Work Hour Trajectories, Marital Quality, and Health of Couples across the Life Course

by

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DEDICATION

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ABSTRACT

There has been a growing interest in understanding work and family roles over the last several decades. Much of the literature has examined the work-family context as static and homogenous, but work and family lives change and develop over a lifetime. This dissertation conceptualizes work-family context as complex, dynamic, and heterogeneous for individuals and couples. Adopting a lifespan/life course framework, I use longitudinal data to examine work hour trajectories of both husband and wife among a sample of young newlyweds and a sample of older couples. I further investigate the associations among couples' work hour trajectories, marital quality, and health over time.

The first study examined work hour trajectories among newlywed couples over the first 16 years of marriage. Data were from the Early Years of Marriage Project, which included 352 Black and White American newlyweds in their first year of marriage in 1986 (Year 1), and in Years 3, 7, and 16 of their marriage. Four qualitatively distinct trajectories of work hours were identified. Notably, husbands worked full time in Year 1 of marriage with no change over 16 years across all four trajectories, whereas wives varied in the number of work hours in Year 1 and in how they changed over time. Results showed that these trajectories were associated with changes in marital happiness and depression predominantly among husbands even though it was the wives' work hours that varied.

The second study examined work hour trajectories among midlife and older couples over 14 years of marriage. Analyzing a nationally representative sample of 1641 midlife and older couples from the Health and Retirement Study, six distinct work hour trajectories were

identified. Work hours significantly decreased for all trajectories and the slopes of decline varied. Results showed that work hour trajectories were associated with changes in self-rated health and depression among husbands and wives. Taken together, these studies illustrate the heterogeneity of couples' work trajectories over the life course and the importance of studying linked lives over time. The findings also suggest that family roles and other work-related factors may moderate the effects of work on marital and health outcomes.

CHAPTER I

A Focus on Work and Family

In the past decades, there has been an ongoing debate about work-family conflict and whether both men and women can "have it all." Working individuals may have to deal with demands from both work and family lives, for instance, they may have to work long hours but need to pick up their children from school or not be able to make it home for dinner. The work-family conflict theory posits that demands in one role compete for an individual's finite time, energy (strain), and behaviors, thus deplete resources available to another role (Greenhaus & Beutell, 1985). As a result, work-family spillover occurs when being overloaded or stressed at work impairs one's ability to fulfill responsibilities at home. Specifically, time is viewed as a limited resource that is divided between work and family roles for married couples. Spouses have to juggle both work and family roles. Time becomes an especially valuable resource (Raley, Mattingly, & Bianchi, 2006). The more hours per week spent on work, the less time available to meet the demands of married life, such as spending time with one's spouse/partner. This phenomenon, the within-person transmission between two roles, has been termed the spillover effect (Grzywacz & Marks, 2000).

Experiencing demands at work may not only affect the working individuals themselves, but may very likely affect the well-being of their spouse (Bakker & Demerouti, 2013; Westman, 2001). Whereas spillover is a within-person transmission between two roles, that is, anindividual's work experiences influences the individual's experiences at home; crossover is a between-person transmission such that an individual's work experiences may lead to increased

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stress in his/her spouse/partner at home. Studies examining spillover and crossover have showed that married individuals who feel stressed at work are more likely to have poorer spousal relationship quality (Bakker, Demerouti, & Burke, 2009; Bolger, DeLongis, Kessler, & Schilling, 1989; Perry-Jenkins, Repetti, & Crouter, 2000). Research has also showed that an individual's negative work experiences can crossover to influence the partner's physical and psychological health, for example, increased complaints about physical symptoms and higher rates of depression (Bakker, 2009; Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005; Shimazu, Bakker, & Demerouti, 2009).

A large body of research has examined individual work-family conflict and a growing body of research has examined spousal work influences on the marital relationship and individual health. Much of this research, however, is cross-sectional or conducted over just a few years. Yet work and family lives change and develop over a lifetime. Work – defined as paid employment, be it self-employed or working as an employee – often involves promotions, demotions, career changes, unemployment, and retirement. Family life, often involving parents, siblings, spouse or partner, and children, could develop from being young newlyweds and first-time parents to midlife and older adults caring for their children and elderly relatives. In other words, individuals within couples experience changes in work and family over time. The couple itself, thus, experiences changes in work and family over time. In order to understand couples' work-family lives, researchers need to explore couple patterns or 'trajectories' which capture these dynamic changes of couplehood. Couples' work-family trajectories can also reveal how couples adapt and cope with work-family challenges. This could be very different for younger couples and for midlife and older couples. Work time, often measured as work hours per week, is particularly important for couples as they balance between work and family responsibilities.

Examining couples' work hour trajectories can reveal how spousal changes in work hours may be linked to health and marital outcomes. The aim of this dissertation is to examine how couples' work hour trajectories are associated with marital outcomes and individual health among younger and older couples.

In the following sections, a lifespan and life course perspective will serve as the overarching theoretical framework to examine work and family development among couples. Next, the Convoy Model of Social Relations for couples will be introduced to illustrate the importance of taking into account the effects of both husbands' and wives' individual characteristics and the couple's contextual characteristics on marital outcomes and health. A general overview of previous research on work time will then be provided. Finally, the chapter will end with a preview of the two studies in this dissertation.

Work and Family: A Lifespan/Life Course Perspective

The major proposition of the lifespan and life course perspectives is that development is a lifelong process and can be influenced by individual and environmental factors (Baltes, Lindenberger, & Staudinger, 1998; Baltes & Smith, 2004; Elder, 1998). Individuals develop cognitively, physically, and socially while being surrounded by close others and in a certain historical time and place. The life course perspective has four major principles: linked lives, interplay of human lives and historical time, timing of lives, and human agency (Elder, 1998). The principle of linked lives is a key premise which emphasizes that our lives are interconnected: people are surrounded by others and they both influence and are influenced by these relationships. The second principle of the interplay of human lives and historical time states that people are shaped by the historical time and place in which they are embedded, which means that individuals can have different life patterns or trajectories over their lifetime. Even individuals

who experience similar events can perceive and react to those events differently, which highlights the heterogeneity of people's life trajectories. Furthermore, an individual's life trajectory can show patterns of stability and change that can have long-term consequences on adaptive outcomes, such as marital longevity, health, and well-being. The third principle is timing of lives, which states that the impact of a certain event or transition depends on when it occurs in a person's life. It emphasizes the importance of cohort effects of social and historical contexts, such as war or economic recession that can shape people's lives. Finally, the fourth principle of human agency recognizes that people are active agents who can construct their own lives through choice and action. This dissertation focuses on the first and second principles of linked lives and trajectories, while taking into account the third principle of timing or historical period.

I now describe the three principles from the lifespan/life course perspective considering couples' work-family issues. First, when considering the principle of linked lives within the study of work and family, much of developmental psychological research has focused on the relationship between parents and children. The marital relationship, however, is also worthy of considerable attention. In 2013, 50.3% of the U.S. population was married (Cohn, Passel, Wang, & Livingston, 2011). Through interaction and experiencing common life events, spouses have significant influence on each other's physical and psychological health (Ryan, Wan, & Smith, 2014; Westman, 2001). Research has found that spouses can help reduce unhealthy eating and exercise habits, such as poor dietary habits, and promote better health habits, such as getting regular checkups and taking medication on time (Umberson, 1992; Waite & Gallagher, 2002). However, spouses can also adopt each other's unhealthy habits, such as smoking and drinking as well (Reczek, 2012). In the work-family context, stresses experienced by an individual at work

can influence the well-being of his or her spouse at home (Bakker & Demerouti, 2013; Westman, 2001). This dissertation focuses on the work context of married couples rather than married individuals to reflect the notion of linked lives and mutual spousal influence.

Second, couples may experience different work-family trajectories as they go through different phases of work and family lives over time. One major reason that couples change and adapt their work hours is to provide caregiving. For example, working parents of young children may reduce their hours to care for a child and may increase work hours when the child has grown older. In the United States, 43.5 million adults care for someone aged 50 and older and the number of hours spent on caregiving increases with the age of the caregiver (Anderson, 2004; Thies & Bleiler, 2011). If these caregivers are also employed outside the home, time spent on caregiving may conflict with the caregiver's work and add to the caregiver's stress. Thus, couples who are responsible for taking care of aged or ill parents and relatives may reduce their work hours from full to part time. It is also likely that only one spouse, often the wife, reduces work hours to respond to caregiving needs. Examining couples' work hour trajectories can , therefore, reflect some of these caregiving needs.

Apart from caregiving, individuals' work demands can also change over time. Promotions or career changes may require input of extra hours, whereas demotions or layoffs may reduce work hours. Among married couples, one study found that a spouse's unemployment decreased life satisfaction in both spouses (Luhmann, Weiss, Hosoya, & Eid, 2014). Over time, changes in one spouse's work may not only affect his or her own well-being and marital satisfaction, but can also influence their partner's health and marital satisfaction. This dissertation, therefore, examines married couples over time because examining the work hour

trajectories of both spouses in a couple can provide information about the effects of spousal work on marriage and health beyond examining each spouse individually.

Third, the demographics of working families have changed over time. Between 1970 and 1990, there has been a shift from the male breadwinner and female homemaker model to an increase in the number of dual-earner couples (Bianchi, Casper, & King, 2005; Blossfeld & Drobnic, 2001). In the 1950s, there was a visible gender divide in terms of work and family, such that men supported the family financially through paid work and women supported the family at home through unpaid work. This gender divide gave rise to differential division of labor with wives providing caregiving at home, as well as shifts in power dynamics within a couple often with husbands having more say because of their financial contribution to the family. Since then, there has been a significant increase in women entering the workforce due to increased access to education and occupations, social changes through the civil rights movement, and financial need for two incomes to sustain the family. With these changes, couples have started their marriages differently over the decades from a majority of couples with one working spouse to two working spouses. Cohort differences in gender expectations and behaviors also arise in how to balance work and family as work and family responsibilities (e.g, promotions or child birth) change over time. For example, wives were expected to stay at home or leave work to care for children, whereas wives now can take maternity leave and then resume work. The proposed studies will examine two different samples, newlyweds on average aged 25 in 1986 and couples aged 50 and older in 1998, and how those couples change over time. Although this dissertation does not explicitly examine cohort differences, the timing and historical period will be taken into account in the discussion of the findings.

Convoy Model of Social Relations for Couples

The convoy model of social relations is a model that captures the lifespan/life course perspective by illustrating that individuals go through life embedded in and shaped by their convoy (Antonucci, 2001; Kahn & Antonucci, 1980). A convoy is defined as a group of close social ties who can provide support and protection but can also bring about risks or stresses. Convoys often move with the individual across time and social ties within the convoy can change (e.g., a loved one dies or a new neighbor moves in). The model assumes that individual characteristics, such as age and gender, and contextual characteristics, such as work and neighborhood factors, shape an individual's relationships and health over time. I adapted this model for couples to highlight that a husband and wife have mutual influence on each other (Figure 1.1). This model accounts for the direct and indirect effects of individual and contextual characteristics on marital relationship quality and health. It also illustrates the premise that convoys are dynamic and that the influence of individual and contextual characteristics on marriage and health can change over time. The convoy model of social relations for couples will serve as the guiding framework to test the developmental research questions in this dissertation with a particular focus on the influence of couples' work trajectories over the life course.

Overview of Previous Research on Work Time

Within the work context, past research has focused on examining work time, which is a key feature and concern for working individuals and organizations. Time is limited. For individuals who work outside home, time spent at work is time not spent at home. For individuals who work from home, time allocated to work is likely time not spent focused on family. Issues of coordinating family life (e.g., caregiving, domestic work) for married couples depends on both spouses, whether one or both spouses are working. Stress can arise if time

allocated to work and family does not match the couples' negotiated coordination (Bianchi et al., 2005), which could lead to negative marital quality or health declines.

There are many ways to measure work time, such as day and night shifts, fixed or flexible schedules, and working on weekdays or weekends. One of the most common measures is determining the number of hours worked per week. Work hours are an objective characteristic that workers, organizations, and governments can measure. Although many countries represented in the Organisation for Economic Co-operation and Development (OECD) have reduced work hours through legislation and government regulations, there has been a rise in work hours in the U.S. (Sparks, Faragher, & Cooper, 2001). It is well-known that Americans work more hours than their Japanese, British, and French counterparts. Research has generally found that longer work hours are associated with negative individual and family outcomes. Several cross-sectional studies provided support for this idea, such that longer work hours is related to greater work-family conflict (Adkins & Premeaux, 2012; Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Byron, 2005; Major, Klein, & Ehrhart, 2002; Tausig & Fenwick, 2001). While there has not been a determined threshold as to how many hours per week is considered "long," most of these studies reported an average number of hours that is above full time (between 40 and 50 hours per week) with standard deviations between approximately 7 and 12 hours and ranging between 20 and over 80 hours per week. This suggests that working beyond the standard 40-hour week is associated with worse marital or family outcomes.

