time transfers would be associated with earlier retirement timing. The profile with the greater financial transfer did retire later than one of the clusters with the greater time transfers. However, this finding is complicated by the fact that the Eldercare profile also provided relatively high financial transfers. The interaction between the effects of profile and gender on timing of retirement was not significant. This lack of interaction means a failure to support Hypotheses 3 and 4, which predicted that the relation between profiles with higher levels of time transfers and earlier retirement would be stronger for women, while the relation between profiles with higher levels of financial transfers and later retirement would be stronger for men.

Cohort, Gender, and Profile Differences in Retirement Timing

A three-way ANCOVA, analyzing the effects of cohort membership, gender, and profile membership on retirement timing, controlling for education, marital status, spouse's retirement status, household net worth, cognition, and health, was used to test Hypothesis 5. This hypothesis stated that the relations between caregiving profile and retirement timing would differ for the War Babies and HRS cohorts (see Table 11). In

this analysis, which reduced the sample size (from n = 4833 to n = 2921) by constricting the sample to two of five cohorts, all of the covariates again predicted retirement timing, except years of education. Cohort membership significantly predicted retirement timing, with the War Babies (M = -7.67, SD = 6.18) retiring significantly earlier than the HRS cohort (M = -4.40, SD = 7.05). The interaction between cohort and profile membership also significantly predicted retirement timing, with War Babies cohort members retiring especially earlier than HRS cohort members in the Heavy Childcare (M_{WB} = -12.16, SD_{WB} = 7.36; M_{HRS} = -5.18, SD_{HRS} = 7.95) and Moderate Childcare profiles (M_{WB} = -9.44, SD_{WB} = 7.46; M_{HRS} = -3.35, SD_{HRS} = 5.93; see Table 12). This interaction supports Hypothesis 5, which stated that cohort membership would moderate the link between caregiving profiles and retirement timing. Neither gender nor profile membership, nor the interactions between the three predictors, significantly predicted timing of retirement in this model.

Variable-Centered Comparison Approach

The results of a standard variable-centered approach are given in Appendix B for comparison to the present study's largely person-centered approach. Treating the caregiving variables as predictors in a regression equation suggested that only financial transfers to children predict retirement timing, and that the remaining types of caregiving and gender-by-caregiving interaction terms do not predict retirement timing. However, the results of the present study reveal a richer relation between caregiving and retirement timing by a) describing how these variables coexist in the data and b) examining naturally-occurring profiles as groups. For example, the linear regression results suggest that only financial transfers to children are important to explain everyone's retirement.

The results of the cluster analysis show that financial transfers to children is the most important form of transfers for the largest group of participants, but that other forms of transfer are important for other, smaller groups of participants within the study.

Discussion

Improving upon studies that only linked one type of family caregiving to retirement timing, the results of the present study reveal four profiles of pre-retirement caregiving. In these profiles, different types of caregiving interact and produce distinct relations with timing of retirement. This study is unique because it approaches the link between family caregiving and retirement timing using a person-centered, rather than variable-centered, approach. The present approach also disentangled the roles of caregiving type and gender in the prediction of retirement timing, as well as providing insight into potential cohort differences in the link between caregiving and retirement timing. Finally, the use of longitudinal data allowed for true predictive relations between pre-retirement measures of caregiving and participants' later retirement.

Demographic Characteristics of Caregiving Profiles

The number of living parents each participant had predicted membership in each caregiving profile. Only the Eldercare profile was associated with having more living parents, while having fewer living parents was associated with the Heavy Childcare, Moderate Childcare, and Adult Child Financial Support profiles. Several interpretations of the latter finding are possible. Not having parents who were still alive obviously could prevent belonging to a profile with significant eldercare responsibilities. However, it is also possible that the absence of living parents could make available time and money that is then transferred to their adult children. If retirement-aged adults had a greater number

of living parents, this might reduce their caregiving burden because their aging parents might provide childcare or financial support to their offspring and their children/grandchildren. In this case, a three-generational analysis might be insufficient. Analyses that factor in transfers between all generations, including transfers between adult children and aging parents, might better capture these exchanges.

Transfers between the generations above and below retirement-age adults, if members of the older generation are living, might interact with the forms of transfer seen here. Grundy and Henretta (2006) found evidence that having more children was associated with a reduced likelihood of providing caregiving to an aging parent for retirement-aged adults. The present study suggests a similar effect, with fewer aging parents associated with a greater likelihood of providing care for adult children. Both of these findings could be interpreted as evidence for a "hypothesis of competing demands" (Grundy & Henretta, 2006, p. 710) in which retirement-age adults must balance allocation of limited resources to the generations above and below them.

The relative demographic disadvantage evident in the Heavy Childcare profile in particular might represent part of a life span situation of cumulative disadvantage (and perhaps cumulative advantage for the other profiles; Crystal & Shea, 1990; O'Rand, 1996). The effects of earlier disadvantages, such as women being more likely to decrease employment to raise children or lower-income individuals being less likely to receive benefits such as health insurance, may effect the quality of retirement through the mechanism of pre-retirement caregiving and retirement timing.

Caregiving Profiles

The Eldercare and Heavy Childcare profiles had the largest time transfers, with members of the Eldercare profile reporting the greatest time transfers to aging parents (an average of 839.76 hours, or ~8 hours/week) and members of the Heavy Childcare profile reporting the greatest time transfers to adult children (an average of 1096.90 hours, or ~11 hours/week). These two profiles had the earliest retirement timing, consistent with prior literature that suggested that time transfers predicted earlier retirement (e.g., Harrington Meyer, 2012)

The Eldercare profile was the only profile characterized by high time and high financial transfers, both to aging parents. It was unclear from prior literature whether this combination should lead to early retirement, due to the time transfers (e.g., Humble, Keefe, & Auton, 2012), late retirement, due to the financial transfers (e.g., Szinovacz, DeViney, & Davey, 2001), or on-time retirement, due to the types of transfers exerting opposite forces. The results of the present study, in which Eldercare had the earliest retirement, suggest that the effect of time transfers may be greater than the effects of financial transfers, when both types of transfers are present. However, this conclusion is tentative, due to the lack of profiles with only one type of transfer to aging parents or combining high levels of both types of transfers to adult children. Boaz and colleagues (1999) noted a dearth of research addressing the interdependence between different types of resource transfers from retirement-aged adults to aging parents. The present study partially addresses this research gap. The results of the cluster analysis, as well as the correlations, revealed that time and financial transfers to aging parents may typically coexist (but not time and financial transfers to adult children).

There are several possible explanations for why time and financial transfers appear to coexist for aging parents. Unlike childcare, which is part of normative development and can be reasonably anticipated and planned for, eldercare is often precipitated by a medical crisis (reviewed in Smith, 2004). These medical crises may necessitate moving parents closer, incurring expenses, as well as providing time-intensive forms of care such as transportation and help dressing. In addition, elders that can't afford paid caregivers may also need other forms of financial help from family members: wealthier elders may not need either type of caregiving from their retirement-aged children.

The emergence of two profiles characterized by time transfers to children allows for interesting comparisons. These profiles resemble each other overall, but the members of the Heavy Childcare profile reported about twice as much childcare (about 46 hours/month on average) as members of the Moderate Childcare profile (about 18 hours/month on average) in the two years before they retired. Although the sample sizes for these profiles were small, limiting power to find significant differences, the extra childcare responsibilities reported by the Heavy Childcare profile predicted earlier retirement (-5.41 years) compared to the less intense, but still substantial, childcare responsibilities reported by members of the Moderate Childcare profile (-3.87 years). This amounts to an over-year-and-a-half difference, which, at peak earnings, could affect financial resources in retirement. The differences between these profiles suggest that there may be a threshold (somewhere between 4-5 and 10-11 hours per week) at which providing childcare becomes incompatible with individuals' worker roles. Alternatively, the Heavy Childcare group could be providing childcare due to economic necessity

(especially given demographic differences between the two profiles), while the Moderate Childcare group could be providing childcare for other reasons.

For grandchild care, it's possible that some families (possibly the members of the Moderate Childcare profile) substitute financial transfers for time transfers (e.g., subsidizing the cost of childcare). The substitution of financial transfers for childcare assistance has been noted in other studies (Ho, 2013). This substitution for grandchild care, but not eldercare, may be explained by differences between childcare and eldercare (reviewed below), such as the wider availability of high-quality childcare. However, this interpretation should be moderated by the fact that co-resident grandparents were excluded from the present study.

Couch, Daly, and Wolf (1999) note that time transfers tend to be negatively associated with a participants' wage rate, while financial transfers tend to be positively associated. That is, people who earn more tend to provide more financial transfers and fewer time transfers, while the reverse is true for people who earn less. The authors suggest that as the market value of an individual's time increases, they are more likely to give financial transfers than time transfers. This interpretation is supported by the relatively disadvantaged demographic features of the Heavy Childcare profile (participants lack money and thus give time), as well as the relatively advantaged demographic features of the Adult Child Financial Support profile (participants give money rather than time). However, in the Eldercare profile, participants give both types of transfers. This might be interpreted as evidence of a qualitative difference between childcare and eldercare, as discussed in the next section.

Grandchild care vs. eldercare. Both childcare and eldercare involve reproductive labor (usually unpaid tasks necessary for the maintenance of the workforce; Duffy, 2007), are generally devalued, and are performed mostly by women (Smith, 2004), but these types of caregiving also differ in important ways. Discussions about similarities and differences between childcare and eldercare are evident in popular media forms such as blogs (e.g., http://www.agingcare.com/Articles/Caring-for-Parents-Versus-Caring-for-Children-120215.htm; http://scienceblogs.com/thusspakezuska/2009/10/30/elder-care-vs-child-care-which/), but less empirical evidence exists. The present study contributes to this discussion by suggesting ways in which heavy eldercare, heavy childcare, and moderate childcare differentially affect retirement timing. However, even quantitative similarities between these categories may mask qualitative differences.

Some researchers contend that eldercare is more demanding, stressful, and emergency-driven than childcare (Koerin, Harrigan, & Secret, 2008). A respondent in Secret and Swanberg's (2008) qualitative study describes a major difference between child care and eldercare in terms of developmental trajectories, noting that children eventually outgrow the need for care, while the needs of aging parents tend to get more demanding.