Despite the wealth of studies on work time and work-family conflict, there are several limitations in the literature. First, most studies examined cross-sectional data or data collected over months or at most a few years. This limitation leaves significant gaps in our understanding of how work changes over time. This lack of understanding, in turn, limits our ability to

understand how work changes are associated with changes in the marital relationship and health over time. Second, even when investigating work-family conflict, many studies examined individuals rather than couples. Researchers have called for more studies on the interdependence between spouses, especially longitudinally, to understand how husbands and wives' employment as well as their family needs change over time (Blossfeld & Drobnic, 2001). Third, previous studies have focused on young to midlife workers (approximately 20 to 50 years old), but many workers work beyond age 50 and into old age. Even with mandatory retirement in some industries and organizations, people often work until 60 or 65 years old which calls for a deeper understanding of the work-family context of midlife and older workers. Furthermore, even less attention has been paid to the work-family context of midlife and older couples. This dissertation aims to address these gaps by examining work hours of a sample of newlywed couples and a sample of midlife and older couples over many years of marriage.

Preview of Studies

The two studies in this dissertation will examine work hour trajectories of both husband and wife in a couple over time. The first study focuses on newlywed couples on average aged 25 from their first year of marriage and how they change over 16 years of marriage. Because work-family conflict has been associated with worse marital outcomes and worse psychological health, this study also examines the associations between couples' work hour trajectories and changes in marital happiness and depression. The second study focuses on midlife and older couples aged 51 and over. Because attention shifts from growth to health maintenance and regulation of loss during midlife and late adulthood (Baltes & Smith, 2004; Saxon, Etten, & Perkins, 2014), this study examines the associations between couples' work hour trajectories and changes in physical and psychological health, namely self-rated physical health and depression. Together, these

studies shed light on the changes in work, marriage, and health among married couples over the

life course from young newlyweds to old age.

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CHAPTER II

Couples' Work Hour Trajectories from Newlywed to Midlife Years

Introduction

Convoy Model for Young to Middle-age Couples

The convoy model of social relations for couples assumes that husbands' and wives' individual and contextual characteristics influence their own and each other's relationship quality and health (Figure 2.1). The model highlights that contexts, such as each spouse's work context, matters for couples' individual and marital well-being. For young couples, external stressors have been found to have detrimental implications for the couple, especially when experienced during the early years of marriage (Karney & Bradbury, 2005; Neff & Karney, 2004). Work time may be particularly important because of competing time pressures at work and at home. For example, during the early years of marriage, working spouses may have to choose between spending more time at work to launch their careers or stay at home to care for a young child. Figure 2.1 illustrates the convoy model of social relations with characteristics that may play important roles in the lives of young newlywed to middle-age married couples. This study first identifies the different work hour trajectories for husbands and wives from the first year to over 16 years of marriage. Next, I examine the associations between couples' work hour trajectories with marital quality (Figure 2.1; Line 1) and psychological health (Figure 2.1; Line 2) while taking into account important individual and couple contextual characteristics.

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Previous Research on Work Hours, Marital Quality, and Health

Few studies have examined the association between work hours and marital quality among couples (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005), but there is some evidence that there may be gender differences in this association. Research has found that longer work hours were indirectly associated with greater marital satisfaction for women, explained by fewer hours spent on household tasks, whereas longer work hours were indirectly associated with lower marital satisfaction for husbands, explained by decreased satisfaction with housework arrangements. On the other hand, a study of two national surveys of married individuals revealed that wives', but not husbands', extended work hours were associated with declines in marital quality (Amato, Johnson, Booth, & Rogers, 2003). Rogers (1996) also found that mothers who were employed 40 hours or more had significantly lower levels of marital happiness. A potential explanation is that being employed full time led to strain in work and family roles as well as lower marital quality (Rogers, 1996). Hence, findings in the literature are inconsistent, especially for wives such that it is unclear whether longer work hours are beneficial or detrimental to their marital quality.

Past research has also examined the negative effects of long work hours on physical and psychological health. Working long hours can physically tire workers. Long work hours have, thus, been associated with multiple physical health outcomes, including cardiovascular problems, musculoskeletal disorders, weight gain, and increased smoking and drinking (Shields, 1999; Sparks, Cooper, Fried, & Shirom, 1997; Trinkoff, Le, Geiger-Brown, Lipscomb, & Lang, 2006; Van der Hulst, 2003). Long work hours are also related to sleep deprivation, resulting in increased likelihood of occupational injuries and safety problems (Dembe, Erickson, Delbos, & Banks, 2005; Folkard & Lombardi, 2006). Work hours, therefore, is a major concern for

occupations such as long-distance drivers and medical staff. In Japan, working long hours can lead to such fatigue that 'karoshi' or death from overwork can result. This has become a major social problem (Iwasaki, Takahashi, & Nakata, 2006). In terms of couples, one study found that an individual's daily cortisol level increased not only with an increase in the individual's own work hours, but also with an increase in the spouse's work hours (Klumb, Hoppmann, & Staats, 2006). Together, these findings suggest that not only do an individual's own work hours influence his or her physical health, but the spouse's work hours also influence an individual's stress levels and physical health.

As for psychological health, some studies have examined the link between work hours and psychological health. Long work hours have been associated with increased likelihood of experiencing depression, burnout, and job dissatisfaction (Nakata, 2011; Sparks et al., 1997). Research has found that women who worked 55 or more hours per week compared to 35-40 hours per week had more than double the risk of developing depressive and anxiety symptoms over 5 years (Virtanen et al., 2011). Other studies also found that long working hours were associated with elevated risk of the onset of depression at a 3-year follow-up (Amagasa & Nakayama, 2013). This increase in depression could be associated with individuals, particularly women, who had childcare responsibilities (Beatty, 1996; Thomas & Ganster, 1995). On the other hand, one study showed that increasing work hours from homemaker to part-time or full-time work was related to lower depression for women over 3 years, whereas decreasing work hours from full-time to part-time (10-19 hours per week) was associated with greater depression over 3 years (Wethington & Kessler, 1989). Together, these findings suggest that working between 20 and 55 hours per week may be beneficial for women's depression, whereas too little (below 19 hours per week) and too many (55 or more hours per week) hours may be detrimental

for women and increase their rates of depression. However, these studies did not take into account the marital context. Considering both spouses' work can reveal stresses experienced by the couple. For example, couples with wives and husbands who work few hours may experience financial stress, whereas couples with wives and husbands who work many hours may experience burnout from coping with both work and family pressures.

Even fewer studies have examined the link between spousal work hours and psychological health. One study that examined work-family spillover found that work-family conflict among husbands were associated with increased concurrent depression in wives, whereas husbands with positive experiences at work that spillover into experiences at home (e.g., better mood because of high job satisfaction) had wives who reported lower depression one year later (Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005). Extending from this research, long work hours, which are associated with greater work-family conflict, may be associated with increased concurrent depression for spouses. More importantly, this study suggests that there may be certain positive job experiences that are associated with lower depression for spouses. It is clear that more studies on the interdependence between spouses, especially longitudinally, are needed to understand how husbands and wives' work change over time and how those changes are associated with family and individual health outcomes (Blossfeld & Drobnic, 2001). The present study focuses on the links of couples' work hours over time to marital quality and psychological health, specifically marital happiness and depression.

It should be noted that much of the previous literature was cross-sectional or rarely extended beyond one to four years, but examining changes in work hours beyond a few years may reveal important clues about an individual's work context. For example, many studies examined work hours at one point in time. Suppose an individual was working 60 hours per

week. According to previous findings, this individual who worked 60 hours per week may have worse marital quality and health compared to another person who worked 40 hours per week. However, if examined longitudinally, this individual may have reduced work hours from 80 to 60 hours per week and thus have better marital quality and health due to lowered work stress and more time to spend with his or her spouse. It is also possible that this individual increased work hours from 20 to 60 hours per week and thus has better marital quality and health due to increased financial stability. Examining within-person change over time in addition to between-person differences would, therefore, contribute to our understanding of an individual's life trajectory. In addition, findings have suggested that spouse's work context can significantly influence an individual's outcomes. The present study extends those findings by examining changes in both individual and spouse's work hours over time because the couple's joint work context can reveal more than an individual's work context. For example, an increase in work hours from 60 to 80 hours per week may be considered a detrimental change for an individual, however, if his or her spouse was unemployed then the increase in hours (and thus likely an increase in income) may be beneficial for the couple. Taking into account the couple's work hour trajectories allows us to paint a fuller picture and understand the nuances that are associated with the heterogeneity of work and family trajectories.

Gender Roles and Couples' Trajectories

Gender roles and societal norms regarding work and family responsibilities have changed over the last few decades in the United States. Traditionally, families were comprised of a single-worker, often the husband, who provided the financial means to support the family while the wife supported the family at home. Although many families (21% of married households) continue to adopt the single-worker model with only husband working in 2010, this percentage

has decreased from 38% in 1965 (Advisers, 2014). Dual-working couples, on the other hand, in which both spouses work have become the norm (Bianchi, Casper, & King, 2005; Blossfeld & Drobnic, 2001). In 2010, 66% of married households were comprised of dual-working couples compared to 47% in 1965 (Advisers, 2014).

Once couples become parents, they face a new set of work and family challenges, especially related to childcare responsibilities. Consistent with gender role expectations that mothers often allocate time to care for the child, 43% of married mothers were employed full time between 2003 and 2006 compared to 88% of married fathers, and on average, these fathers worked more hours per week than mothers (Statistics, 2008). In addition, married mothers with preschool-age children were less likely to work full time compared to mothers whose youngest child was between ages 6 and 17 (Bianchi et al., 2005; Statistics, 2008). Based on gender role expectations and the employment statistics of married households, I hypothesize that there will be at least three work combinations among husbands and wives in the first year of marriage, including both working full time, husband working full time and wife working part time, and husband working full time and wife not working at the beginning of marriage. With the increased number of wives who are the main family earners, it is possible that there will be combinations of wife working full time and husband working part time or not working.

Although husbands and wives may begin their marriage working a certain number of hours, these work hours can change over time depending on other contexts such as maternity leave, a promotion, or unemployment. For example, there is some evidence in the literature that fathers may increase work hours after the birth of a child, whereas mothers tend to either return quickly to work after a short maternity leave or take time off after childbirth to stay at home with the child (Lundberg & Rose, 2000; Smith, Downs, & O'connell, 2001). There are also

cohort differences in this effect, such that roughly 17% of mothers went back to work in the 1960s after their child turned one, whereas 60% of mothers returned to work in the 1990s (Smith et al., 2001). In terms of work hours, the majority of mothers eventually returned to the same number of pre-birth work hours after childbirth. Based on previous findings, I predicted that there will be gender differences in how work hours change over time between husbands and wives, such that husbands will experience no change or an increase in work hours and wives will experience either no change, a decrease, or a decrease then increase of work hours over time.

Apart from describing the work hour trajectories of married couples, it is also important to consider what kinds of couples fall into each trajectory. Sociodemographic factors, such as education and household income, may be associated with wives' participation in the labor force and thus associated with belonging to trajectories with both spouses working. Life course factors, such as marrying younger, having cohabited, and having children, may be associated with lower employment rate and thus associated with trajectories in which only the husband is working. Race may also be linked to work hour trajectory membership because Black couples are more likely to have wives in the labor force compared to White couples (Hayghe, 1983). Black couples also have higher divorce rates and report lower marital quality than do White couples (Bramlett & Mosher, 2001; Broman, 2005; Bulanda & Brown, 2007; Orbuch, Bauermeister, Brown, & McKinley, 2013; Orbuch & Brown, 2007). This study makes use of a unique dataset that oversampled Black couples to assess whether race, as well as other important sociodemographic and life course factors, are associated with couples' work hour trajectories.

Work Hour Trajectories, Marital Happiness, and Depression

To the extent that diverse work hour trajectories exist among married couples from the newlywed years to midlife, the current study can go beyond prior studies that assume individuals

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experience the same average trajectory. Couples' work hour trajectories provide valuable information about how individuals within couples begin and change work hours over the course of marriage in relation to their spouse. These trajectories could be differentially associated with changes in marital happiness and depression. From previous research on work time and work-family conflict, spouses who spend more time working report greater work-family conflict and greater likelihood of considering divorce (Adkins & Premeaux, 2012; Tulane, Skogrand, & DeFrain, 2011), suggesting that spouses who work longer hours may have lower marital happiness. In addition, longer work hours are associated with greater depression for the individual and, extending from previous research, for the spouse (Hammer et al., 2005; Virtanen et al., 2011). These findings may be exacerbated if both spouses are working. Based on the literature on the detrimental effects of long work hours, it was hypothesized that couples in trajectories with discrepant work hours over time (e.g., full time and part time, full time and not working) will report better marital quality and lower depression than couples in trajectories with both spouses working full time over time.