Smith (2004) reviews evidence for the following differences between eldercare and childcare. Eldercare responsibilities increase over time, while childcare decreases. Eldercare ends with death rather than maturity. Eldercare's role reversal between parents and children can sometimes result in a filial crisis or emotional crisis in a way that doesn't occur for childcare. Negative effects of coresidence are evident when providing

eldercare (but not childcare) due to close proximity to death or deterioration. Finally, the eldercare role is less aspired to or anticipated, with often little preparation time for onset of eldercare, compared with childcare.

Some differences between transfers to aging parents and adult children may be explained by different cultural expectations for each type of relationship. Previous research has found that in the US, adults are more likely to assist their children than their parents because normative obligations toward children are more clearly defined than normative obligations toward parents (Wong, Capoferro, & Soldo, 1999). The present study supports this hypothesis. Only 237 participants were in the Heavy Eldercare profile. Minor transfers to parents were evident on a larger scale, but they were not as evident as transfers to children. This situation would likely be different in a society with greater norms of filial piety (e.g., Southeast Asia; Ikels, 2004).

"Sandwich Generation." It is notable that no profiles emerged in which at least one major transfer was made to both aging parents and adult children. This finding is consistent with recent scholarly discussions tempering the idea of the "sandwich generation." Originally described by social worker Dorothy A. Miller in 1981, the "sandwich generation" described the phenomenon of middle-aged adults providing major caregiving for their aging parents and dependent children simultaneously.

However, recent research suggests that the phenomenon as stated is relatively rare, not least because either unusually late childbearing in two generations or early-onset older adult disability is necessary for these life stages to coincide (Grundy & Henretta, 2006). Rather, the discussion has shifted to young adult children's continued partial dependence on their middle-aged parents, which may coincide with care for aging parents

and/or disrupt retirement planning (see review in Grundy & Henretta, 2006). A common form that this dependence takes is middle-aged parents continuing to pay for education or other expenses well into an adult child's 20s, if not 30s (Boaz, Hu, & Ye, 1999). This continued partial dependence is consistent with Arnett's conceptualization of a relatively new life stage, emerging adulthood, which often includes extended financial and emotional dependence on parents (e.g., Arnett, 2004).

This reconceptualization of the sandwich generation concept was supported by the present study, in which profiles were generally characterized by major investment in one type of care, with simultaneous, relatively minor investments in other types of care. Only the Eldercare profile was simultaneously engaged in two high-level care types, and they were directed toward the same generation. To Boaz and colleagues' insight about financial transfers to adult children, the present study would add grandchild care as a way as a form of dependence that young adults may still have on their retirement-aged parents.

As seen in Table 3, a positive relation is evident between time and financial transfers to parents, but there is a negative relation between time and financial transfers to children. These findings suggest that one type of transfer could substitute for the other for adult children, but not for aging parents. The profiles also support this interpretation, with the coexistence of relatively intensive time and financial transfers to aging parents in the Eldercare profile, but either intensive time or financial transfers to adult children evident in the other three profiles.

Retirement Timing

Members of the HRS included in the present study are retiring, on average, about four years before they are eligible for full benefits (~61 to 63 years old). This trend is in spite of efforts to encourage people retire later, largely to maintain the Social Security system but also to maximize retirees' well-being (e.g., Lumsdaine & Mitchell, 1999).

The finding that members of the War Babies cohort retired earlier than the HRS cohort is somewhat ersatz; due to the nature of cross-sequential longitudinal data collection (see Schaie, 1965), samples of more recent cohorts will be skewed toward earlier retirement simply because they haven't had as much time to retire "late." However, other evidence suggests a trend toward more recent cohorts retiring earlier (Gendell & Siegel, 1992; Gendell, 2001), so this effect is likely not completely explained by methodological limitations.

In the present study, on average, members of the cluster sample as well as the overall sample tended to retire years earlier than their full Social Security eligibility. This finding calls into question the use of Social Security retirement ages as a proxy for retirement age norms based on the "social clock" (Neugarten, 1969, 1979). Individuals' norms for retirement age, as well as their assessments about what constitutes "early," "on-time," or "late" retirement, may reflect social contextual variables such as geographic region, socioeconomic status, and peer retirement timing (e.g., Brown & Laschever, 2009). Thus, using Social Security retirement ages may be too broad of a measure to meaningfully capture psychological dimensions of retiring "early," "on time," or "late." For example, what is "early" when considered in light of Social Security ages could be considered "on time" compared with peers.

Overall, the variables in the ANCOVAs accounted for relatively little variance associated with timing of retirement (R^2 = .05 and .12; see Tables 9 and 11), despite including many variables and covariates thought to explain retirement timing. According to estimates of effect sizes, the largest contributions toward explaining retirement timing came from marital status and cognition. Although the variables included in the present ANCOVAs represent many of the most important predictors of retirement timing according to prior literature, other untested variables may be necessary to more fully account for individual and group differences in retirement timing. Relevant unmeasured variables could include depression (e.g., Karpansalo, 2005) employer incentives to retire (e.g., Hanks, 1990), the timing of individual life events (e.g., Orel, Ford, & Brock, 2004), the state of the economy at the time of retirement (e.g., Coile & Levine, 2011; McFall, 2011), trust in the Social Security system, and job satisfaction (e.g., Dendinger, Adams, & Jacobson, 2005). Additionally, the previously noted likelihood of Type II error may have contributed to lack of significance.

Despite being associated with retirement timing in other studies, participants' years of education did not predict retirement timing in the present study. Correlation tables revealed that this variable was highly related to wealth, health, and cognition, so these results suggest that outcomes associated with education (as well as the selection factors that lead to education in the first place) may impact retirement timing more than education itself. The other covariates performed as expected, significantly predicting retirement timing, with the exception of memory.

Contrary to the findings of previous studies, cognition (memory) was negatively correlated with retirement timing. This finding indicated that individuals with worse pre-

retirement memory retired later, while individuals with better pre-retirement memory retired earlier. One possible explanation for these disparate findings is that previous studies which found that better cognition was associated with later retirement (e.g., Bonsang, Adam, & Perelman, 2012; Parker, Carvalho, & Rohwedder, 2013) used regression approaches that controlled for the influence of related variables such as education and wealth. It's possible that examining the effect of cognitive ability on retirement in isolation suggests an inverse relation because it occludes the effects of related sociodemographic variables (i.e., an individual with poorer cognition also has a lower income, and thus must work longer to save for retirement).

These studies have also used a variety of operationalizations of cognitive ability (e.g., crystallized intelligence; Parker, Carvalho, & Rohwedder, 2013). These different measures may be differentially predictive of retirement timing, a hypothesis that has not been directly tested empirically.

Previous variable-centered analyses have suggested that, like other types of transfers to family members, financial transfers to aging parents are associated with working more hours (and thus retiring later), while time transfers to aging parents are associated with working fewer hours (and thus retiring earlier; Johnson & Lo Sasso, 2001). However, the present study's person-centered approach provides a different picture. The relatively strong positive correlation between financial and time transfers to parents suggests that these types of transfers may coexist, rather than exerting opposing forces. The only cluster that emerged which represented either kind of transfer to aging parents included both kinds, further strengthening the argument that these two types of transfers tend to coexist. Together, these findings suggest that eldercare often consists of

both time and financial transfers, and the combined effect of these types of transfers should be considered rather than assuming that adults provide either one type of care or the other.

However, the remaining clusters that emerged suggested that transfers to adult children may be more likely to consist of either time or financial transfers. Finding that higher wealth is associated with financial transfers to adult children and, to a much lesser extent, aging parents, but not time transfers to either group, is consistent with previous research that found that higher-income retirement-aged adults give more financial support to adult children, but not more time transfers such as childcare (de Vaus & Qu, 1998). The results of the present study suggest that these financial transfers to adult children may partially predict this group's relatively delayed retirement timing.

Caregiving and Gender

Although both caregiving profile and gender were statistically significant predictors of retirement timing, the effect size for caregiving profile was larger than the effect size for gender. This finding suggests that the caregiving behavior itself is more important in explaining retirement timing than the gender of the caregiver. Indeed, despite relatively unequal gender representation in the Eldercare and Heavy Childcare profiles, there was not a significant gender-by-profile interaction predicting retirement timing. This finding suggests that when men enact these caregiving roles, their retirement timing is like women's. The gender difference within clusters expected based on prior literature, with women retiring earlier than men, is only evident in the Adult Child Financial Support cluster, which involves the transfer of household wealth rather than personal time.

The finding that role is relatively more important than gender for retirement timing is consistent with gender theory on social roles. Social role theory examines psychological gender differences as the effects of differential social roles (see Eagly, Wood, & Diekman, 2000, for a review). This theory would predict that the known gender differences in retirement behavior could be explained by men and women's different roles (including caregiving roles), and that equalizing the roles themselves would decrease, if not eliminate, the gender differences. This interpretation partially solves Dentinger and Clarkberg's (2002) puzzle about the general conflation of gender and caregiving role when predicting retirement timing. If the behavior, not the gender, is more linked to outcomes, a change in the association of the behavior with specific genders (e.g., men performing proportional amounts of caregiving and similar types of caregiving), should equalize outcomes between men and women.

This finding also suggests that men who caregive may be "dragged down" in terms of timing their retirement earlier to resemble women (which was particularly evident with War Babies men providing childcare). Ideally, both genders would be "lifted up" with sufficient support and recognition of their unpaid labor.

An Eldercare Crisis

Many scholars have predicted or observed an "eldercare crisis" in the past two decades. This crisis is thought to be precipitated by demographic trends such as increased population of older adults, longer life expectancy, smaller family sizes, increased divorced rates, and women's increased paid employment (see Marks, 1996, for a review). There has been a concurrent shift from eldercare being performed primarily in the home by family members to personal care "outsourced" to paid nonfamily members (Bookman

& Kimbrel, 2011), whether in an elder's home or an institutional setting. However, even if an aging parent lives in an institutional setting, their adult children still often provide eldercare such as managing health care or coordinating outings. Because of this unrecognized work, family caregivers have been referred to as the "shadow workforce" in of the geriatric health care system (Bookman & Harrington, 2007).

Time transfers have monetary significance. Though this care work is widely considered to be underpaid and undervalued, researchers often note the vast monetary value of unpaid care work in the US. For example, the United Hospital Fund recently estimated that unpaid eldercare work is worth $257 billion a year in the United States (Levine, 2004). About 60% of family caregivers for elders are employed (National Alliance for Caregiving and AARP, 2009). In addition to retiring earlier, employed elder caregivers may decrease work hours, take leaves of absence, pass up job promotions, training or relocation, and use sick days or vacation time (MetLife, 1999). MetLife (1999) estimated that the average family eldercare provider loses $659,139 over his or her lifetime, an estimate that includes lost earnings, Social Security benefits, and pension benefits. Additional financial disadvantage comes from out-of-pocket expenses associated with caregiving, such as travel costs.