Much of the work hours literature focused on the number of work hours at one point in time. It is unclear whether changes in work hours are adaptive or maladaptive to changes in marital happiness and depression. Spouses could decrease work hours to adapt to family needs like a birth of a child, leading to greater marital happiness and lower depression. However, spouses could increase work hours, for instance, because their partner lost their job which would be associated with lower marital happiness and greater depression. Hence, I explore how couples' work hour trajectories are associated with changes in marital happiness and depression over time.

Family and Work Related Moderators

Spouses' changes in work hours could be adaptive or maladaptive for marital happiness and depression. Two family and work factors that may play a role in this association are explored: number of children and job satisfaction.

In addition to married mothers being less likely to be in the labor force, research has found that the more children in the household, the fewer hours the mother worked (Bianchi et al., 2005). Specifically, mothers with one child work an average of 26.3 hours per week, whereas mothers with four or more children work an average of 15.3 hours per week. Interestingly, father's work hours average 45 to 47 hours per week regardless of the number of children. These statistics suggest that mothers adapt their work hours significantly to suit the needs of the family depending on the number of children they have. Therefore, it was predicted that couples in trajectories with a wife who decreases (adapts) work hours over time and have more children over the course of marriage will report greater marital happiness over time and declines in depression compared to couples in trajectories with a wife who did not decrease work hours and have more children.

Apart from adapting to family contexts, job conditions may change over time as well. Contrary to the work-family conflict theory, research has suggested that having both work and family roles may not necessarily be stressful or conflicting but could be beneficial when one role enhances the quality of the other role (Barnett & Hyde, 2001). Experiences at work can benefit the individual's marital happiness and psychological health if the individual finds the work satisfying. Indeed, job satisfaction in the afternoon has been related to marital satisfaction at a later time at night (Heller & Watson, 2005), and job satisfaction buffers the negative effects of work demands on marital satisfaction (Hewlett & Luce, 2006; van Steenbergen, Kluwer, &

Karney, 2011). In addition, although long work hours have generally been found to be linked with greater depression (Virtanen et al., 2011), employment has also been linked to lower depression for women (Repetti, Matthews, & Waldron, 1989) and increased work hours over time were associated with lower depression (Wethington & Kessler, 1989). These inconsistent findings could be due to differences in levels of job satisfaction, such that long work hours are only detrimental to health when job satisfaction is low (Barnett & Hyde, 2001). Moreover, research has suggested that husbands who experienced positive work-family spillover, for example, being in a good mood at home because he felt successful at work, have wives who report lower depression one year later (Hammer et al., 2005). This suggests that an individual's job satisfaction can buffer the negative effects of individual work stress on his or her own marital quality and depression, as well as buffer the negative effects of individual work stress on his or her spouse's marital quality and depression. Based on the positive spillover and crossover literature for young to midlife adults, it was predicted that spouses who remain full time or increase work hours and have higher job satisfaction will report greater marital happiness over time and declines in depression compared to spouses who remain full time or increase work hours and have lower job satisfaction.

Present Study

The current study aims to identify qualitatively different work hour trajectories among married couples from the first year of marriage over 16 years. Based on the work and family literature, I outlined the following hypotheses:

Hypothesis 1a: There will be at least three work combinations among husbands and wives in their first year of marriage: Couples in which both spouses work full time at the beginning of marriage, couples in which husband works full time and wife works part time at the

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beginning of marriage, and couples in which husband works full time and wife does not work at the beginning of marriage. There may also be couples in which wife works full time and husband works part time or does not work at the beginning of marriage.

Hypothesis 1b: There will be gender differences in how work hours change over time for husbands and wives: Husbands will experience no change or a slight increase in work hours over time, whereas wives will experience no change, a decrease, or a decrease in work hours then return to similar work hours over time.

Together, Hypotheses 1a and 1b suggest there will be diverse work hour trajectories among married couples. In general, it is hypothesized that wives will report more variations than husbands in work hours at the beginning of marriage and in their change over time.

Hypothesis 2: Couples in trajectories with spouses who work discrepant hours (e.g., full time and part time, full time and not working) will report better marital quality and lower depression over time compared to couples in trajectories with both spouses working full time. I also explore whether these associations are beneficial or detrimental to marital quality and health over time.

To elucidate the conditions in which work hour trajectories may influence marital quality and health over time, I examine spouses' number of children and job satisfaction as potential family and work moderators.

Hypothesis 3: Couples in trajectories with a wife who decreases (adapts) work hours and have more children over the course of marriage will report greater marital happiness over time and declines in depression compared to couples in trajectories with the wife who did not decrease work hours and have more children over time.

Hypothesis 4: Spouses who remain full time or increase work hours over time and have higher job satisfaction will report increases in marital happiness and declines in depression over time compared to spouses who remain full time or increase work hours and have lower job satisfaction.

Method

Participants

Participants are from the Early Years of Marriage Project (EYM) which began in 1986. Couples were re-interviewed in Years 2, 3, 4, 7, and 16 (see Table 1 for sample description). The original sample of couples was selected from those who applied for a marriage license in Wayne County, Michigan from April through June 1986. The original sample included 373 same-race (174 White American and 199 Black American) newlywed couples in Year 1 (1986). On average, husbands were age 27 and wives were age 24. They were between the first four to nine months of marriage. In order to assess how the EYM sample compared to the national population, we compared the EYM sample to the General Social Survey (GSS) data from 1980-1994, which is a nationally representative sample. There were no differences between the EYM sample and the GSS married sample by race in income, education, parental status, likelihood of cohabitation, and employment status (Orbuch, Veroff, Hassan, & Horrocks, 2002). Given that the original sample is representative of the married U.S. population in early adulthood in general, the significance of our findings is enhanced. Participants completed face-to-face interviews in their homes with race-matched interviewers in Years 1, 3, 7, and 16. Spouses were interviewed separately and then together as a couple. At Year 1 of marriage, 341 (91.4%) husbands and 236 (63.3%) wives indicated that they were working, 12 (3.2%) husbands and 5 (1.3%) wives were temporarily laid off, 14 (3.8%) husbands and 42 (11.3%) wives were unemployed, 3 (0.8%)

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husbands and 12 (3.2%) wives were students, 3 (0.8%) husbands and 12 (3.2%) wives were

disabled, 15 (4.0%) wives were on maternity leave, and 62 (16.6%) wives were homemakers.

This study examined couples in which at least one spouse indicated they were working in Year 1,

resulting in 352 couples/704 participants, and uses data from Year 1, 3, 7, and 16.

Attrition

The response rate of the original 746 participants varied across 4 waves with an average

of 80% of the original sample participating (range 70%–93%; calculated by dividing the total

number of husbands or wives interviewed by the number eligible to participate). Specifically, the

response rate for the original sample in Year 16 was 75% ($n = 528$), which included 320 married

individuals. This attrition rate is consistent with other longitudinal studies, such as the National

Survey of Families and Households, which reports a 15% rate for Whites and a 23% attrition rate

for Blacks from 1987 to 1994.

For the present study, the response rates (calculated by dividing the total number of

husbands or wives interviewed by 704 participants) decreased over 4 waves due to divorce and

attrition because divorced participants were not asked to report on key variables (e.g., marital

happiness). Divorcees' data were included in the analysis until they dropped out. In Year 16,

there was a major tracking effort in Year 16. The response rate for marital status is higher than

other variables because most participants who were reached were asked if they were still married

even if they did not subsequently participate in the Year 16 survey. The response rate for marital

status in Year 16 among the final sample was 95% ($n = 336$), which included 179 married

individuals. Among the final sample, the divorce rate increased over time from 12.2% in Year 3

to 26.7% in Year 7 to 44.6% by Year 16 (Table 2.1).

The response rate for work hours varied across waves with an average of 66.1% of

responses across all participants from every wave. Of the 704 participants, 701 (99.6%) responded in Year 1, 513 (72.9%) responded in Year 3, 336 (47.7%) responded in Year 7, and 312 (44.3%) responded in Year 16 (Table 2.1). The majority of participants ($n = 367$; 52.1%) had at least three time points of data. To examine longitudinal selectivity of reporting work hours, I examined whether a series of variables assessed in Year 1 including age, race, education, household income, and number of children predicted the number of waves of work hours completed. Table 2.2 presents the age at assessment, as well as means and standard deviations for work hours and Year 1 covariates separately for husbands and wives. Husbands and wives who were White ($F(3,700) = 28.08$, $p < .001$), had more years of education ($F(3,699) = 20.07$, $p < .001$), had higher household income ($F(3,690) = 19.52$, $p < .001$), and had fewer children ($F(3,700) = 11.90$, $p < .001$) in Year 1 completed more waves of data.

Measures

Dependent variables. *Depression* was measured with an average of 4 items that Veroff, Douvan & Kulka's (1981) labeled zest and which were originally the four positively worded items from the Zung Depression Inventory (1965). The prompt for the items stated "Here are a few statements that people sometimes use to describe themselves. For each one, please tell me how often you feel that way about yourself." Items included "I feel that I am useful and needed," "My life is pretty full," "I feel hopeful about the future," and "My life is interesting" on a scale (1) always, (2) most of the time, (3) some of the time, and (4) never. Items were reverse-coded such that a larger number indicated greater depression. Cronbach's alpha for this scale ranged from .63 – .75 indicating acceptable to good reliability over the years.

Marital happiness was measured with an average of 5 items on a four-point scale: "Taking things altogether, how would you describe your marriage? Would you say your

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marriage is – (1) *very happy,* (2) *a little happier than average,*(3) *just about average, or* (4) *not too happy*?," "When you think about your marriage – what each of you puts in and gets out of the marriage – how happy do you feel? Would you say (1) *very happy,* (2) *fairly happy,* (3) *not too happy, or* (4) *not at all happy*?," "How certain would you say you are that the two of you will be married five years from now? Would you say (1) *very certain,* (2) *fairly certain,* (3) *not too certain, or* (4) *not at all certain*?," "How stable do you feel your marriage is? Would you say (1) *very stable,* (2) *fairly stable,* (3) *not too stable, or* (4) *not at all stable*?," "All in all, how satisfied are you with your marriage? Would you say you are (1) *very satisfied,* (2) *somewhat satisfied,* (3) *somewhat dissatisfied, or* (4) *very dissatisfied*?" Items were recoded such that a larger number indicated greater marital happiness. Cronbach's alpha for this scale ranged from .82 – .89 indicating good reliability over the years.

Independent variables. *Work hours* was measured with one item. Participants were asked "About how many hours do you work on your job in the average week, including any paid or unpaid overtime?" Participants were assigned a 0 if they responded that they were not working which was obtained from a question on their work status. Participants were asked to report their *work status*: "Are you working now for pay, or are you unemployed, on maternity leave, a homemaker, a student, disabled, or what? (Check all that apply.)" Response options included *working now/sick leave/on strike*, *temporarily laid off*, *maternity leave*, *unemployed*, *homemaker*, *student*, *disabled*, or *other*. A summary *working* (1 = working, 0 = not working) variable was created where participants were assigned a 1 as long as they responded to *working now/sick leave/on strike* and were assigned a 0 if they did not indicate they were working now.

Moderators. *Number of children* was calculated as the total number of children, including adopted and foster children, indicated as living in the current household at each wave.

Among participants who indicated they were working, their *job satisfaction* was measured at each wave with one item "In general, how satisfied are you with your job? Would you say *very satisfied, somewhat satisfied, somewhat dissatisfied,* or *very dissatisfied*?" This item was reverse-coded such that a larger number indicated greater job satisfaction.

Covariates. Age, gender, race, education, household income, and months of cohabitation were included as covariates. For all analyses apart from the moderation analysis involving number of children, number of children in the household was included as a covariate. Gender, race, and months of cohabitation were collected at Year 1. Age, education, household income, and number of children were time-varying. Age, gender, and education were at the individual level, and race, household income, months of cohabitation, and number of children were at the couple level.

Age was recoded at each data collection. Gender was coded as 0 (*husband*) and 1 (*wife*). Race was coded as 0 (*White American*) and 1 (*Black American*). *Education* was reported as highest grade of school or year of college that husbands and wives completed by the year of data collection. *Household income* before taxes the year of data collection was reported by both husbands and wives from 1 (*none or less than $2,999*) to 22 (*$75,000 and over*). Household income significantly violated the normality assumption, which was corrected with log transformations. Participants were asked to indicate if they lived together prior to getting married. The variable *months of cohabitation prior to marriage* was the number of months, if any, participants stated they lived with their partner prior to their marriage in 1986. The means of household income and months of cohabitation reported by husband and wife were calculated as couple-level covariates. *Number of children* was calculated at every data collection (see Moderators). Time was centered on Year 1 such that zero represented the first year.