Previous research suggest that half (48%) of elder caregivers spend eight or fewer hours per week on eldercare, with 23% spending 9 to 20 hours and only 13% providing forty or more hours (National Alliance for Caregiving & AARP, 2009). In the present study, the average of 839.76 hours in the past two years equates to just over eight hours per week, which is similar to previous estimates. However, in the present study, it is unknown how the hours are distributed across the 104 weeks.

Three types of eldercare have been identified, which may differentially affect the caregiver's employment (Bookman & Kimbrel, 2011). Short-term care results from a crisis such as a need for surgery, and after the period of care, the elder returns to full functionality. Intermittent care, such as treatment for a chronic but not debilitating disease, requires regular but not constant transfers of time and/or money, such as aiding with regularly occurring medical treatments. Long-term care requires a consistent input of time or financial transfers, with the elder's condition often deteriorating. A member of the Eldercare profile in the present study who reports the average 839.76 hours of elder time transfers in the past two years (~8 hours per week) could have provided the time transfers in any of these forms, and the type of care may have affected the relation between eldercare and retirement timing. A finer-grained analysis might be able to further distinguish these relations.

Cohort and Retirement Timing

Cohort differences in retirement timing were especially pronounced for the Heavy Childcare and Moderate Childcare profiles. Members of the War Babies cohort in these profiles retired more than twice as early as members of the HRS cohort in these profiles, although conclusions are limited by the extremely small sample sizes for some subgroups (see Table 12). The greater impact of providing grandchild care on retirement timing for the more recent cohort may reflect broad changes in female labor force participation. With War Babies members' daughters or daughters-in-law more likely to be employed outside the home than the daughters(-in-law) of the HRS cohort, their childcare provision may be more necessary for family functioning and therefore more disruptive for the retirement-aged adults' employment.

Despite a lack of significant interaction between profile, gender, and cohort, the differences in retirement timing between these categories may have real-world significance (see Table 12). For example, although these comparisons are limited by small sample sizes and methodological confounds, the gender differences between individuals in the Eldercare profile appear to be more pronounced for members of the War Babies cohort (a gender difference of 3.13 years) than then HRS cohort (a gender difference of 0.42 years). Differences of a few or several years in retirement timing may have meaningful ramifications for individuals even if the differences do not register statistically (e.g., Carver, 1974, 1993).

Implications for Social Policy

Discussions about the solutions to childcare and eldercare crises are usually separate. Eldercare concerns can be overshadowed by child care concerns when designing family-friendly workplace policies (Smith, 2004). However, the distinct challenges associated with eldercare makes are worthy of attention. The present study's finding that the Eldercare profile had the earliest retirement timing suggests that existing support structures for elder caregivers are not as effective as they should be to prevent workplace consequences.

Debate is evident about the degree to which eldercare should be matter of public vs. private responsibility (see Koerin, Harrigan, & Secret, 2008, for a review). De Vaus and Qu (1998) noted that privatization of family caregiving, including eldercare, contributes to gender inequality (with women providing more care), generational inequality (with older generations providing more support than younger generations), socio-economic inequality (with high socioeconomic families more able to provide

baseline levels of care), and ethnic inequality (with certain groups who are forced to migrate for work disadvantaged due to loss of proximate relatives who could provide care). Other researchers have also discussed the reinforcement of social stratification that can result from privatized eldercare systems (e.g., Morel, 2007). Extensive arguments have been put forward about the quality of life benefits of public service provisions for child care and eldercare for care recipients, caregivers, and society (see Kim & Antonopoulos, 2011, for a review). Other scholars have argued for greater enforcement of existing filial responsibility laws, which require adult children to support their elderly parents but are rarely enforced (Ross, 2008), to reduce public costs.

Commonly suggested solutions to both childcare and eldercare problems are employer and government policies and support programs (Bookman & Kimbrel, 2011). Wallen (2002) identified three categories of workplace benefits especially suited for employees caring for elderly family members: (a) financial assistance, in the form of cash subsidies, for employees to purchase respite-care, in-home care, or eldercare day care services; (b) paid leave time, both extended and short-term; and (c) programs such as information, education, and referral services; counseling on legal, personal, or financial issues relevant to the elderly; caregiver support groups, and case management services to help employees assess their needs and consider their options. For example, some states have developed "cash and counseling" programs that support family members engaged in eldercare with psychosocial resources as well as payment for their care work (Bookman & Kimbrel, 2011).

Specific programs that have been identified as beneficial for coping with childcare include flextime and on-site childcare (e.g., Ezra & Deckman, 1996), as well as

alternative work schedules such as telecommuting, job sharing, and compressed workweeks (Facer & Wadsworth, 2008). Similar policies could be applied to eldercare. Researchers argue that reducing eldercare and childcare strain is good business; multiple studies have found that employees' perceptions of more institutional eldercare support benefited their work engagement, especially for workers who reported high levels of eldercare demands and role strain (Zacher & Schultz, 2015; Zacher & Winter, 2011; Zuba & Schneider, 2013).

Limitations and Future Directions

One major limitation of the present study was that it was limited, by definition, to individuals who have retired. People who haven't retired or can't retired were implicitly excluded, limiting the generalization of the results to individuals who have retired. The conceptualization of retirement timing in terms of Social Security benefits eligibility may not be meaningful for individuals who are not eligible for benefits, either because they did not work the required 40 quarters or because they do not report their earnings (e.g., "under the table" workers, domestic workers, undocumented migrant workers). Future research could clarify how these individuals conceptualize and time their retirements.

The operationalization of caregiving in the present study was limited by the data available in the RAND version of the HRS. Many types of caregiving were excluded due to unavailability of data. For instance, despite its known effect on some individuals' retirement timing (e.g., Dentinger & Clarkberg, 2002; Smith & Moen, 1998), the present study was not able to account for spousal caregiving. It was also not able to consider custodial grandparenting, despite an estimated 7% of children under 18 who live with a grandparent (US Census Bureau, 2010). Becoming a custodial grandparent is a major life

event with implications for work and family (e.g., Hayslip & Kaminski, 2005; Hayslip & Patrick, 2003; Marken & Howard, 2014). However, due to the availability of data, the present study focused on grandchild care for non-coresident grandchildren, or grandchildren whose primary physical custody belongs to someone other than the retirement-age adult. Further research about how caregiving responsibilities for these family members interact with the caregiving explored in the present study would be helpful for aiding families at risk for negative outcomes associated with off-time retirement.

In addition to other caregiving recipients, there are many other forms of caregiving that could be included in future studies. When Grundy and Henretta (2006) reported that four fifths of retirement-age adults provided some time of care to the generation above or below them, their British data included categories of care such as providing or cooking meals, completing household chores, aiding with paperwork, completing house repairs, etc. In future studies, the use of a finer grain of analysis, including more types of time transfers, would more accurately reflect the diversity of caregiving offered by retirement-aged adults. In addition to time and financial transfers, other types of caregiving such as emotional work (e.g., Rutman, 1996) could be explored. The inclusion of more types of caregiving would likely increase the sample size, which could moderate previously identified statistical issues with Type 2 errors due to unequal group sizes.

It's possible that the limited measurement of caregiving partially accounts for the large number of participants who reported a first full retirement date but none of the four caregiving measures. These participants were excluded from analyses, as they probably

represent a wide spectrum of caretaking behaviors not captured by the present study. It's impossible to know how many of these participants were complete non-caregivers for whatever reason (including, perhaps, limited resources to transfer) and how many simply provided other forms of caregiving than the four included in this study.

Measures of caregiving are often based upon participants' self-report. Biases in time use self-report can be particularly problematic (e.g., Samaniego et al., 2000), especially for retrospective reports (e.g., Collopy, 1996), as in the present study. It is unknown how this methodological limitation may have affected results. For example, some participants may have overestimated their time or financial transfers to appear socially desirable (e.g., Arnold & Feldman, 1981). Alternatively, some participants may have underestimated their transfers if they were cognitively unable to accurately estimate and add their transfers over a long time period quickly during the interview. Other methods such as experience sampling (e.g., Csikszentmihalyi & Larson, 1987) may partially ameliorate some of these limitations.

A further limitation of the present study was the use of individuals as the unit of analysis. Work and family decisions, including retirement timing, are often made as a couple or a family, leading some researchers to argue that research and policies regarding retirement should use the household, rather than the individual, as the unit of analysis (Loretto & Vickerstaff, 2013). Future examinations of the effects of pre-retirement caregiving on retirement timing could consider how the resources and needs of multiple family members are coordinated and compromised to make decisions about individuals' retirement timing.

One result of the naturalistic, descriptive nature of cluster analysis is unequal sample sizes. The analyses in the present study were limited by some profiles having particularly small sample sizes, limiting power to compare. It therefore may be more useful to interpret the results descriptively rather than relying on statistical tests (e.g., Carver, 1974, 1993). Perhaps differences in retirement timing that did not register as statistically significant had psychological or financial meaning to the retirees, a hypothesis that can't be tested by the current data. The majority of participants (87%) were represented by the most populous profile; however, the conceptual and statistical distinction between the four profiles was strong, suggesting that this unequal distribution accurately reflects the sample under study.

Another limit of cluster analysis is its exploratory nature. Unlike inferential or confirmatory statistical tests, it is standard practice to explore several different cluster solutions, interpreting the results based on insight into the variables in question. Because this analysis relies on calculating Euclidean distances between participants on many dimensions simultaneously, even changing the scaling or measurement units can lead to different cluster solutions (Kaufman & Rousseeuw, 2005). However, standardization of variables is not recommended for variables with absolute meaning, as in number of hours or dollars (Kaufman & Rousseeuw, 2005). Therefore, the profiles described in the present study, including their composition and relative representation in the population, may not generalize to other samples. They do, however, richly describe the present sample and could provide insight when addressing similar questions in other samples.

The present study captured only one work consequence of family caregiving, retirement timing. As discussed by MetLife (1999), employees may adjust their

employment in many ways in response to caregiving responsibilities, such as declining additional training/promotions or using vacation or sick days to meet caregiving demands. In the present study, I was not able to determine whether caregivers were using these strategies instead of, in addition to, or before retiring.

Although the cross-sequential design of the HRS, which includes concurrent longitudinal studies of many cohorts, was a strength, this research design also has limitations. Specifically, a choice must be made between utility and completeness. As noted above, the cohort analyses in the present study were limited by the age differences between the cohorts; the earlier cohort had more time to retire "late," skewing the later cohort toward early retirement reports. For a more complete analysis, the two cohorts under comparison would be deceased, or at least extremely far from retirement age, to correct for this problem. However, another problem would be created: the conclusions drawn from such a comparison may lack utility, as any insights would no longer be able to be applied (such as to policies or individual retirement decision-making), at least to the cohorts about which they were made. Therefore, in the present study, the choice was made to value utility over completeness, with appropriate caution applied to interpretation of the cohort results.

Although prior literature has linked retirement timing to post-retirement outcomes (e.g., Calvo, Sarkisian, & Tamborini, 2013; Palmore, Fillenbaum, & George, 1984; Quick & Moen, 1998; Szinovacz & Davey, 2004), this link still requires much exploration, particularly from a life-span developmental perspective that will examined interindividual and intergroup differences in these links. In particular, it could be fruitful for future research to focus on linking retirement timing to aspects of the multifaceted

concepts successful aging (Rowe & Kahn, 1997) and successful retirement (e.g., Goldberg, 2002; Lo & Brown, 1999).

Conclusion

In the present study, four patterns of pre-retirement family caregiving were identified using cluster analysis. One of the most time-intensive forms of caregiving, Eldercare, retired significantly earlier than the most financial-intensive form of caregiving, Adult Child Financial Support. Women retired earlier than men; however, a gender-by-caregiving profile interaction was not evident, suggesting that when men provide caregiving more typical of women (Eldercare, Heavy Childcare), their retirement timing resembles women's. The predictive relations between caregiving and retirement timing suggest that inadequate resources might be available for retirement-aged adults faced with time-intensive caregiving responsibilities, especially in light of negative financial ramifications for early retirement. The study of retirement as a developmental transition is complicated by its interaction with other family members' developmental trajectories and group memberships such as gender and cohort, as well as individual difference variables such as cognition, wealth, and health. However, the results of the present study provided insights into the effects of caregiving on retirement timing that may help identify at-risk families and improve their post-retirement well-being.

References

Albertini, M., Kohli, M., & Vogel, C. (2007). Intergenerational transfers of time and money in European families: Common patterns — different regimes? *Journal of European Social Policy*, *17*(4), 319-334. doi:10.1177/0958928707081068

Aldenderfer, M. S. & Blashfield, R. K. (1984). *Cluster analysis.* Beverly Hills, CA: Sage Press.

Anastas, J., Gibeau, J., & Larson, P. (1990). Working families and eldercare: A national perspective in an aging America. *Social Work, 35*, 409-411.

Antolín, P., & Scarpetta, S. (1998) Microeconometric analysis of the retirement decision. *OECD Economics Department Working Papers*, No. 204, OECD Publishing, Paris. doi: http://dx.doi.org/10.1787/572650601656

Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.

Arnold, H. J., & Feldman, D. C. (1981). Social desirability response bias in self-report choice situations. *Academy of Management Journal*, *24*(2), 377-385.

Atchley, R. C. (1979). Issues in retirement research. *The Gerontologist, 19*(1), 44-54.

Attias-Donfut, C., Ogg, J., & Wolff, F. (2005). European patterns of intergenerational financial and time transfers. *European Journal of Ageing*, *2*(3), 161-173. doi:10.1007/s10433-005-0008-7

Baltes, P. B. (1979). Life span developmental psychology: Some converging observations on history and theory. In P. B. Baltes, & O. G. Brim Jr. (Eds.), *Life span development and behavior* (Vol. 2, pp. 255–279). New York: Academic Press.

Baltes, P. B. (1983). Life span developmental psychology: Observations on history and

theory revisited. In R. M. Lerner (Ed.), *Developmental psychology: Historical and philosophical perspectives* (pp. 79–111). Hillsdale, NJ: Erlbaum.

Baltes, P. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology, 23*(5), 611-626.

Baltes, P. B., Cornelius, S. W., & Nesselroade, J. R. (1979). Cohort effects in developmental psychology. In J. R. Nesselroade & P. B. Baltes (Eds.), *Longitudinal research in the study of behavior and development* (pp. 61–87). New York: Academic Press.

Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (1998). Life span theory in developmental psychology. In W. Damon (Editor-in- Chief) & R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 1029–1143). New York: Wiley.

Baltes, P. B., Reese, H. W., & Lipsitt, L. P. (1980). Life span developmental psychology. *Annual Review of Psychology, 31*, 65–110.

Baltes, P. B., & Smith, J. (2004). Lifespan psychology: From developmental contextualism to developmental biocultural co-constructivism. *Research in Human Development*, *1*(3), 123-144. doi:10.1207/s15427617rhd0103_1

Barling, J., MacEwen, K. E., Kelloway, E. K., & Higginbottom, S. F. (1994). Predictors and outcomes of elder-care-based interrole conflict. *Psychology And Aging*, *9*(3), 391-397. doi:10.1037/0882-7974.9.3.391

Barnes-Farrell, J. L. (2003). Beyond health and wealth: Attitudinal and other influences on retirement decision-making. In G. Adams & T. Beehr (Eds.), *Retirement:*

Reasons, processes, and results (pp. 159-187). New York: Springer.

Beehr, T. A., & Bennett, M. M. (2007). Early retirement from a multi-level perspective. In K. S. Shultz & G. A. Adams (Eds.), *Aging and work in the 21st century* (pp. 288- 302). Mahwah, NJ: Lawrence Erlbaum, Publishers.

Bennett, D. A., Wilson, R. S., Schneider, J. A., Evans, D. A., Beckett, L. A., Aggarwal, N. T., Barnes, L.L., & Bach, J. (2002). Natural history of mild cognitive impairment in older persons. *Neurology*, *59*(2), 198-205.

Bonsang, E., Adam, S., & Perelman, S. (2012). Does retirement affect cognitive functioning? *Journal of Health Economics*, *31*(3), 490-501. doi:http://dx.doi.org.www.libproxy.wvu.edu/10.1016/j.jhealeco.2012.03.005

Brooks-Gunn, J., Petersen, A. C., & Eichorn, D. (1985). The study of maturational timing effects in adolescence. *Journal of Youth and Adolescence*, *14*(3), 149-161. doi:10.1007/BF02090316

Brown, K., & Laschever, R. (2009). *When they're sixty-four: Peer effects and the timing of retirement* (No. orrc09-17). National Bureau of Economic Research.

Brown, M, B. & Forsythe, A. B. (1974). Robust tests for equality of variances. *Journal of the American Statistical Association, 69*, 364–367.

Bulmer, M. (1979). *Principles of statistics*. New York: Dover Publications.

Cahill, K. E., Giandrea, M. D., & Quinn, J. F. (2010). The role of re-entry in the retirement process. U.S. Bureau of Labor Statistics Working Paper Series, WP-439. Retrieved from http://www.bls.gov/osmr/abstract/ec/ec10070.htm.

Calvo, E., Sarkisian, N., & Tamborini, C. R. (2013). Causal effects of retirement timing on subjective physical and emotional health. *The Journals of Gerontology: Series*

B: Psychological Sciences And Social Sciences, *68B*(1), 73-84. doi:10.1093/geronb/gbs097

Carver, R. P. (1978). The case against statistical significance testing. *Harvard Educational Review*, *48*(3), 378-399.

Carver, R. P. (1993). The case against statistical significance testing, revisited. *The Journal of Experimental Education*, *61*(4), 287-292.

Climo, J. J. (2000). Eldercare as 'woman's work' in poor countries. *Journal of Family Issues*, *21*(6), 692-713. doi:10.1177/019251300021006002

Coile, C. (2003). *Retirement incentives and couples' retirement decisions*. (Working Paper No. 2003-2004). Chestnut Hill, MA: Center for Retirement Research at Boston College.

Coile, C. C., & Levine, P. B. (2011). The market crash and mass layoffs: How the current economic crisis may affect retirement. NBER Working Paper 15395.

Collopy, F. (1996). Biases in retrospective self-reports of time use: an empirical study of computer users. *Management Science*, *42*(5), 758-767.

Crystal, S., & Shea, D. (1990). Cumulative advantage, cumulative disadvantage, and inequality among elderly people. *The Gerontologist*, *30*(4), 437-443.

Csikszentmihalyi, M., & Larson, R. (1987). Validity and reliability of the Experience-Sampling Method. *The Journal of Nervous and MentalDdisease*, *175*(9), 526-536.

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, 1(1), 16-29.

Czaja, S. J., & Rubert, M. P. (2002). Telecommunications technology as an aid to family caregivers of persons with dementia. *Psychosomatic Medicine*, *64*(3), 469-476.

Dannefer, D. (1984). Adult development and social theory: A paradigmatic reappraisal. *American Sociological Review, 49*, 100-116.

de Boer, A. G. E. M., Van Lanschot, J. J. B., Stalmeier, P. F. M., Van Sandick, J. W., Hulscher, J. B. F., De Haes, J. C. J. M., & Sprangers, M. A. G. (2004). Is a single-item visual analogue scale as valid, reliable and responsive as multi-item scales in measuring quality of life?. *Quality of Life Research*, *13*(2), 311-320.

de Vaus, D., & Qu, L. (1998). Intergenerational family transfers. *Family Matters, 50*, 27-30.

Dendinger, V. M., Adams, G. A., & Jacobson, J. D. (2005). Reasons for working and their relationship to retirement attitudes, job satisfaction and occupational self-efficacy of bridge employees. *The International Journal of Aging and Human Development*, *61*(1), 21-35.

Dentinger, E., & Clarkberg, M. (2002). Informal caregiving and retirement timing among men and women: Gender and caregiving relationships in late midlife. *Journal of Family Issues*, *23*(7), 857-879. doi:10.1177/019251302236598

Duffy, M. (2007). Doing the dirty work: Gender, race, and reproductive labor in historical perspective. *Gender & Society*, *21*(3), 313-336.

Durbin, N. E., Gross, E., & Borgatta, E. F. (1984). The decision to leave work: The case of retirement from an academic career. *Research on Aging*, *6*(4), 572-592. doi:10.1177/0164027584006004008

Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, *46*(4), 735-754. doi:10.1037/0022-3514.46.4.735

Eagly, A. H., Wood, W., & Diekman, A. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123-174). Mahwah, NJ: Erlbaum.

Elder, G. H. (1974). C*hildren of the Great Depression: Social change in life experience*. Chicago: University of Chicago Press.

Elder, G. H. (1985). *Life course dynamics*. Ithaca, NY: Cornell University Press.