Analysis plan

  Trajectory modeling. Multilevel Latent Class Growth Models (LCGA) using Mplus

Version 7.11 were used to examine whether couples reported different trajectories of work hours

over time (e.g., both initially worked and remained full-time, both initially worked full-time and

wife reduces to part-time, etc.). LCGA models identify trajectory groups and allow for the

assessment of individual differences within each developmental trajectories (Jung & Wickrama,

2008). Both husband and wife's work hours were included in the same model. Mplus uses a

robust full-information maximum-likelihood (FIML) estimation for handling missing data and

assumes missing data at random (MAR).

  I first estimated a model with one trajectory group to estimate an average work hour

trajectory for couples. Next, I estimated a series of LCGA models to find the optimal number of

trajectory groups. Model adequacy was assessed with the following criteria. First, Bayesian

information criterion (BIC) was used to examine goodness of fit where a change in Bayesian

information criterion (BIC X2) is greater than 2 (Jones, Nagin, & Roeder, 2001). Based on

current literature, it is important to use additional fit indices beyond BIC (Muthén, 2004). The

second criterion is that high values of entropy are preferred; however, it is not recommended to

emphasize this value because entropy is by definition a function of the number of classes

(Kreuter & Muthén, 2007). Third, the Vuong-Lo-Mendell-Rubin (VLMR) test and the

bootstrapped parametric likelihood ratio test (BLRT) with p-values of less than 0.05, which

means that the model with K classes has significantly better than that with K-1 classes. Fourth,

the average posterior probability (AvePP) that an individual belongs to a trajectory group has to

be at least .7. Fifth, the odds of correct classification (OCC) should be above 5 for each group.

Sixth, the probability of group assignment compared to the actual proportion of individuals who

fall into a group should be less than 50% (Nagin, 1999). Finally, each of the groups should include at least 5% of the participants (Lavner & Bradbury, 2010).

After selecting the number of groups, I tested models that included different shaped trajectories (intercept, linear, quadratic) and compared the model fit again. After determining the best shaped trajectories for husbands and wives within each trajectory group, the final model fixed each trajectory to the best fit of intercept, linear, or quadratic shapes. It should be noted that not all individuals who fit into a trajectory group have exactly the same trajectories; the trajectory membership is based on having the highest probability of belonging to that particular group.

Sociodemographic and Life Course Covariates. Next, logistic regressions were used to assess whether trajectory group membership varied by sociodemographic variables in Year 1. Four separate trajectory membership variables were created for each of the four work hour trajectories. Participants were assigned a 1 if they belonged to that trajectory and a 0 if they did not belong to that trajectory. Predictors included age at marriage, race, education, household income, months of cohabitation, and number of children in Year 1. Means were created from husband and wife's responses of household income, months of cohabitation, and number of children. All continuous predictors were centered. Separate logistic regression models were estimated in IBM SPSS Statistics 22.

Predicting change in individual outcomes and moderation analysis. Multilevel growth curve models with separate intercepts for husband and wife were estimated in IBM SPSS Statistics 22 to examine whether changes in marital happiness and depression over time varied by couples' work hour trajectories. The major advantage of using growth curve analysis is that both couple-level and individual-level effects can be simultaneously analyzed to determine

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whether couples' work hour trajectory membership predicted changes in individual depression, marital happiness, and marital tension. A two-intercept model allows for interpreting husband and wife effects separately while taking into account the couple context. The models were estimated in several steps. The first step included the predictors of time, age, race, education, household income, months of cohabitation, and number of children. Age, education, household income, and number of children were included as time-varying covariates. Race and the couple's months of cohabitation were fixed covariates. The second step included the work hour trajectory groups. Work hour trajectories were dummy-coded with consistent dual-workers as the reference group. This step also included work hour trajectory group x time in order to test the hypotheses of whether the effects of trajectory membership changed over time in predicting depression and marital happiness. The third step was the moderation analysis conducted separately with number of children by time and job satisfaction by time. Continuous predictors were grand-mean centered.

Results

Descriptives

Table 2.2 describes the means of work hours from Years 1 to 16 for husbands and wives. The average work hours among husbands across the years ranged from 43.49 to 45.15, thus husbands on average worked full time over 16 years. The average work hours among wives ranged from 23.08 to 26.87, indicating that wives on average worked part time over 16 years. Paired sample t-tests were conducted to examine gender differences. Wives reported significantly fewer work hours at each year (Table 2.2). It should be noted that the standard deviations for wives were larger than for husbands in every year, suggesting that there was more variability among wives' work hours from not working at all to working full time.

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Average Trajectories of Work Hours over Time

A model with one trajectory group for couples was estimated to identify an average

trajectory of husbands' and wives' work hours over time. This single couple-level trajectory was

characterized by husbands working full time in Year 1 ($M = 43.77$, $SE = .613$, $p < .001$) with no

change over time ($b = .12$, $SE = .093$, $p = .199$), and wives working part time in Year 1 ($M =$

24.78, $SE = .964$, $p < .001$) with no change over time ($b = .05$, $SE = .134$; $p = .716$). However,

analysis with a greater number of trajectories revealed that this was not the best fitting model.

Variations in Trajectories of Work Hours over Time

The number of trajectories was increased to find the best fitting model and to determine

whether couples fit into multiple work hour trajectories (Table 2.4). Although the BIC for the

model with three trajectory groups did not fit better than the model with two classes, a model

with four classes was estimated. Reasons to test for more classes included the hypothesis that

there would be more qualitatively different couples' work hour trajectories based on the

literature. In addition, the model with three classes fit well according to the average posterior

probability, odds of correct classification, the proportion of incorrect classification, and that each

of the groups included at least 5% of participants. According to the BIC and multiple fit indices

(including the bootstrapped parametric likelihood ratio test), the model with four classes had a

better fit than the models with fewer classes. The model with five classes was excluded because

it included a class with fewer than 5% of the participants.

The shapes of the trajectories were then determined, revealing that the intercept and

quadratic shapes had the best fit for husbands' and wives' work hour trajectories. As shown in

Table 2.5 and in Figure 2.2, the model with four classes revealed that couples varied widely in

the number of hours worked at the beginning of marriage, whether husbands and wives had similar work hours, and whether and how husbands' and wives' work hours changed over time.

The four groups included 1) couples who were consistent dual-workers, characterized by both husband and wife consistently working full time (40.3%); 2) single-worker families, characterized by the husband consistently working full time and the wife consistently not working (11.6%), 3) couples with a traditional working wife, characterized by both husband and wife starting full time with wife decreasing then increasing work hours over time (23.6%), and 4) couples with a late employed wife, characterized by the husband consistently working full time and the wife gradually increasing to work full time over the course of marriage (24.4%).

Consistent with Hypothesis 1a, the trajectories included couples in which both spouses worked full time at the beginning of marriage (i.e., consistent dual-workers and couples with a traditional working wife) and couples in which husband worked full time and wife did not work at the beginning of marriage (i.e., single-worker families and couples with a late employed wife). However, a trajectory where husbands worked full time and wife worked part time at the beginning of marriage was not found. Hypothesis 1b predicted that there would be gender differences in how work hours changed over time for husbands and wives. Findings revealed that husbands worked full time in all four trajectories with no change over time, whereas wives in two trajectories, the consistent dual-workers and single-worker families, experienced no change over time, and wives in the trajectory with a traditional working wife experienced a decrease then an increase in work hours. There was also a fourth trajectory that was not hypothesized, which included wives who experienced an increase in work hours over time. Consistent with my general hypothesis, wives showed more variations in work hours compared to husbands both at the beginning of marriage and in how they changed over time.

Sociodemographic and Life Course Covariates Associated with Work Hour Trajectories

I then examined whether couples' work hour trajectory membership varied by Year 1 individual and couple-level sociodemographic variables in logistic regression models. Models revealed that race, household income, and number of children varied by trajectory groups (Table 2.6). Compared to the other three trajectories, consistent dual-workers were more likely to be Black ($B = .59$, *S.E.* $= .27$, *O.R.* $= .03$, $p < .05$), more likely to have higher household income ($B = 2.44$, *S.E.* $= .62$, *O.R.* $= 11.52$, $p < .001$), and less likely to have children in Year 1 ($B = -.39$, *S.E.* $= .19$, *O.R.* $= .68$, $p < .05$). Compared to the other three trajectories, couples in the single-worker family trajectory were less likely to be Black ($B = -.93$, *S.E.* $= .43$, *O.R.* $= .40$, $p < .05$). Compared to the other three trajectories, couples in the late employed wife trajectory were less likely to have higher household income ($B = -2.73$, *S.E.* $= .65$, *O.R.* $= .07$, $p < .001$) and more likely to have a greater number of children in Year 1 ($B = .40$, *S.E.* $= .19$, *O.R.* $= 1.48$, $p < .05$).

Marital Happiness and Depression as a Function of Work Hour Trajectories

Marital Happiness. Table 2.7 shows the multilevel growth curve analysis of work hour trajectory on marital happiness. Compared to husbands in the trajectory with consistent dual-workers, husbands in the trajectory with a late employed wife reported lower marital happiness over time ($B = .15$, *S.E.* $= .05$, $p < .01$), which does not support Hypothesis 2 that spouses with discrepant work hours would report greater marital happiness.

Number of children as a moderator. From the covariates model, the findings showed that husbands ($B = -.04$, *S.E.* $= .02$, $p < .05$) and wives ($B = -.05$, *S.E.* $= .02$, $p < .01$) with more children reported lower marital happiness at Year 1. There was a significant interaction between work hour trajectories and number of children when predicting changes in husbands' and wives' marital happiness over time, which suggests a possible exacerbating effect of having more

children over time for couples in the late employed wife trajectory. As Figure 2.3 shows, couples in the consistent dual-workers trajectory who have more children reported lower marital happiness. Over time, these couples experienced a buffer in declines in marital happiness, whereas couples in the late employed wife trajectory who have more children experienced greater declines in marital happiness over time. Partially consistent with Hypothesis 3, couples in the late employed wife trajectory, meaning wives did not decrease work hours and instead increased work hours, who have more children reported lower marital happiness over time.

Job satisfaction as a moderator. A total of 341 (91.4%) husbands and 236 (63.3%) wives indicated that they were working in Year 1. Table 2.8 shows that there was an interaction among work hour trajectory and job satisfaction and time (Step 3b), which suggests a buffering effect of job satisfaction for husbands in the late employed wife trajectory. As shown in Figure 2.4, greater job satisfaction buffers the decline in marital happiness for husbands in the late employed wife trajectory compared to those in the consistent dual-workers trajectory. This finding partially supports Hypothesis 4, such that higher job satisfaction was related to a more positive outcome (less declines in marital happiness).

Depression

Table 2.9 shows that the multilevel growth curve analysis of work hour trajectory on depression. There were no significant findings for the associations between work hour trajectories and depression over time, as well as moderations with children over time.

Job satisfaction as a moderator. Table 2.10 shows that there were significant interactions between work hour trajectories and job satisfaction over time in predicting changes in depression for husbands (Step 3b). As Figures 2.5 and 2.6 show, greater job satisfaction buffers the increase in depression for husbands in the traditional work wife trajectory and for

husbands in the late employed wife trajectory compared to husbands in the consistent dual-workers trajectory. These findings indicate that having high job satisfaction over time can be a protective factor on depression, and thus are consistent with Hypothesis 4 which suggested that husbands who remain full time and have higher job satisfaction would report lower depression.

Post-hoc analysis

Exploratory descriptives on work status among wives. Because the trajectory with a late employed wife was not expected, I examined the work status and work hours of wives from Years 1 to 16 separately by trajectory group to understand the trajectory groups further. Only wives' data are shown for simplicity because husbands work hours did not change over time. According to Table 2.10, wives in the late employed wife trajectory began their marriages in a variety of job statuses, including working, unemployed, homemaker, and maternity. Over time, some of the wives who did not work at the beginning of the marriage obtained full-time jobs thus increasing the trajectory group's average work hours. By Year 16, only working wives are left in the trajectory group.