Elder, G. H. (1998). The life course as developmental theory. *Child Development, 69*(1), 1–12.

Ezra, M., & Deckman, M. (1996). Balancing work and family responsibilities: Flextime and child care in the Federal Government. *Public Administration Review*, *56*(2), 174-179.

Facer, I. L., & Wadsworth, L. (2008). Alternative work schedules and work-family balance: A research note. *Review of Public Personnel Administration*, *28*(2), 166-177.

Fields, G., & Mitchell, O. (1984). *Retirement, pensions, and social security*. Cambridge, Mass.: MIT Press.

George, L. K., Fillenbaum, G. G., & Palmore, E. B. (1984). Sex differences in the antecedents and consequences of retirement. *Journal of Gerontology*, *39*(3), 364-371. doi:10.1093/geronj/39.3.364

Gendell, M. (2001). Retirement age declines again in 1990s. *Monthly Labor Review*, *124*(10), 12-21.

Gendell, M., & Siegel, J. S. (1992). Trends in retirement age by sex, 1950-2005. *Monthly Labor Review*, *115*(7), 22-29.

Goldberg, E. (2002). A healthy retirement. *AORN journal*, *76*(5), 873-874.

Greenhaus, J. H., & Powell, G. N. (2012). The family-relatedness of work decisions: A framework and agenda for theory and research. *Journal of Vocational Behavior*, *80*(2), 246-255. doi:10.1016/j.jvb.2011.12.007

Gruber, J., & Wise, D. A. (2002). Social security programs and retirement around the world: Micro estimation. NBER Working Papers 9407, National Bureau of Economic Research, Inc.

Grundy, E., & Henretta, J. C. (2006). Between elderly parents and adult children: A new look at the intergenerational care provided by the 'sandwich generation'. *Ageing & Society*, *26*(5), 707-722. doi:10.1017/S0144686X06004934

Gustman, A. L., & Steinmeier, T. L. (2000). Retirement outcomes in the health and retirement study. *Social Security Bulletin*, *63*(4), 57-71.

Han, S., & Moen, P. (1999). Clocking out: Temporal patterning of retirement. *American Journal of Sociology*, *105*(1), 191-236.

Hanks, R. S. (1990). The impact of early retirement incentives on retirees and their families. *Journal of Family Issues*, *11*(4), 424-437.

Harrington Meyer, M. (2012). US grandmothers juggling work and grandchildren. In V. Timonen & S. Arber (Eds.), *Contemporary grandparenting: Changing family relationships in a global context* (pp. 1029–1143). Bristol, UK: Policy Press.

Hayslip, B. J., & Kaminski, P. L. (2005). Grandparents raising their grandchildren: A review of the literature and suggestions for practice. *The Gerontologist*, *45*(2), 262-269. doi:10.1093/geront/45.2.262

Hayslip, B. J., & Patrick, J. H. (2003). *Working with custodial grandparents*. New York, NY, US: Springer Publishing Co.

Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociostructural constraints as adaptive challenges*. New York, NY, US: Cambridge University Press.

Henry, D. B., Tolan, P. H., & Gorman-Smith, D. (2005). Cluster analysis in family psychology research. *Journal of Family Psychology*, *19*(1), 121-132. doi:10.1037/0893-3200.19.1.121

Henz, U. (2009). Couples' provision of informal care for parents and parents-in-law: Far from sharing equally? *Ageing & Society, 29*, 369-395.

Hochschild, A., & Machung, A. (1989). *The second shift: Working parents and the revolution at home*. New York, N.Y.: Viking.

Horowitz, A. (1985). Sons and daughters as caregivers to older parents: Differences in role performance and consequences. *The Gerontologist*, *25*(6), 612-617. doi:10.1093/geront/25.6.612

Humble, Á. M., Keefe, J. M., & Auton, G. M. (2012). Caregivers' retirement congruency: A case for caregiver support. *The International Journal of Aging & Human Development*, *74*(2), 113-142. doi:10.2190/AG.74.2.b

Hurd, M. D. (1990). The joint retirement decision of husbands and wives. In D. A. Wise (Eds.), *Issues in the economics of aging* (pp. 231-258). Chicago: University of Chicgo Press.

Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behavior, 38*(1), 21-37.

Ikels, C. (2004). *Filial Piety: Practice and Discourse in Contemporary East Asia*. Stanford, CA: Stanford UP.

Jylhä, M. (2009). What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science & Medicine*, *69*(3), 307-316.

Johnson, R. W., & Lo Sasso, A. T. (2001). Balancing retirement security with the needs of frail parents: Caregiving, financial transfers, and work by women at midlife. *North American Actuarial Journal*, *5*(1), 104-108.

Johnson, R. W., & Lo Sasso, A. T. (2006). Impact of elder care on women's labor supply. *Inquiry*, *43*(3), 195-210.

Karpansalo, M., Kauhanen, J., Lakka, T. A., Manninen, P., Kaplan, G. A., & Salonen, J. T. (2005). Depression and early retirement: prospective population based study in middle aged men. *Journal of Epidemiology and Community Health*, *59*(1), 70-74.

Kaufman, L., & Rousseeuw, P. (2005). *Finding groups in data: An introduction to cluster analysis*. Hoboken, N.J.: Wiley.

Kilty, K.M., & Behling, J.H. (1985). Predicting the retirement intentions and attitudes of professional workers. *Journal of Gerontology, 40*, 219-227.

Knickman, J. R., & Snell, E. K. (2002). The 2030 problem: Caring for aging baby boomers. *Health Services Research, 37*, 849–884. doi: 10.1034/j.1600-0560.2002.56.x

Knoll, M. Z. (2011). Behavioral and psychological aspects of the retirement decision. *Social Security Bulletin*, *71*(4), 15-32.

Larkin, E. (1999). The intergenerational response to childcare and after-school care. *Generations*, *22*(4), 33.

Lo, R., & Brown, R. (1999). Stress and adaptation: Preparation for successful retirement. *Australian and New Zealand Journal of Mental Health Nursing*, *8*(1), 30-38.

Loretto, W., & Vickerstaff, S. (2013). The domestic and gendered context for retirement. *Human Relations*, *66*(1), 65-86.

Lumsdaine, R. L. & Mitchell, O. S. (1999). New developments in the economic analysis of retirement. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (Vol. 3c) (pp. 3261-3307). Amsterdam: North Holland Publishing Company.

Maestas, N. (2007). Cohort differences in retirement expectations and realizations. In B. Madrian, O. S. Mitchell, B. J. Soldo (Eds.), *Redefining retirement: How will Boomers fare?* (pp. 13-35). Oxford and New York: Oxford University Press.

Maestas, N. (2010). Back to work: Expectations and realizations of work after retirement. *Journal of Human Resources*, *45*(3), 718-748.

Marken, D. M., & Howard, J. B. (2014). Grandparents raising grandchildren: The influence of a late-life transition on occupational engagement. *Physical and Occupational Therapy in Geriatrics*, *32*(4), 381-396.

Marks, N. F. (1998). Does it hurt to care? Caregiving, work-family conflict, and midlife well-being. *Journal of Marriage & Family*, *60*(4), 951-966.

McDonald, L. (1996). *Transitions into retirement: A time for retirement, final report*. Human Resources Development Canada, National Welfare Grants Program.

McDonald, L., & Donahue, P. (2011). Retirement lost? *Canadian Journal on Aging, 30*(3): 401-422.

McFall, B. H. (2011). Crash and wait? The impact of the great recession on retirement planning of older Americans. *The American Economic Review*, *101*(3), 40-44.

Mermin, G. T., Johnson, R. W., & Murphy, D. P. (2007). Why do boomers plan to work longer? *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, *62B*(5), S286-S294.

Miller, D. A. (1981). The 'sandwich' generation: adult children of the aging. *Social Work*, *26*(5), 419-423.

Miller, M. J. (1986). Elderly persons as intergenerational child care providers. *Journal of Employment Counseling*, *23*(4), 156-162.

Moen, P. (1996). A life course perspective on retirement, gender, and well-being. *Journal of Occupational Health Psychology*, *1*(2), 131-144. doi:10.1037/1076-8998.1.2.131

Moen, P. & Flood, S. M. (2013). Limited engagements? Women's and men's work/volunteer time in the encore life course stage. *Social Problems 60*(2), 1-28.

Moen, P., & Wethington, E. (1999). Midlife development in a life course context. In S. L. Willis, J. D. Reid, S. L. Willis, J. D. Reid (Eds.) , *Life in the middle:*

Psychological and social development in middle age (pp. 3-23). San Diego, CA, US: Academic Press.

Neal, M. B., Ingersoll-Dayton, B., & Starrels, M. E. (1997). Gender and relationship differences in caregiving patterns and consequences among employed caregivers. *The Gerontologist, 37*, 804–816.

Neugarten, B. L. (1969). Continuities and discontinuities of psychological issues into adult life. *Human Development, 12*, 121–130.

Neugarten, B. L. (1979). Time, age, and the life cycle. *The American Journal of Psychiatry, 136*, 887-894.

O'Rand, A. M. (1996). The precious and the precocious: Understanding cumulative disadvantage and cumulative advantage over the life course. *The Gerontologist*, *36*(2), 230-238.

Orel, N. A., Ford, R. A., & Brock, C. (2004). Women's financial planning for retirement: The impact of disruptive life events. *Journal of Women & Aging*, *16*(3-4), 39-53.

Palmore, E. B., Fillenbaum, G. G., & George, L. K. (1984). Consequences of retirement. *Journal of Gerontology, 39*, 109-116 .

Parker, A. M., Carvalho, L. S., & Rohwedder, S. (2013). Cognitive ability, expectations, and beliefs about the future: Psychological influences on retirement decisions. Ann Arbor MI: University of Michigan Retirement Research Center (MRRC) Working Paper, WP 2013-298. Retrieved from http://www.mrrc.isr.umich.edu/publications/papers/pdf/wp298.pdf

Parnes, H. S., & Sommers, D. G. (1994). Shunning retirement: Work experiences of men in their seventies and early eighties. *Journal of Gerontology: Social Sciences, 49,* S117-S124.

Pavalko, E. K., & Artis, J. E. (1997). Women's caregiving and paid work: Causal relationships in late midlife. *The Journals of Gerontology: Series B: Psychological Sciences And Social Sciences*, *52B*(4), S170-S179. doi:10.1093/geronb/52B.4.S170

Petersen, R. C., Smith, G. E., Waring, S. C., Ivnik, R. J., Tangalos, E. G., & Kokmen, E. (1999). Mild cognitive impairment: clinical characterization and outcome. *Archives of neurology*, *56*(3), 303-308.