Work hour trajectories of couples who remained married. To determine the divorce status of couples, a *divorce status* variable was created from marital status in Year 16 with 0 (*married*) and 1 (*divorced*). The divorce percentages of each work hour trajectory were 47.1% for couples in the consistent dual-workers trajectory, 33.8% in the traditional working wife trajectory, 37.8% in the single-worker family trajectory, and 62.2% in the late employed wife trajectory. Logistic regressions were estimated to determine whether work hour trajectory membership was associated with divorce. Controlling for each spouse's age at marriage, each spouse's education in Year 1, and couples' race, household income, months of cohabitation, and number of children at Year 1, findings revealed that couples in the single-worker trajectory were

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less likely to divorce ($B = -.94$, $S.E. = .41$, $O.R. = .39$, $p < .05$).

Work hour trajectories may be influenced by couples who dropped out due to divorce. Therefore, work hour trajectories of couples who did not divorce (n = 179) were estimated to understand whether trajectories differ for those who remained married throughout 16 years. Based on multiple fit indices, I found that couples who remained married had two distinct work hour trajectories (see Figure 2.7). One hundred and twenty-one couples (67.6%) had husbands who started full time and did not change over time ($B = 43.28$, $S.E. = .87$, $p < .001$) and wives who started part time ($B = 28.98$, $S.E. = 1.93$, $p < .001$) and had a quadratic change over time ($B = .10$, $S.E. = .04$, $p < .05$), similar to the trajectory with traditional working wives. Fifty-eight couples (32.4%) had husbands who started full time and did not change over time ($B = 46.55$, $S.E. = 1.35$, $p < .001$) and wives who started part time ($B = 26.61$, $S.E. = 2.71$, $p < .001$) and had a significant linear decrease over time ($B = -3.19$, $S.E. = .85$, $p < .001$), indicating a trend from dual-workers to being a single-worker family.

Overall, the number of trajectories differed when couples who divorced were excluded, resulting in two trajectories. However, husbands' work hour trajectories remained similar (full time with no change over time). For wives, although the intercepts and shapes of trajectories were different, the work hour trajectories for wives who remained married seem comparable to the trajectories of traditional working wife and a change from being dual-workers to a single-worker family. Wives who remained married, on average, worked at the beginning of marriage, and reduced work hours over time. The difference is one group of wives later returned to work and the other group stopped working altogether.

Discussion

The purpose of this study was to identify and describe couples' work hour trajectories over the first 16 years of marriage. This study contributes to the literature by investigating work hour trajectories of both husband and wife beginning in the young newlywed years through to midlife and examining the distinct implications of work hour trajectories on changes in marital happiness and depression. The convoy model of social relations for couples served as a guiding framework to test the research questions.

Trajectories of Work Hours

I first examined the average levels of work hours among couples at the beginning of marriage and whether there was an average change in work hours over time. Husbands on average started marriage working full time with no change over time, and wives on average started marriage working part time with no change over time. Given the heterogeneity of work arrangements that couples experience to accommodate different lifestyles, it was clear that a more complex picture of work hour trajectories was needed to illustrate the development of couples' work hours over time.

Couples fit into four distinct work hour trajectories that varied in the initial number of hours and in their change over time. This finding is unique in that it captures not only an individual's work trajectory but how that individual's work changes in parallel with his or her spouse's work. Consistent with my hypothesis, wives showed more variations than husbands in work hours at the beginning of marriage and over time. Three trajectories were recognizable from the literature and societal norms in Midwestern United States in the 1980s. The first trajectory was couples who were consistent dual-workers in which husband and wife both reported working full time and showed no significant change over time. The second trajectory

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was single-worker families in which the husband reported working full time and showed no change over time, whereas the wife did not work and showed no change over time. Both these trajectories are consistent with statistics which indicate that dual-working couples and single-worker families are the two largest types of married households in the United States (Advisers, 2014). The third trajectory was labeled as couples with a traditional working wife because these couples also started marriage as a dual-working couple, but over time, the wife decreased her work hours before returning to work in the later years. Husbands, on the other hand, worked full time and reported no change over time. This trajectory is consistent with the literature where wives reduce their work hours, for example, to have and care for small children but then return to work when the children are older (Smith et al., 2001).

In addition to the three trajectories, I found one trajectory that had not been previously identified in the literature and uniquely benefits from long term longitudinal data. This is an exciting finding because it shows that this study replicated and extended beyond previous research to describe couples' diverse work trajectories. The fourth trajectory was labeled as couples with a late employed wife. It was characterized by husbands who worked full time with no change over time, and wives who started marriage not working then gradually become employed full-time by Year 16. To further understand couples in this trajectory, I examined the work status and work hours of wives in each trajectory group. It was interesting to discover that wives in the late employed wife trajectory had the greatest variety in work statuses in Year 1 of marriage, including unemployed and homemaker. Over time, many of the wives in this trajectory dropped out of the study and those who remained in Year 16 were all working. Because this trajectory had the highest percentage of divorce, it is difficult to decipher whether wives gaining employment was associated with staying married, or rather wives who did not become employed

had higher divorce risk. As a result, I conducted another post-hoc analysis to determine couples' work hour trajectories among only couples who remained married over 16 years to see if the same trajectories could be identified. Only two work hour trajectories were identified and those trajectories were similar to the trajectories with a traditional working wife and a combination of dual-workers to single-worker family. Hence, it is likely that the trajectory with late employed wife is a unique trajectory that can be identified as couples who might have higher divorce risk. Future research can benefit from a newly emerging method to conduct latent class growth analysis with hazard models which will uniquely address this research question.

Factors Associated with Work Hour Trajectory Membership

The examination of sociodemographic and life course covariates in the first years of marriage indicated that they were associated with work hour trajectory membership. Race, household income, and the number of children were found to vary by trajectories. Consistent with the literature that Black wives traditionally are employed and more likely to work than White wives (Hayghe, 1983), couples in the consistent dual-worker trajectory were more likely to be Black and couples in the single-worker family trajectory were more likely to be White. This finding suggests that race, gender roles, and social class are intertwined. This intersectionality is likely to have a significant effect on couples' work-life trajectories. Future research can focus on how intersectionality plays a role in couples' work-life trajectories, including potential differences at the beginning of marriage that foreshadow specific trajectories.

Couples in the late employed wife trajectory were less likely to have higher household income and were more likely to have a greater number of children in the first year of marriage. Perhaps couples in the late employed wife trajectory are more vulnerable to stressors. Having more children at the beginning of marriage may increase financial need as they grow up, which

can explain why wives work full time in the later years. Wives may also have more time to return to work after the children grow older. These couples might also have low-wage occupations, thus both husband and wife would have to work due to financial need.

Implications of Work Hour Trajectories on Marital Happiness and Depression

Using the convoy model of social relations for couples as a guiding framework, couples' work context over time could influence changes in marital relationship quality and individual health. This study examined the associations between work hour trajectories and marital happiness and depression over time. There was one significant finding between work hour trajectory and marital happiness over time. Husbands in the late employed wife trajectory reported lower marital happiness over time compared to husbands in the consistent dual-workers trajectory. This finding did not support the original hypothesis that discrepant work hours between spouses would lead to greater marital happiness. A potential explanation for this finding is that although spouses in the late employed wife had discrepant work hours at the beginning of marriage, wives increased work hours over time which reduced the discrepancy. When both spouses are employed, there may be more pressure on the couple to cope with work and family demands. The division of labor in the household would also shift with increased stress for husbands. Research has found that more work hours among wives is associated with lower marital satisfaction among husbands due to the decreased satisfaction in how household tasks are managed (Stevens, Kiger, & Riley, 2001). In addition, wives not working at the beginning of marriage may have suited the gender role expectations of a single-worker family with a sole-income-earning husband and stay-at-home wife in the 1980s. Those expectations would be violated as wives begin to work full time.

To further delineate the association between work hour trajectories and marital happiness and depression, the number of children and job satisfaction were examined as potential moderators. First, having more children over time seemed to be a detrimental factor for husbands and wives in the late employed wife trajectory compared to those in the consistent dual-workers trajectory as they reported greater declines, rather than buffers in the decline, in marital happiness. These findings are consistent with the literature which suggests that wives often adapt their work contexts accordingly, namely by reducing work hours, when the couple has more children. Husbands in the late employed wife trajectory may have reported greater declines in marital happiness over time because their wives increased, instead of decreased, work hours which limits the ability help with childcare at home. Both husbands and wives may experience late employment among wives as an indicator of financial struggles, rather than an opportunity for wives' self-development.

Job satisfaction, on the other hand, seemed to be beneficial for husbands in the late employed wife trajectory and the traditional working wife trajectory as they reported increases in marital happiness and decreases in depression. Although job satisfaction could contribute to positive spillover (e.g., better mood) from work to home (Barnett & Hyde, 2001), it is important to note that both these trajectories start off marriage with wives not working. Thus, in addition to positive job conditions, the couples' work-family arrangements that allow husbands to work full time without change over time may play a significant role in determining the husbands' changes in marital happiness and depression.

Conclusions and Limitations

These findings extend current literature by examining work hours of both spouses beyond one point in time and by showing that work hour trajectories are differentially linked to marital

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happiness and depression. Interestingly, the findings have all been related to husbands (with one exception) even though husbands started marriage working full time and did not change over time. This point highlights the significant implications of considering couples' work-family context and spouses' linked lives because it is in the variations of wives' work hours that we see the nuances and complexities of couples' trajectories.

There are several limitations to consider. First, the time between data points are uneven. It is unclear what happens from Years 3 to 7 and from Years 7 to 16. Work hour trajectories may reveal different patterns. With closer time points, we may expect to find a trajectory with wives who quickly returned to work after taking time off (e.g., for maternity leave). Second, there is an issue with differentiating between attrition and couples who divorced. In particular, the trajectory with late employed wife experienced greatest reduction in sample size by Year 16. However, it can also be the case that it tells us something about that trajectory, for example, couples in that trajectory may have increased risk factors at the beginning of marriage. Third, trajectories may change after 16 years. From midlife to late adulthood, work-family contexts may develop differently based on couples' (e.g., health) and family needs (e.g., elder caregiving). The second study hopes to shed light on couples' work trajectories during midlife to later adulthood. Future work can also consider cross-cultural perspectives. The sample in this study was from Midwestern counties in the United States in 1986 and may be representative of a part of American households. Couples' work hour trajectories may look very different in other cultural contexts. For example, Germany heavily subsidizes child care for young infants, therefore mothers return to work rather quickly after maternity leave rather than stay at home for long periods of time. I hope this study is just the beginning of a series of studies that help uncover the complexity of couples' work and family development over the life course.

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CHAPTER III

Couples' Work Hour Trajectories from Midlife to Old Age

Introduction

The central tenant of lifespan/life course perspectives is that development occurs throughout life from birth to death (Baltes & Smith, 2004; Elder, 1998). The majority of research on work and family has focused on young adulthood and the formation of family and careers. Relatively little attention has been paid to work and family development among middle-aged and older adults (Allen & Shockley, 2012). Younger and older couples' experiences of work and family can vary greatly. For example, the presence of young children may affect younger couples' work-family conflict, whereas the provision of eldercare may affect older couples' work-family conflict. In addition, the focus tends to shift from careers and family formation to focusing on health and lifestyle maintenance as couples grow older. It is important to look beyond the early marital years as spouses age together to examine their work-family contexts in midlife and late adulthood, especially with increased longevity and work histories that continue into later life. The second study of this dissertation examines work hour trajectories among midlife and older couples and their associations with health over time. The following sections of this chapter highlights the importance of understanding the work and family contexts of midlife and older couples, describes the procedures and results of a longitudinal study examining a nationally representative group of married couples aged 51 and over in the United States, and

discusses the findings in relation to the convoy model of social relations for couples and the lifespan/life course developmental perspectives.

Work in Midlife and Old Age

Population aging is one of the greatest global social transformations facing the world today. We will be experiencing the most rapid and dramatic demographic change in history when the number of older adults exceeds the number of children within the next decade. By 2022, thirty-eight percent of U.S. residents will be over age 55 (Toossi, 2013). During the past 15 years, there has been a rise in older adults working in their 60s and 70s (Gendell, 2008). Midlife and older couples have continued to work due to marked improvement in health and technology, the economic recession and lost retirement savings, and the pressure to continue supporting family. Roughly 40% of workers expect to postpone retirement and continue working due to their financial situations (Metlife, 2014). This trend is shown in the increasing retirement age from 57 in 1993 to 60 between 2002-2012 to 62 for women and 64 for men in 2013 (Riffkin, 2014). Couples have to adapt their strategies to cope with family needs in order to accommodate this lengthened time in the labor force.

In the 1950s, workers were expected to retire and stop working around the age of 60. Now, retirement can take on many forms. Retirement can be sudden from working full time of 40 hours per week to 0 hours per week as is the case in mandatory retirement. Retirement can also be gradual through bridge jobs or reduction in hours worked. Sixty-four percent of workers envision a gradual retirement, whereas only 22% expect to fully retire immediately (Collinson, 2014). Workers can also retire from one career and start a second one. Among workers aged 40-59, thirty-two percent have made a career shift (Thayer, 2014). Rather than a clear cut retirement point, there is much heterogeneity of work histories among midlife and older workers. This study

aims to highlight that heterogeneity by examining work hour trajectories starting in midlife and continuing over 14 years.