Pruchno, R. (1999). Raising grandchildren: The experiences of Black and White grandmothers. *The Gerontologist*, *39*(2), 209-221. doi:10.1093/geront/39.2.209

Purcell, P. J. (2010). Older workers: Employment and retirement trends. *Journal of Pension Planning & Compliance*, *36*(2), 70-88.

Quick, H. E., & Moen, P. (1998). Gender, employment and retirement quality: A life course approach to the differential experiences of men and women. *Journal of Occupational Health Psychology*, *3*(1), 44-64. doi:10.1037/1076-8998.3.1.44

Raphael, K. (1987). Recall bias: a proposal for assessment and control. *International Journal of Epidemiology*, *16*(2), 167-170.

Raymo, J. M., & Sweeney, M. M. (2006). Work-family conflict and retirement preferences. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, *61B*(3), S161-S169. doi:10.1093/geronb/61.3.S161

Richardson, V., & Kilty, K. (1992). Retirement intentions among black professionals: Implications for practice with older black adults. *The Gerontologist, 32*, 7-16.

Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, *37*(4), 433-440.

Ruhm, C. (1990). Bridge jobs and partial retirement. *Journal of Labor Economics, 8*(4), 482-501.

Ruppert, D. (1988). Trimming and Winsorization. *Wiley StatsRef: Statistics Reference Online*.

Rutman, D. (1996). Child care as women's work: Workers' experiences of powerfulness and powerlessness. *Gender & Society*, *10*(5), 629-649. doi:10.1177/089124396010005008

Rutter, M. (1989). Pathways from childhood to adult life. *Child Psychology & Psychiatry & Allied Disciplines*, *30*(1), 23-51. doi:10.1111/j.1469-7610.1989.tb00768.x

Rutter, M. (1996). Transitions and turning points in developmental psychopathology: As applied to the age span between childhood and mid-adulthood. *International Journal of Behavioral Development*, *19*(3), 603-626. doi:10.1080/016502596385712

Samaniego, F., Nordhaus, W., DaVanzo, J., Bradburn, N., Altonji, J., & Ver Ploeg, M. (Eds.). (2000). *Time-Use Measurement and Research: Report of a Workshop*. Chicago: National Academies Press.

Sass, S., Sun, W., & Webb, A. (2007). Why do married men claim Social Security benefits so early? Ignorance, caddishness, or something else. Working Paper 2007-17. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Schaie, K. W. (1965). A general model for the study of developmental problems. *Psychological Bulletin, 64,* 92-107.

Secret, M., & Swanberg, J. (2008). Work-family experiences and the insights of municipal government employees: a case study. *Public Personnel Management*, *37*(2), 199-221.

Skirbekk, V. (2008). Age and productivity capacity: Descriptions, causes and policy options. *Ageing Horizons, 8*, 4-12.

Smith, P. R. (2004). Elder care, gender, and work: The work-family issue of the 21st century. *Berkeley Journal of Employment & Labor Law*, *25*(2), 351-399.

Smith, D. B., & Moen, P. (1998). Spousal influence on retirement: His, her, and their perceptions. *Journal of Marriage & Family*, *60*(3), 734-744.

Statistics Canada (1997). *A portrait of seniors in Canada*. 2nd Edition. Ottawa: Ministry of Industry.

Stewart, A. J., & Healy, J. M. (1989). Linking individual development and social changes. *American Psychologist*, *44*(1), 30-42. doi:10.1037/0003-066X.44.1.30

Stoiko, R. R. (2014). The Health and Retirement Study. *The International Journal of Aging and Human Development, 79*(4), 339-341.

Stone, R., Cafferata, G. L., & Sangl, J. (1987). Caregivers of the frail elderly: A national profile. *The Gerontologist, 27*, 616-626.

Stone, R. I., & Short, P.F. (1990). The competing demands of employment and informal caregiving to disabled elders. *Medical Care, 28*, 513-526.

Szinovacz, M. E., & Davey, A. (2004). Retirement transitions and spouse disability: Effects on depressive symptoms. *The Journals of Gerontology. Series B, Psychological Sciences And Social Sciences*, *59*(6), S333-S342.

Szinovacz, M. E., & Davey, A. (2005). Predictors of perceptions of involuntary retirement. *The Gerontologist*, *45*(1), 36-47.

Szinovacz, M., & DeViney, S. (1999). The retiree identity: gender and race differences. *The Journals of Gerontology. Series B, Psychological Sciences And Social Sciences*, *54*(4), S207-S218.

Szinovacz, M. E., DeViney, S., & Davey, A. (2001). Influences of family obligations and relationships on retirement: Variations by gender, race, and marital status. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, *56B*(1), S20-S27. doi:10.1093/geronb/56.1.S20

Talaga, J. A., & Beehr, T. A. (1995). Are there gender differences in predicting retirement decisions? *Journal of Applied Psychology*, *80*(1), 16-28. doi:10.1037/0021-9010.80.1.1

Tukey, J. W. (1977). Exploratory data analysis. Reading, MA: Addison-Wesley.

U.S. Census Bureau. (2010). American Community Survey, 1-Year Estimates: Table S1001, accessed at http://factfinder2.census.gov.

van Solinge, H., & Henkens, K. (2007). Involuntary retirement: The role of restrictive circumstances, timing, and social embeddedness. *Journal of Gerontology, 62B*(5), 295-303. DOI: 10.1093/geronb/62.5.S295.

Walker, A. J., Pratt, C. C., & Eddy, L. (1995). Informal caregiving to aging family members: A critical review. *Family Relations: An Interdisciplinary Journal of Applied Family Studies*, *44*(4), 402-411. doi:10.2307/584996

Wolfson, C, Handfield-Hones, R., Glass, K. C, McClaran, J., & Keyserlingk, E. (1993). Adult children's perceptions of their responsibility to provide care for dependent elderly parents. *The Gerontologist, 33*, 315-323.

Wong, R., Capoferro, C. & Soldo, B. J. (1999). Financial assistance from middle-aged couples to parents and children: racial-ethnic differences. *Journal of Gerontology: Psychological and Social Sciences, 54*, S145–53.

Zacher, H., & Schulz, H. (2015). Employees' eldercare demands, strain, and perceived support. *Journal of Managerial Psychology*, *30*(2), 183-198. doi:10.1108/JMP-06-2013-0157

Zacher, H., & Winter, G. (2011). Eldercare demands, strain, and work engagement: The moderating role of perceived organizational support. *Journal of Vocational Behavior*, *79*(3), 667-680.

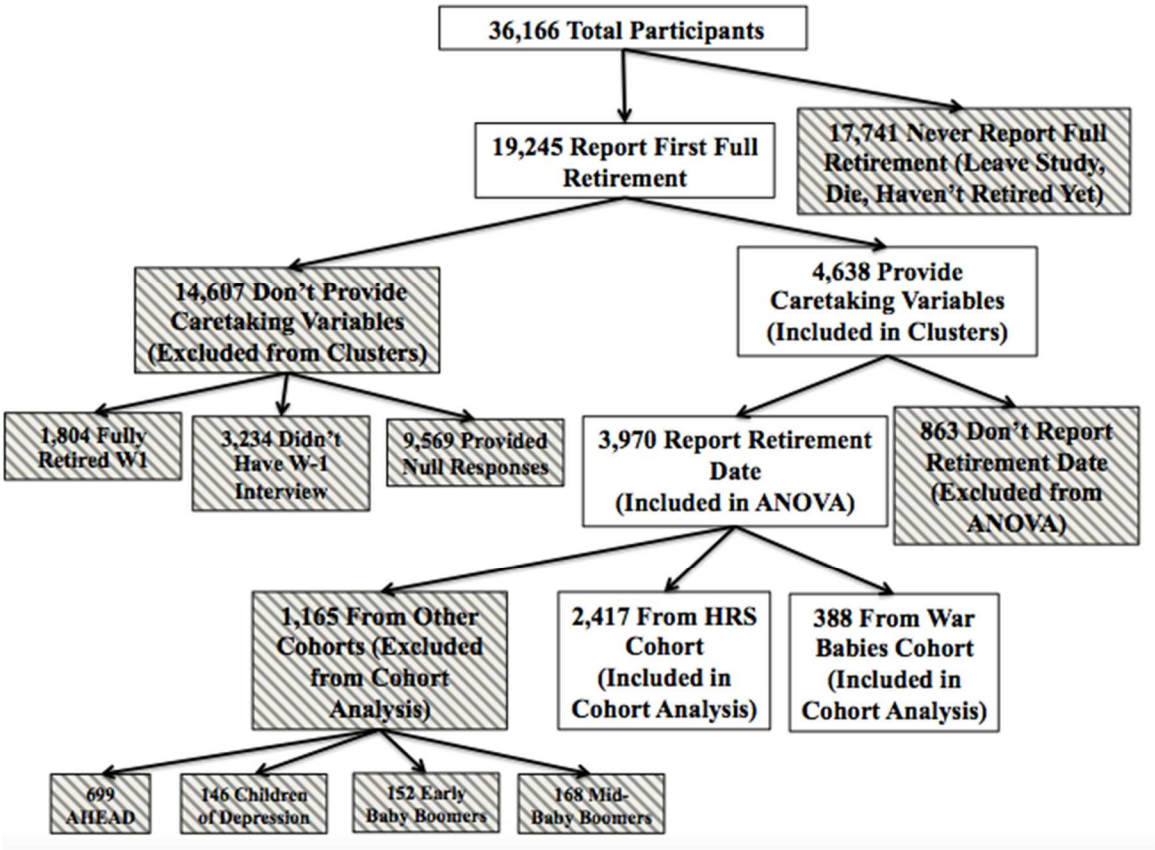
Zimmerman, L., Mitchell, B., Wister, A., & Gutman, G. (2000). Unanticipated consequences: A comparison of expected and actual retirement timing among older women. *Journal of Women & Aging*, *12*(1-2), 109-128. doi:10.1300/J074v12n01_08

Zuba, M., & Schneider, U. (2013). What helps working informal caregivers? The role of workplace characteristics in balancing work and adult-care responsibilities. *Journal of Family & Economic Issues*, *34*(4), 460-469. doi:10.1007/s10834-012-9347-7

Figures

Figure 1

Flowchart of Participant Inclusion and Exclusion for Each Analysis



Note. White boxes represented participants retained at each stage of the data analysis, while shaded boxes represent participants excluded. Parenthetical statements describe the analyses for which each subsample was included.