Gender Roles over the Past Decades

There has been increasing heterogeneity in work-family development over the last few decades. Men were expected to work and support the family financially, whereas women mainly supported the family at home. Couples were expected to start a family, raise the children until they leave home, and then retire. With the civil rights movement, equal education and employment opportunities, war and increased labor market needs, there was a significant increase in women entering the workforce. This marked an important time in U.S. history because it shifted societal views on gender roles. Whereas women's employment used to be based on their husbands' ability to provide, marriage no longer predicts whether women are in the labor force (Moen & Bureau, 2001). Working women have increased self-sufficiency and financial independence, and they can also have multiple roles, interests, and identities out of the home that can be beneficial to them and their families (Barnett & Hyde, 2001). This gendered view of careers can influence couples' work-family arrangements over time.

To determine gender differences in work trajectories, this study examines work hours of both husbands and wives from midlife to old age. Based on the literature indicating heterogeneity of work in midlife and old age, I predicted that there will be different types of work hour trajectories for midlife and older married couples. I predicted that some husbands and wives will have similar work hours (e.g., both full time), whereas others will have discrepant work hours (e.g., one working and one retired). These trajectories will include dual-working couples which is the current norm in society, single-worker families with husbands as the main financial provider which was the norm, and part-time workers for those who are partly retired

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which is expected as workers age. Because husbands were expected to work and wives may be in or out of the labor force, I also predicted that there will be more variation among wives' work hours compared to husbands. Over time, it is expected that work hours will decrease for both husbands and wives as they move toward retirement.

Sociodemographic and Life Course Covariates Associated with Work Hour Trajectories

Apart from describing the work hour trajectories of married midlife and older couples, it is also important to consider what kinds of couples fall into each trajectory. Sociodemographic factors, such as age and education, may be associated with greater opportunities in the labor force and better health both of which are associated with working for a longer period of time. These sociodemographic characteristics are, therefore, most likely to be associated with belonging to trajectories in which both spouses are working. Household income and wealth are indicators of couples' financial situation and would be related to decreased participation in the labor force. Life course factors, such as number of children, may be associated with lower labor force participation particularly for wives as they may have stayed at home to care for their children and not returned to work (Smith, Downs, & O'connell, 2001). These characteristics would, therefore, most likely be associated with trajectories in which only the husband is working. Race may also be linked to work hour trajectory membership because Black couples are more likely to have wives in the labor force compared to White couples (Hayghe, 1983). Black couples are also less likely to have savings for retirement, thus Black couples could be more likely to be in trajectories with both spouses continuing to work. This study explores whether these important sociodemographic and life course factors are associated with midlife and older couples' work hour trajectory membership.

Importance of Health Outcomes in Midlife and Old Age

To the extent that diverse work hour trajectories exist among married midlife and older couples, the current study can go beyond prior studies that examine individuals' average work history toward retirement. Couples' work hour trajectories provide valuable information on how individuals within couples change work hours over the course of marriage in midlife and old age in relation to their spouse. As shown in the convoy model of social relations for couples in midlife and old age (Figure 3.1), couples' contextual characteristics such as work hours can directly influence physical and psychological health outcomes. Whereas younger to midlife couples focus on family and career formation without significant health concerns, midlife to older couples have to balance work and family responsibilities while also considering health maintenance and regulation of declines in health (Baltes & Smith, 2004). Health issues also strongly affect the ability to continue working. Within the context of midlife and older couples, it is likely that a large proportion of stressful situations encountered in daily life involve the well-being of one or both of the partners. Because health becomes an increasing concern in midlife and old age, this study focuses on changes in physical and psychological health outcomes, namely self-rated health and depression, and how couples' work hour trajectories could be associated with those changes.

Health plays an important role in the work and family context of midlife and older couples for two reasons. Spouses with worse physical health may not be able to work, which could be associated with worse psychological health if they did not expect to retire early or if they enjoyed working. Work participation can also keep spouses healthy physically by keeping them active and psychologically by providing a network of support at work. Leaving the workforce may lead to worse psychological health due to the loss of close contact with

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colleagues (Cozijnsen, Stevens, & Van Tilburg, 2010). Coordinating retirement with the spouse becomes an important factor, as he or she could provide the social support needed to adjust to nonwork life. Research has found that spending time with a nonworking spouse may reduce stress related to retiring and can be a protective factor for health (Wang, 2007). Based on the retirement transition literature, it was predicted that spouses with discrepant declines in work hours (e.g., one retires sooner than the other) will report less declines in physical and psychological health due to the availability of social support from the retired spouse compared to spouses with similar declines in work hours.

Potential Moderators of Work Hour Trajectories and Health

Caregiving. As the convoy model for midlife and older couples indicates (Figure 3.1), there are important characteristics that can influence the association between couples' work context and individual health outcomes. Caregiving is often discussed as a major factor that influences couples' work-family arrangements. Research has focused on couples with young children, but caregiving also occurs through midlife and old age. Midlife and older adults may have to care for elderly parents, adult children, and grandchildren. Those who care for both elderly parents and the younger generation are sometimes called the "sandwiched generation" as they are in between two generations who need support at the same time (Eggebeen, 1992). Whereas childcare is the main focus of caregiving among younger couples, eldercare becomes increasingly common from midlife to old age and includes caring for parents, siblings, and spouse. 43.5 million adult caregivers care for someone aged 50 and older (Anderson, 2004; Thies & Bleiler, 2011). If these caregivers also have to work, time spent on caregiving may conflict with the caregiver's work and add to the caregiver's stress. There are many types of eldercare, including financial assistance and instrumental assistance with daily living (e.g., bathing) and

household tasks (e.g., groceries). Sixty-two percent of workers aged 50 and over provide some financial support to the family, including to elder parents (Lynch, 2013b). Strikingly, ten percent of retirees indicated that they retired to look after family (Lynch, 2013a) and the number of hours spent on caregiving increases with the age of the caregiver (Anderson, 2004; Thies & Bleiler, 2011). These findings suggest that time spent to provide care for parents may directly conflict with work demands particularly when the parents' health declines with age. Couples who successfully negotiate their work-family arrangements to adapt to caregiving needs may have better health. For example, couples with one spouse who works fewer hours or does not work might be able to cope with the stresses of caregiving better than couples in which both spouses are employed. Thus although providing caregiving assistance was predicted to exacerbate health declines, this decline could be buffered for couples with discrepant work hours as the spouse who works fewer hours or does not work might be able to take on more of the caregiving tasks. Therefore, I hypothesized that spouses with discrepant declines in work hours and who provide parental caregiving will report less declines in health than spouses who have similar declines in work hours and provide parental caregiving.

Job Conditions. There are many reasons why individuals continue to work or stop working in midlife and old age. Experiencing health declines or disability may significantly affect the ability to work, which is particularly the case for occupations with high physical demands. There could be mandatory retirement, for example, for police and firefighters. Experiences and social support at work could also play important roles in deciding whether or not to continue working. Job satisfaction is a major reason that individuals would like to continue working at their current job (Interactive, 2012). Among couples, spouses may differ in work histories and timing of retirement. Although research has found that having a nonworking spouse

at home may reduce stress related to retirement and is protective for health (Wang, 2007), having high job satisfaction may reduce this benefit because the working spouse may lose the meaningfulness achieved from working as well as the social support at work. Therefore, it was predicted that spouses with discrepant declines in work hours and higher job satisfaction would report greater declines in health compared to spouses with discrepant declines in work hours and lower job satisfaction.

Present Study

This study examines work hour trajectories among a nationally representative sample of midlife and older couples in the United States, and whether these trajectories are differentially associated with physical and psychological health. Based on the work and family literature, the retirement transition literature, and gender role differences in work and family, I outlined the following hypotheses.

Hypothesis 1a: Some husbands and wives will have similar work hours (e.g., both full time) at Wave 1, whereas others will have discrepant work hours (e.g., one working and one retired). Trajectories will include dual-workers, single-worker families, and part-time workers, with more variations among wives than husbands.

Hypothesis 1b: Work hours will decrease for all couples' trajectories over time as they move from employment to retirement.

To the extent that qualitatively different work hour trajectories are identified, I predicted that the trajectories will be associated with physical and psychological health.

Hypothesis 2: Spouses with discrepant declines in work hours over time will report less declines in self-rated health and lower depression over time compared to spouses who have similar declines in work hours.

These associations are predicted to be moderated by caregiving provision and job satisfaction.

Hypothesis 3: Spouses with discrepant declines in work hours who provided parental caregiving will report less declines in self-rated health and lower depression over time compared to spouses with similar declines in work hours providing parental caregiving.

Hypothesis 4: Spouses with discrepant declines in work hours and higher job satisfaction will report greater declines in self-rated health and greater depression over time compared to spouses with discrepant declines in work hours and lower job satisfaction.

Method

Participants

Participants were from the Health and Retirement Study (HRS) that began in 1992. The HRS is a nationally representative longitudinal study of Americans aged 51 and above (cohort 1931-41 only), as well as their spouses (regardless of age). Data from the fourth to eleventh waves (1998-2012) were analyzed because AHEAD (cohort born in 1923 or before) and HRS were merged into the same study in 1998 and additional cohorts were added, meaning that all participants were asked questions that were worded in the same way. For this study, data from 1998 will be indicated as Wave 1.

Of the 21384 cases in 1998, this study examined data from 9410 heterosexual married couples in which both husband and wife were aged 51 and over, both provided their own responses at Wave 1 (i.e., not answered by proxy), and reported work hours at Wave 1. Husbands who were working over 96 hours per week and wives who were working over 84 hours per week (3SD from the mean) at Wave 1 were excluded due to extreme outliers such as 140 hours per week that may skew the data. The resulting sample has 3282 participants (1641

couples), an average age of 59.3 years ($SD = 5.8$; range = 51-89), and on average 12.8 years of education ($SD = 3.0$; range = 0-17). Ethnicity was 88% Caucasian. Couples were on average married for 32.03 years at Wave 1 ($SD = 11.3$; range = 0.1-68.5).

Attrition

The response rates of the 3282 participants for work hours varied across waves with an average of 82% of the original sample participating (range 66-93%; calculated by dividing the number of responses for work hours per year by the number of responses in the first year) (Table 3.1). The response rates decreased over time due to couples' separation or divorce, widowhood, and attrition. The response rate for Time 8 was 66% for husbands and 74% for wives.

Of the 3282 participants, 3040 (92.6%) participated in Wave 2, 2950 (89.9%) participated in Wave 3, and 2839 (86.5%) participated in Wave 4, 2700 (82.3%) participated in Wave 5, 2608 (79.5%) participated in Wave 6, 2459 (74.9%) participated in Wave 7, and 2303 (70.2%) participated in Wave 8. To examine longitudinal selectivity of reporting work hours, I examined whether a series of variables assessed in Wave 1 including age, race, education, household income, wealth, and number of children predicted the number of waves of work hours completed. Table 3.2 presents the age at assessment, as well as means and standard deviations for work hours and Wave 1 covariates separately for husbands and wives. White husbands ($F(7,1631) = 2.162$, $p = .035$), younger husbands at Wave 1 ($b = -.080$, $S.E. = .008$, $p < .001$), younger wives at Wave 1 ($b = -.046$, $S.E. = .008$, $p < .001$), husbands with more education ($b = .035$, $S.E. = .016$, $p = .031$), wives with more education ($b = .054$, $S.E. = .017$, $p = .001$) completed more waves of data.

Measures

Unless otherwise indicated, data were retrieved from RAND HRS Data file which

included cross-wave variables from 1998-2012. It is a cleaned version of the longitudinal data including imputations of wealth and income.

Dependent variables. *Self-rated health* was measured with one item "Would you say your health is excellent, very good, good, fair, or poor?" on a 5-point scale from 1 (*excellent*) to 5 (*poor*). The item was recoded such that a larger number indicated better health.

Depression was measured with 8 items from the Center for Epidemiologic Studies Depression Scale (CESD). Participants responded 1 (*yes*) or 0 (*no*) to 8 items, including whether participants felt depressed, felt that everything was an effort, their sleep was restless, they were happy, felt lonely, felt sad, could not get going, and enjoyed life. Items were summed such that a larger number indicated greater depression (Steffick, 2000).

Independent variables. Participants were asked about their work hours at their main job and second job (if applicable) at each wave. A summary *work hours per week* variable was created as a summation of work hours of main and second jobs. Participants were allowed to have multiple responses (e.g., working and retired). Participants who responded that they were not working (e.g., homemaker, retired only) were coded as 0.