Figure 2

Caregiving Variables by Cluster

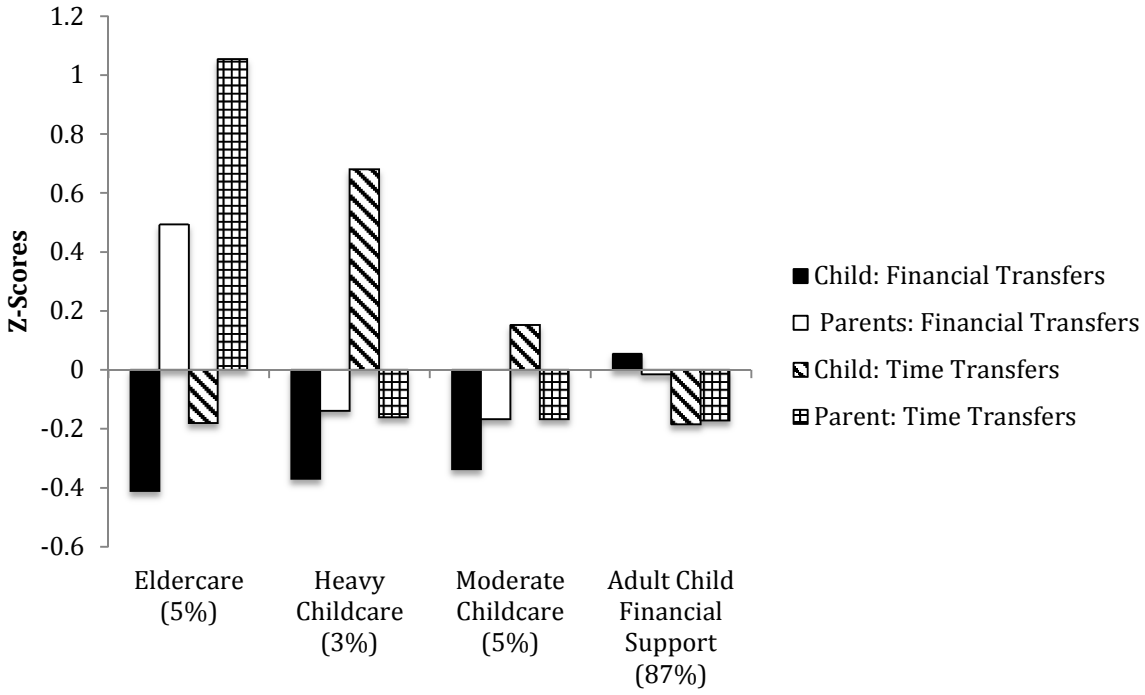
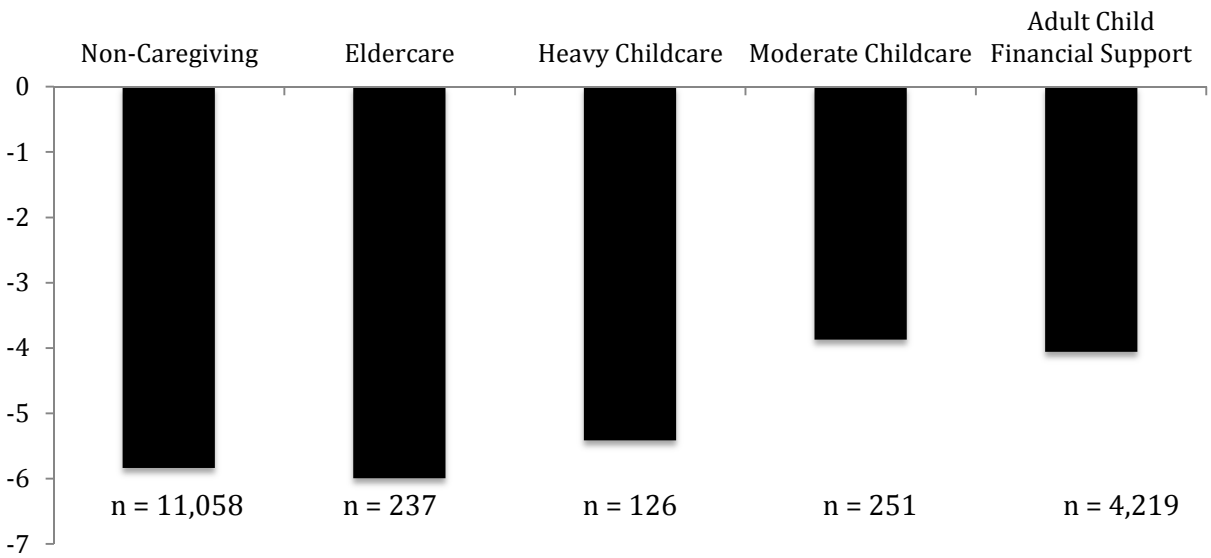


Figure 3

Average Retirement Timing by Caregiving Profile



Tables

Table 1

Descriptive Statistics for Cluster Analysis Variables

	Total Cluster Sample (N = 4,638)		**Cluster Sample Providing Variable**		
	M (SD)	*Range*	*n*	*M (SD)*	*Range*
Financial Transfers to Parents (US dollars)	$108 ($506)	$0-$5,000	343	$1,410 ($1,210)	$7-$5,000
Financial Transfers to Adult Children (US dollars)	$2,662 ($3,584)	$0-$19,200	3,487	$3,533 ($3,742)	$5-$19,200
Personal/Errand Care to Parents (hours)	61.40 (203.05)	0-1700	719	396.06 (365.44)	1-1,700
Grandchild Care for Adult Children (hours)	68.03 (206.80)	0-1820	996	316.77 (347.03)	1-1,820

Note. The second and third columns provide descriptive statistics for each of the clustering variables for the entire cluster sample, including the majority of participants who reported a score of zero for each variable. The final three columns provide descriptive statistics for these variables for only the participants who reported a value greater than zero for each variable.

Table 2

Descriptive Statistics for Study Covariates, Overall and by Cluster

		Caregiving Profiles			
	Overall (N = 4,833)	Eldercare (n = 237)	Heavy Childcare (n = 126)	Moderate Childcare (n = 251)	Adult Child Financial Support (n = 4,219)
			M (SD)		
1. Age	61.12 (8.13)	59.50 (6.10)	59.92 (8.59)	61.49 (7.02)	61.24 (8.27)
2. Gender	56.4% female	71.7% female	81 % female	59% female	54.7% female
3. Education	12.71 (2.95)	13 (2.64)	11.80 (3.42)	12.75 (2.88)	12.72 (2.95)
4. Marital Status	75.5% partnered	69.6% partnered	65.9% partnered	78.1% partnered	75.9% partnered
5. Spouse Retirement Status	25.8% retired spouse	23.6% retired spouse	34.9% retired spouse	26.7% retired spouse	25.6% retired spouse
6. Wealth	$396,072 ($822, 393)	$344,081 ($539,436)	$299,831 ($488,803)	$435,690 ($715,648)	$399,510 ($848,841)
7. Cognition	11.10 (4.17)	11.45 (3.32)	11 (3.10)	10.72 (3.24)	11.11 (3.89)
8. Health	3.27 (1.11)	3.19 (1.10)	3.15 (1.05)	3.33 (1.05)	3.28 (1.11)

Note. Education was measured in years. Wealth was measured in US dollars. Cognition was the number of words recalled out of a list of 20. Health was self-reported, with 1 meaning worst health and 5 meaning best health.

Table 3

Correlations Between Study Variables for Cluster-Included Participants (n = 4833)

	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1. Retirement Timing	-.05$_b$	.03	-.09$_c$	-.01	-.16$_c$	.01	-.09$_c$	.04$_a$	.05$_b$	-.15$_c$	.07$_c$
2. Financial Transfers-Parents	-	.12$_c$	.11$_c$	-.03$_a$	-.01	.04$_b$	.00	-.01	.07$_c$	.02	.01
3. Financial Transfers- Children		-	-.07$_c$	-.07$_c$	-.05$_c$	.20$_c$	.07$_c$	0	.34$_c$	.04$_b$	.12$_c$
4. Time Transfers- Parents			-	-.04$_b$	.08$_c$	.03$_a$	-.04$_a$	0	-.01	.05$_b$	-.02
5. Time Transfers- Children				-	.08$_c$	-.05$_b$	-.02	.04$_b$	-.01	-.01	-.01
6. Gender					-	.01	-.21$_c$	-.08$_c$	-.05$_c$	.15$_c$	0
7. Education						-	.07$_c$	-.01	.22$_c$	.25$_c$	.24$_c$
8. Marital Status							-	.34$_c$	.12$_c$	.06$_c$	.07$_c$
9. Spouse Retirement Status								-	.06$_c$	-.02	.01
10. Wealth									-	.06$_c$	.15$_c$
11. Cognition										-	.17$_c$
12. Health											-

Notes. $^a p < .05$, $^b p < .01$, $^c p \leq .001$

Financial transfers were measured as dollars in the past two years. Time transfers were measured as hours in the past two years. Education was measured in years. Wealth was measured in US dollars. Cognition was the number of words recalled out of a list of 20. Health was self-reported, with 1 meaning worst health and 5 meaning best health.

For gender, male was coded as 0 and female was coded as 1. For marital status, unmarried/unpartnered was coded as 0 and married/partnered was coded as 1. For spouse retirement status, no retired spouse was coded as 0 and retired spouse was coded as 1.

Table 4

Descriptive Statistics Comparing Included and Excluded Samples

	Overall (N = 36,867)	Excluded: No first full retirement (n = 17,741)	Excluded: First full retirement but no transfers (n = 14,607)	Included (n = 4,638)	*t* (χ^2)
1. Gender	56.3% female	57.2% female	54.8% female	57% female	(7.92_a)
2. Education	12.04 (3.46)	12.27 (3.56)	11.58 (3.44)	12.61 (2.94)	-18.42_b
3. Marital Status			62.2% partnered	73.8% partnered	(207.33_b)
4. Spouse Retirement Status			15.4% retired spouse	25.3% retired spouse	(263.30_b)
5. Wealth			$270,205 ($650,503)	$352,614 ($725,102)	-6.82_b
6. Cognition			9.84 (4.24)	11.09 (4.24)	-14.84_b
7. Health			3.02 (1.15)	3.25 (1.11)	-10.86_b

Notes. [a] $p < .01$, [b] $p < .001$

Education was measured in years. Wealth was measured in US dollars. Cognition was the number of words recalled out of a list of 20. Health is self-reported, with 1 meaning worst health and 5 meaning best health.