Moderators. Two moderators were created from raw data from 1998-2012. Among participants who indicated their parents were alive, they were asked two questions about whether they or their spouse spent a total of 100 or more hours assisting their parents in the last 2 years with basic personal activities (e.g., dressing, eating, and bathing) and other things (e.g., household chores, errands, and transportation). Responses were coded as 0 (*no*) and 1 (*yes*). If participants responded yes to either question, they were given a 1 (*yes*) in a *caregiving assistance* variable, and if they responded no to both questions, they were given a 0 (*no*).

Among participants who indicated they were working, their *job satisfaction* was

measured with one item "I really enjoy going to work. Do you (1) *strongly agree,* (2) *agree,* (3) *disagree,* and (4) *strongly disagree*?" This item was reverse-coded such that a larger number indicated greater job satisfaction.

   Sociodemographic covariates. Age was recorded at each data collection. Gender was coded as 0 (*husband*) and 1 (*wife*). Race was coded as 0 (*Other*) and 1 (*White*). *Education* was reported as highest grade of school or year of college that husbands and wives completed by the year of data collection truncated at 17 years. *Household income* and *total wealth* was imputed by RAND and reported by the financial respondent. The means of household income and wealth reported by husband and wife were calculated as couple-level covariates. Household income and wealth significantly violated the normality assumption, which was corrected with log transformations after adding a constant (1 for household income and 1000000 for wealth because participants had negative wealth). Participants reported on the *number of children* at each data collection, which referred to the number of living children including stepchildren.

   A marital status variable indicated whether participants were 1 'married,' 2 'married, spouse absent,' 3 'partnered, 4 'separated,' 5 'divorced,' 6 'separated/divorced,' and 7 'widowed.' *Widower status* was recoded from the marital status variable as 0 (*other*) and 1 (*widowed*). *Years of marriage at Wave 1* was defined as the number of years the couple was married in 1998. Time was centered on Wave 1 such that zero represented the first year (1998).

Analysis plan

   Trajectory modeling. Multilevel Latent Class Growth Models (LCGA) using Mplus Version 7.11 were used to examine whether couples reported different trajectories of work hours over time (e.g., both initially worked and remained full-time, both initially worked full-time and wife reduces to part-time, etc.). LCGA models identify trajectory groups and allow for the

assessment of individual differences within each developmental trajectories (Jung & Wickrama, 2008). Both husband and wife's work hours were included in the same model. Mplus uses a robust full-information maximum-likelihood (FIML) estimation for handling missing data and assumes missing data at random (MAR).

I first estimated a model with one trajectory group to estimate an average work hour trajectory for couples. Next, I estimated a series of LCGA models to find the optimal number of trajectory groups. Model adequacy was assessed with the following criteria. First, Bayesian information criterion (BIC) was used to examine goodness of fit where a change in Bayesian information criterion (BIC X2) greater than 2 (Jones, Nagin, & Roeder, 2001). Based on current literature, it is important to use additional fit indices beyond BIC (Muthén, 2004). The second criterion is that high values of entropy are preferred; however, it is not recommended to emphasize this value because entropy is by definition a function of the number of classes (Kreuter & Muthén, 2007). Third, the Vuong-Lo-Mendell-Rubin (VLMR) test and the bootstrapped parametric likelihood ratio test (BLRT) with p-values of less than 0.05, which means that the model with K classes has significantly better than that with K-1 classes. Fourth, the average posterior probability (AvePP) that an individual belongs to a trajectory group has to be at least .7. Fifth, the odds of correct classification (OCC) should be above 5 for each group. Sixth, the probability of group assignment compared to the actual proportion of individuals who fall into a group should be less than 50% (Nagin, 1999). Finally, each of the groups should include at least 5% of the participants (Lavner & Bradbury, 2010).

After determining the number of groups, I tested models that included different shaped trajectories (intercept, linear, quadratic) and compared the model fit again. After determining the best shaped trajectories for husbands and wives within each trajectory group, the final model

fixed each trajectory to the best fit of intercept, linear, or quadratic shapes. It is important to note that not all individuals who fit into a trajectory group have exactly the same trajectories; the trajectory membership is based on having the highest probability of belonging to that particular group.

Sociodemographic and Life Course Covariates. Next, separate logistic regressions were used to assess whether trajectory group membership varied by sociodemographic variables in Wave 1. Six separate trajectory membership variables were created for each of the six work hour trajectories. Participants were assigned a 1 if they belonged to that trajectory and a 0 if they did not belong to that trajectory. Predictors included age, race, education, household income, wealth, years of marriage, and number of children at Wave 1. Means were created from husband and wife's responses of months of cohabitation and number of children. All continuous predictors were centered. Logistic regression models were estimated in IBM SPSS Statistics 22.

Predicting change in individual outcomes and moderation analysis. Multilevel growth curve models with separate intercepts for husband and wife were estimated in IBM SPSS Statistics 22 to examine whether changes in self-rated health and depression varied by couples' work hour trajectories. The major advantage of using growth curve analysis is that both couple-level and individual-level effects can be simultaneously analyzed to determine whether couples' work hour trajectory membership predicted changes in individual depression, marital happiness, and marital tension. A two-intercept model allows for interpreting husband and wife effects separately while taking into account the nonindependent couple context. The models were estimated in several steps. The first step included time, age, race, education, household income, wealth, number of children, widower status, and years of marriage at Wave 1. Age, household income, wealth, number of children, and widower status were included as time-varying

covariates. Race, education, and years of marriage at Wave 1 were fixed covariates. The second

step included the work hour trajectory groups. Work hour trajectories were dummy-coded with

couples in the dual full-time to retirement trajectory as the reference group. This step also

included work hour trajectory group*time in order to test the hypotheses of whether the effects

of trajectory membership changes over time in predicting self-rated health and depression. The

third step was the moderation analysis conducted separately with time assistance by time and job

satisfaction by time. Continuous predictors were grand-mean centered.

Results

Descriptives

Table 3.1 describes the means of work hours from Wave 1 to Wave 8 for husbands and

wives over 14 years. The average work hours among husbands across the years ranged from

42.62 to 8.76, thus husbands on average reduced work hours over 14 years. The average work

hours among wives ranged from 22.48 to 5.25, indicating that wives on average reduced work

hours over 14 years. Paired sample t-tests were conducted to examine gender differences. Wives

reported significantly fewer work hours at each year (Table 3.1; *N* who worked in 2012 = 1086

husbands and 1217 wives).

Average Trajectories of Work Hours over Time

A model with one trajectory group for couples was estimated to identify the common

trajectory of work hours over time. This single couple-level trajectory was characterized by

husbands working full time at Wave 1 (*M* = 40.10, *SE* = .462, *p* < .001) with a linear decrease

over time (*b* = -2.43, *SE* = .042, *p* < .001), and wives working part time at Wave 1 (*M* = 22.37,

SE =.499, *p* < .001) with a linear decrease over time (*b* = -1.26, *SE* = .039; *p* < .001). However,

analysis with a greater number of trajectories revealed that this was not the best fitting model.

Variations in Trajectories of Work Hours over Time

The number of trajectories was increased to find the best fitting model and to determine whether couples fit into multiple work hour trajectories (Table 2.3). According to the BIC and multiple fit indices, the model with six classes had better fit than the models with fewer classes. The model with seven classes was excluded because it included a class with fewer than 5% of the participants. The shapes of the trajectories were then determined, revealing that the intercept and linear slopes had best fit for husbands' and wives' work hour trajectories. As shown in Table 3.4 and in Figure 3.2, the model with six classes revealed that couples varied widely in the number of hours worked at Wave 1, whether husbands and wives had similar work hours, whether and how husbands' and wives' work hours changed over 14 years, and whether husbands and wives stopped working at the same time.

The first four trajectories included husbands and wives who both worked full time at Wave 1. The first trajectory included husbands and wives who worked full time at Wave 1 and both decreased work hours significantly over time until both stopped working. This trajectory is marked by the similarity in the decline in work hours between husband and wife and that both husband and wife stopped working at the same time. This trajectory was labeled dual full-time to retirement couples (24.2%). The second trajectory, labeled as dual continuous workers, included husbands and wives who worked discrepant hours but both were full time at Wave 1 and decreased work hours over time but continued working (8.2%). Husbands and wives in this trajectory also had similar declines in work hours over time. The third trajectory included husbands and wives who worked full time at Wave 1. Over time, husbands significantly decreased work hours until they stopped working, whereas wives decreased work hours over time but continued working. This trajectory was labeled as couples with a retiring husband and

continuous working wife (7.6%) and is marked by a discrepant decline between husbands' and wives' work hours. The fourth trajectory, labeled as dual part-time to retirement couples, included husbands and wives who worked discrepant hours but both part time at Wave 1 and significantly decreased work hours over time until both were not working (11.6%). Although husbands and wives stopped working around the same time in this dual part-time to retirement trajectory, husbands and wives had discrepant declines in work hours. It is worth noting that the third and fourth trajectories included wives who worked a greater number of hours per week over time compared to their husbands. The fifth trajectory included husbands who worked full time at Wave 1 and decreased work hours over time, and wives who on average worked a few hours at Wave 1 and decreased over time until both were not working (37.6%). This trajectory was labeled as couples with a retiring husband and minimally working wife. They had discrepant work hours at Year 1 and discrepant declines in work hours over time. It is interesting to note that like the first trajectory, husbands and wives in the fourth and fifth trajectories stopped working around the same time. Finally, the sixth trajectory included husbands who worked full time at Wave 1 and decreased work hours over time but continued working, and wives on average who worked a few hours at Wave 1 and decreased work hours over time until they were not working (10.8%). This trajectory was labeled as couples with a continuous working husband and minimally working wives. They had discrepant work hours in Wave 1 but similar declining work hour slopes over time. Consistent with the first hypothesis, couples showed variation in work hours at Wave 1 with some dual-workers, some spouses working part-time, and some spouses not working. Couples also decreased work hours over time as predicted, and some spouses had similar declines in work hours as their partners whereas other spouses had different slopes of declines.

Sociodemographic and Life Course Covariates Associated with Work Hour Trajectories

I then examined whether couples' work hour trajectory membership varied by Wave 1 individual and couple-level sociodemographic variables in logistic regression models. Models revealed that age, education, years of marriage, children, household income, and wealth at Wave 1 varied by trajectory groups (Table 3.5). Wives who were younger, wives with more education, couples with more children, couples with higher household income, and couples with lower wealth were more likely to be in the dual full-time to retirement trajectory. Husbands and wives who were younger and wives with more education were more likely to be in the dual continuous workers trajectory. Wives who were younger, wives with more education, couples who were married for fewer years, and couples with lower wealth were more likely to be in retiring husband/continuous working wife trajectory. Husbands who were older, wives who were younger, and couples with lower household income were more likely to be in the dual part-time to retirement trajectory. Husbands who were younger, wives who were older, wives with less education, couples who were married for longer at Wave 1, and couples with greater wealth were more likely to be in the husband working to retirement trajectory. Husbands who were younger, husbands with more education, wives with less education, and couples with more children were more likely to be in the continuous working husband trajectory.

Self-rated Health and Depression as a Function of Work Hour Trajectories

Self-rated Health. Next, I examined whether self-rated health at Wave 1 and changes in self-rated health varied by couples' work hour trajectories. Couples' work hour trajectories were compared against couples in the dual full-time to retirement trajectory.

Table 3.6 shows the multilevel growth curve analysis for work hour trajectories and self-rated health over time. There were significant associations between work hour trajectories and

self-rated health over time (Step 2). Husbands in the dual continuous workers trajectory ($B = -.012$, *S.E.* $= .006$, $p < .05$), husbands in the retiring husband/continuous working wife trajectory ($B = -.020$, *S.E.* $= .006$, $p < .01$), and husbands in the retiring husband/minimally working wife trajectory ($B = -.008$, *S.E.* $= .004$, $p < .05$) reported greater declines in self-rated health over time compared to husbands in the dual full-time to retirement trajectory. Wives in the dual part-time to retirement trajectory reported greater declines in self-rated health over time compared to wives in the dual full-time to retirement trajectory ($B = -.010$, *S.E.* $= .005$, $p < .05$). These findings are inconsistent with Hypothesis 2, which suggested that spouses with discrepant declines in work hours would report less declines in health than spouses with similar declines in work hours. These findings should be interpreted with caution because this model did not have a significantly better fit than the covariates model (χ^2 change $= -9.126$, $p > .05$).