Variables 3-7 could not be provided for the samples without a first full retirement because they are time-varying and it is not clear which report should be considered definitive, as is the case with the pre-retirement measures used in the study.

Table 5

Retirement Statistics for Overall Sample (N = 36,986) by Cohort

Cohort	Percent Reporting First Full Retirement During Existing HRS Waves	Average Age of First Full Retirement (SD)	Average Timing of Retirement (SD)
AHEAD	62.2%	64.02 (11.02)	-.99 (11.03)
Children of Depression	85.6%	62.13 (9.12)	-2.87 (9.13)
HRS	69.3%	59.62 (7.76)	-5.59 (7.84)
War Babies	45.0%	56.76 (7.80)	-9.18 (7.86)
Early Baby Boomers	18.6%	52.60 (7.61)	-13.41 (7.67)
Mid- Baby Boomers	8.1%	47.80 (8.33)	-18.52 (8.51)

Table 6

Descriptive Statistics for Cluster Solution

Cluster	N	Time Transfers to Parents (Hours)	Time Transfers to Children (Hours)	Financial Transfers to Children (Dollars)	Financial Transfers to Children (Prop.)	Financial Transfers to Parents (Dollars)	Financial Transfers to Parents (Prop.)
1.Eldercare	237	839.76	20.48	$2,514.85	.03	$518.57	.009
2.Heavy Childcare	126	26.96	1096.90	$2,024.21	.04	$71.11	.0007
3.Moderate Childcare	251	23.45	436.22	$2,817.09	.04	$21.61	.0003
4.Adult Child Financial Support	4,219	20.61	16.29	$4,151.11	.07	$116.88	.002

Note. See MANOVA results (p. 25) for significant differences.

Table 7

Descriptions of Profiles by Demographic Characteristics

	Eldercare	Heavy Childcare	Moderate Childcare	Adult Child Financial Support	F (χ^2)
Gender (% women)	71.7%	81.0%	59.0%	54.7%	$(59.28)_b$
Race (% white)	82.7%	75.4%	82.9%	86.2%	$(14.88)_a$
Mean Education (SD)	13.00 (2.64)	11.80 (3.42)	12.75 (2.88)	12.72 (2.95)	4.81_a
Mean # Living Parents (SD)	.91 (.47)	.25 (.52)	.29 (.54)	.33 (.55)	87.93_b
Mean # Children (SD)	3.03 (1.80)	3.66 (2.27)	3.54 (1.86)	3.27 (1.92)	4.58_a
Mean Job Tenure (SD)	16.55 (12.74)	9.94 (11.12)	14.36 (11.59)	16.76 (13.38)	6.52_b
Mean Total Wealth (SD)	$344,080.76 ($539,436.20)	$299,830.88 ($488,802.58)	$435,690.28 ($715,647.55)	$399,510.17 ($848,840.70)	1.11
Cohort (% HRS)	80.1%	89.2%	84.9%	86.1%	(6.98)

Notes. [a] $p < .01$, [b] $p < .001$
Education and job tenure were measured in years. Wealth was measured in US dollars. The cohort comparison compares only the HRS and War Babies cohorts; the rest of the table includes all cohorts.

Table 8

Binary Logistic Regression Models Predicting Profile Membership

		95% CI for Odds Ratio		
Predicted Profiles	*b* (SE)	Lower	Odds Ratio	Upper
Eldercare				
Included				
Constant	-2.73 (.55)			
Gender (0=males, 1=females)	-.67[c] (.19)	.35	.51	.75
Race (0 = white, 1 = nonwhite)	-.15 (.24)	.54	.87	1.38
Job Tenure	.01 (.01)	.99	1.00	1.02
Number of Children	-.05 (.05)	.95	.86	1.05
Number of Living Parents	1.12[c] (.13)	2.38	3.07	3.95
Education	-.02 (.04)	.92	.98	1.05
Household Wealth	.00 (.00)	1.00	1.00	1.00
Heavy Childcare				
Included				
Constant	-.51 (.78)			
Gender (0=males, 1=females)	-1.62[c] (.37)	.10	.20	.41
Race (0 = white, 1 = nonwhite)	-.18 (.34)	.43	.83	1.63
Job Tenure	-.05[c] (.01)	.93	.96	.98
Number of Children	-.04 (.07)	.84	.96	1.10
Number of Living Parents	-.71[b] (.27)	.29	.49	.84
Education	-.11[a] (.05)	.81	.90	.99
Household Wealth	.00 (.00)	1.00	1.00	1.00
Moderate Childcare				
Included				
Constant	-2.84 (.54)			
Gender (0=males, 1=females)	-.17 (.17)	.60	.85	1.19
Race (0 = white, 1 = nonwhite)	-.15 (.24)	.54	.86	1.37
Job Tenure	-.01 (.01)	.97	.99	1.00
Number of Children	.07 (.04)	.98	1.07	1.16
Number of Living Parents	-.49[b] (.16)	.45	.61	.85
Education	.04 (.03)	.97	1.04	1.11
Household Wealth	.00 (.00)	1.00	1.00	1.00
Adult Child Financial Care				
Included				
Constant	1.15 (.36)			
Gender (0=males, 1=females)	.61[c] (.12)	1.44	1.83	2.34
Race (0 = white, 1 = nonwhite)	.18 (.16)	.88	1.20	1.63
Job Tenure	.01 (.01)	1.00	1.01	1.02
Number of Children	-.004 (.03)	.94	1.00	1.06

Number of Living Parents	-.28[b] (.09)	.63	.75	.90
Education	.01 (.02)	.97	1.02	1.06
Household Wealth	.00 (.00)	1.00	1.00	1.00

Note. [a]$p < .05$, [b]$p < .01$, [c]$p \leq .001$

Table 9

Prediction of Retirement Timing by Caregiving Profile, Gender, and Covariates

	F	Partial Eta Squared
Caregiving Profile	3.91_b	.003
Gender	4.92_a	.001
Profile*Gender	1.97	.001
Education	2.59	.001
Marital Status	83.54_c	.02
Spouse Retirement Status	17.58_c	.004
Wealth	6.48_a	.002
Cognition	66.72_c	.02
Health	33.30_c	.008

Notes. $^a p < .05$, $^b p < .01$, $^c p < .001$
$R^2 = .05$

Table 10

Timing of Retirement by Gender and Profile

	Average Timing of Retirement (SD)	
	Men	Women
Eldercare	-5.82 (5.89)	-6.05 (6.45)
Heavy Childcare	-4.91 (7.46)	-5.52 (8.97)
Moderate Childcare	-3.19 (5.93)	-4.33 (7.92)
Adult Child Financial Support	-2.51 (6.94)	-5.40 (9.31)
Overall	-2.69 (6.89)	-5.38 (9.06)

Table 11

Cohort-by-Caregiving-by-Gender ANCOVA Statistics

	F	Partial Eta Squared
Caregiving Profile	1.80	.002
Gender	2.25	.001
Cohort	32.66[b]	.012
Profile*Gender	.57	.001
Profile*Cohort	2.70[a]	.003
Gender*Cohort	.39	.000
Profile*Gender*Cohort	1.13	.001
Education	2.73	.001
Marital Status	81.86[b]	.03
Spouse Retirement Status	15.69[b]	.005
Wealth	15.45[b]	.005
Cognition	56.05[b]	.02
Health	18.87[b]	.006

Notes. [a]$p < .05$, [b]$p < .001$
$R^2 = .12$

Table 12

Average Retirement Timing by Gender, Profile, and Cohort

Gender	Profile	Cohort	N	Retirement Timing M (SD)
Men	Eldercare	HRS	34	-5.28 (6.41)
		WB	10	-6.51 (5.57)
	Heavy Childcare	HRS	11	-2.47 (3.68)
		WB	2	-15.42 (12.96)
	Moderate Childcare	HRS	61	-3.11 (5.36)
		WB	6	-6.71 (3.87)
	Adult Child Financial Support	HRS	863	-2.79 (5.88)
		WB	163	-5.92 (4.26)
Women	Eldercare	HRS	113	-4.86 (5.61)
		WB	20	-9.64 (5.17)
	Heavy Childcare	HRS	66	-5.67 (8.43)
		WB	8	-11.34 (6.47)
	Moderate Childcare	HRS	88	-3.52 (6.37)
		WB	18	-10.01 (8.49)
	Adult Child Financial Support	HRS	1121	-5.62 (7.94)
		WB	168	-8.55 (7.17)

Appendices

Appendix A

Further Confirmation of Eldercare Cluster

A further confirmation of the Eldercare cluster was achieved using a chi-squared analysis, investigating whether the coexistence of financial and time transfers to aging parents was accurate and appropriate. The two types of transfers were dichotomized into groups of participants who provided financial or time transfers in any amount and participants who didn't. The chi-squared value was significant ($\chi^2(1, N = 4833) = 128.14$, $p < .001$). Standardized residuals revealed an overrepresentation in the group that provided both types of care (SR = 10), confirming the substance of this cluster.

Appendix B

Linear Regression Predictors of Retirement Timing

			95% Confidence Interval	
	b (SE)	β	Lower	Upper
Gender	-3.12 (.22)	-.19[c]	-3.56	-2.68
Education	.11 (.04)	.04[b]	.04	.19
Marital Status	22.15 (8.00)	.04[b]	6.47	37.82
Spouse's Retirement Status	1.52 (.22)	.09[c]	1.10	1.95
Wealth	.00 (.00)	.05[c]	0	0
Memory	-.27 (.03)	-.14[c]	-.33	-.22
Health	.86 (.10)	.11[c]	.66	1.06
Time Transfers-Parents	.00 (.001)	-.02	-.002	.001
Time Transfers-Children	.00(.000)	.01	-.001	.001
Financial Transfers-Parents	7.17 (7.93)	.04	-8.38	22.72
Financial Transfers-Children	-.07 (.02)	-.04[c]	-.10	-.03
Gender*Time Transfers-Parents	.00 (.001)	-.002	-.001	.001
Gender*Time Transfers-Children	.00 (.00)	-.02	-.001	.000
Gender*	-8.16 (5.27)	-.06	-18.49	2.17

Financial Transfers-Parents				
Gender*Financial Transfers-Children	-	-	-	-

Notes. [a]$p < .05$, [b]$p < .01$, [c]$p < .001$

The gender and financial transfers to children interaction term was excluded from the model because the F probability level was greater than .10. 8