Parental caregiving assistance as a moderator. At Wave 1, 335 husbands and 471 wives provided responses on parental caregiving. Table 3.7 shows that there was a significant interaction between work hour trajectories and parental caregiving in predicting self-rated health over time. This suggests that caring for parents was a buffering factor for some husbands. As shown in Figure 3.3, couples in the retiring husband/continuous working wife trajectory who assisted their parents had husbands who reported slower declines in self-rated health compared to husbands among couples in the full-time to retirement trajectory who assisted their parents. This finding is consistent with Hypothesis 3 which suggested that spouses with discrepant declines in work hours who assisted their parents would report less declines in self-rated health than spouses with similar work hours who assisted their parents.

Job satisfaction as a moderator. 1522 husbands and 1061 wives reported on job satisfaction at Wave 1. There was a significant interaction between work hour trajectory and job

satisfaction on self-rated health over time, suggesting that job satisfaction was a buffering factor. From Figure 3.4, wives in the retiring husband/minimally working wife trajectory who had higher job satisfaction reported less declines in self-rated health compared to wives in the dual full-time to retirement trajectory who had higher job satisfaction. This finding does not support Hypothesis 4 which posited that spouses with discrepant declines in work hours and higher job satisfaction would report greater declines in health compared to those with lower job satisfaction.

Depression. Finally, I examined whether depression at Wave 1 and changes in depression over time varied by couples' work hour trajectories. Couples' work hour trajectories were compared against couples in the dual full-time to retirement trajectory.

Table 3.9 shows the multilevel growth curve analysis of work hour trajectories predicting depression over time (Step 2). Wives in the dual continuous workers trajectory ($B = -.025$, $S.E. = .025$, $p < .05$), wives in the retiring husband/minimally working wife trajectory ($B = -.015$, $S.E. = .007$, $p < .05$), wives in the continuous working husband/minimally working wife trajectory ($B = -.024$, $S.E. = .010$, $p < .05$) reported lower depression over time compared to wives in the dual full-time to retirement trajectory. These findings partially support Hypothesis 2 which predicted that spouses with discrepant declines in work hours would report lower depression over time compared to spouses with similar declines in work hours.

Parental caregiving assistance as a moderator. There was a significant interaction between work hour trajectories and parental caregiving in predicting depression over time, such that assisting parents may be an exacerbating factor for depression among some wives (Table 3.10). As Figure 3.5 shows, couples in the retiring husband/minimally working wife trajectory who assisted their parents had wives who reported less declines in depression (worse mental health) compared to wives among couples in the full-time to retirement trajectory who assisted

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their parents. This finding is inconsistent with Hypothesis 3 which predicted that spouses with discrepant work hours and providing parental caregiving would report lower depression over time compared to spouses with similar declines in work hours who provided caregiving.

Job satisfaction as a moderator. There was a significant interaction between work hour trajectories and job satisfaction over time in predicting depression, suggesting that higher job satisfaction over time is an exacerbating factor (Table 3.11).

Figure 3.6 shows that wives in the dual continuous workers trajectory who had higher job satisfaction reported less declines in depression (worse mental health) compared to wives in the dual full-time to retirement trajectory who had higher job satisfaction. Likewise, Figure 3.7 shows that husbands in the retiring husband/continuous working wife trajectory who had higher job satisfaction reported less declines in depression compared to husbands in the dual full-time to retirement trajectory who had higher job satisfaction. These findings partially support Hypothesis 4 which predicted that spouses with discrepant declines in work hours would report greater depression over time.

Discussion

The purpose of this study was to identify and describe couples' work hour trajectories among midlife and older couples over 14 years of marriage. This study contributes to the literature by investigating work hour trajectories of both husbands and wives from midlife to old age and examining the distinct implications of work hour trajectories on changes in self-rated and depression. The convoy model of social relations for midlife and older couples served as a guiding framework to test the research questions.

Trajectories of Work Hours

I first examined the average levels of work hours among couples at Wave 1 in 1998 and whether there was an average change in work hours over time. Husbands on average worked full time and decreased in work hours over time, and wives on average worked part time and decreased work hours over time. Given the heterogeneity of work and retirement arrangements that couples experience in midlife and old age, it was clear that a more complex picture of work hour trajectories was needed to illustrate the couples' work trajectories.

Couples fit into six distinct work hour trajectories that varied in the number of hours at Wave 1 of data collection and in their change over 14 years of marriage. This finding is unique in that it captures not only an individual's development of work but how that individual's work changes in parallel with his or her spouse's work. Consistent with my hypothesis, there were different kinds of couples at Wave 1, including dual-working couples, single-worker families, and part-time workers. Wives also showed more variations than husbands in work hours at Wave 1. Whereas husbands in all six trajectories were working at Wave 1, some wives were working full time, some wives were working part time, and some wives were working minimally. Work hours also decreased over time for all spouses in all trajectories, which is consistent with my hypothesis.

The first four trajectories consisted of dual-working couples at Wave 1. The first trajectory was couples labeled as dual full-time to retirement. They were couples who were full-time dual-workers at Wave 1 and decreased work hours over time until they stopped working. It is interesting to note that both husband and wife exhibited declining work hours over time in a similar fashion. This suggests that these spouses may have negotiated their retirement arrangements to fit each other's retirement schedules and made the decision to retire together.

The second trajectory comprised of dual continuous workers in which couples were full-time dual-workers at Wave 1 with husbands working more hours than wives. Over time, husbands and wives decreased work hours in similar slopes but continued working, and in particular, husbands were still working full time after 14 years. The third trajectory comprised of couples with a retiring husband and a continuous working wife. They were full-time dual-workers at Wave 1 with the husband retiring over time but the wife continuing to work throughout the 14 years. This trajectory is the only one with the wife working more than the husband over time. These three full-time dual-working couple trajectories are interesting because they indicate that dual-working couples are a prominent type of married household in the United States even when taking into account that these couples were on average married 32 years and middle to older ages. An average 32 years of marriage means couples were married in the 1960s, thus despite their older ages their histories are consistent with the shift in work and family gender roles over time with wives increasing employment over the years.

The fourth trajectory was couples labeled as the dual part-time to retirement trajectory. Both husband and wife worked part-time at Wave 1 with wives working more hours than husbands, and both decreasing work hours over time. This trajectory includes husbands and wives who are partly retired but continue some part-time work. It is unique in showing that the transition between work and retirement can take on different forms as retirement does not necessarily mean ceasing work all together (Cahill, Giandrea, & Quinn, 2006; Wang, 2007). The fifth and sixth trajectories were single-worker families in which husbands worked full time and wives worked minimally at Wave 1. The fifth trajectory was labeled as couples with a retiring husband and a minimally working wife. Work hours for husbands in this trajectory declined over time from full time to zero hours. This trajectory made up the largest percentage of the sample

which is consistent with the gender role and societal expectations of the 1960s. Specifically, the norm was to have a family made up of a single earner husband and homemaker wife. Finally, the sixth trajectory was couples with a continuous working husband and a minimally working wife. Husbands worked full time at Wave 1 and decreased work hours but continued working full time after 14 years, and wives decreased work hours over time from part-time to zero hours. By examining work hours of both husband and wife prospectively, this study extends our understanding of midlife and older couples' diverse work trajectories beyond past studies that assumed individuals experience only one single average trajectory.

Factors Associated with Work Hour Trajectory Membership

Next, I examined whether sociodemographic and life covariates at Wave 1 were associated with work hour trajectory membership. Age, education, years of marriage, number of children, household income, and wealth were found to vary by trajectories. In particular, wives who were younger and more highly educated were in trajectories that included a full-time working wife, namely the dual full-time to retirement, dual continuous workers, and retiring husband/continuous working wife trajectories. In the dual continuous workers and retiring husband/continuous working wife trajectories, wives continued working close to full time after 14 years. This suggests that there a cohort difference where younger wives had more access to education, and as a result could be in occupations that allow wives to work later into life. These occupations might include, for example, professional or managerial work, which provides opportunities for flexible work arrangements such as decreasing work hours. It is also likely that these occupations require less physical demands.

Wives in the retiring husband/minimally working wife trajectory were older and had less education. This also indicates a cohort difference as women in older generations had less access

to higher education as reflected in these wives' limited work over time. It should also be noted that these couples had significantly greater wealth, which means it is likely that they could afford for the wife to work less but still have financial stability. Finally, wives in the continuous working husband/minimally working wife trajectory had lower education and the couples were likely to have more children. These findings are consistent with the norm of adopting a single-worker family model when there are more children in the household and the wife stays at home to take care of them while the husband works to provide financially (Bianchi, Casper, & King, 2005).

Implications of Work Hour Trajectories on Self-rated Health and Depression

Using the convoy model of social relations for couples as a guiding framework, couples' work context over time could influence changes in physical and psychological health, which is a concern among midlife and older couples.

In general, it was hypothesized that there would be differences in the associations between trajectories of spouses with discrepant declines in work hours and trajectories of spouses with similar declines in work hours on health outcomes. The findings provided partial support for the hypotheses. Overall, self-rated health declined over time for both husbands and wives. When considering the context of caregiving, husbands among couples in the retiring husband/continuous working wife trajectory who provided parental caregiving reported less declines in self-rated health than husbands among couples in the dual full-time to retirement trajectory who provided parental caregiving. This finding is consistent with the idea that couples with discrepant work hours might be able to better adapt to caregiving needs. However, because the measure indicated either spouse could provide for the parent(s), it is possible that the continuously working wives provided caregiving even though their husbands were retiring and

likely had more time available. This alternative interpretation could also explain why the husbands report less declines (better health) over time because they are retiring without any caregiving responsibilities. The idea that wives still provide much of the caregiving is further supported by the finding that wives among couples in the retiring husband/minimally working wife trajectory who provided parental caregiving reported less declines in depression compared to wives among couples in the dual full-time to retirement trajectory who provided parental caregiving. It seems as though wives did not benefit from working minimally in terms of depression likely because they provided caregiving.

Although the transition to retirement was found to be better by having a nonworking spouse at home for support (Wang, 2007), having high job satisfaction was predicted to be an exacerbating factor on health because the working spouse may feel like they are losing their work identity, generativity, and social support from the workplace. The findings from this study suggest that higher job satisfaction can be a buffering or an exacerbating factor depending on the health outcome. Wives in the retiring husband/minimally working wife trajectory who had higher job satisfaction reported less declines in self-rated health compared to wives in the dual full-time to retirement trajectory with higher job satisfaction. However, wives in the dual continuous workers trajectory who had higher job satisfaction reported less declines in depression (worse mental health over time) compared to wives in the dual full-time retirement trajectory with higher job satisfaction. One implication from these findings is that job satisfaction is a protective factor for physical health, whereas it is a detrimental factor to psychological health. Another interpretation requires a closer look at the couples' trajectories, such that job satisfaction could a protective factor for wives who work a little because they enjoy the work and it keeps them active, whereas it is a detrimental factor to wives who, although they have high job

satisfaction, know they will need to continue to work for many years to come. Further research is necessary to investigate the reasons behind these different associations for job satisfaction, such as expectations of when to retire, work stress levels, and the financial need to keep working.

Limitations and Conclusions

This study has found that there are diverse work hour trajectories among midlife and older married couples and that some trajectories are associated with physical and psychological health. The study adds to the limited work-family literature on midlife couples as most research has been conducted on young 20 to 30 year olds or on older adults aged 60 and above. More importantly, the variations in work trajectories found in this study counters the widespread assumption that little happens in midlife until the point of full retirement (Lachman & James, 1997). Midlife development is extremely diverse. This study contributes to the literature by identifying trajectory groups that can useful in identifying risk factors in the future for couples.

One confound in the analyses examining self-rated health as an outcome is that health may predict retirement status because those who have significant health issues would not be able to work. Future research needs to tease apart the directionality between changes in health and changes in work, and consider the discrepancies between spouses' health status. For example, if a spouse can no longer work due to health reasons, the other may have to continue to work to provide financially or may need to reduce work to take care of the spouse. More information is also needed on the couples' contexts. For example, parental caregiving depends on whether or not the parents are alive, the couple's proximity to their parents, as well as their relationship quality. Couples who do not live close to their living parents may not be able to provide assistance, and couples who do not have a good relationship with their parents may be unwilling to provide assistance. Future research can explore whether being in a trajectory with discrepant

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work hours buffers the levels of caregiving stress that spouses experience when assisting parents, as well as caregiving for children and grandchildren, on physical and psychological health. Lastly, the findings suggested that there are gender and cohort differences in terms of wives' employment from midlife to old age. Age and education were associated with trajectories in which wives worked over time, but it is unclear what types of occupations and what kinds of opportunities and abilities wives had to continue working in old age. Future research should examine whether work hour trajectories are associated with different job conditions, such as occupations, self-employment, and second careers, to differentiate between trajectories in which spouses continue to work due to interests or due to needs. Those who have more choice in whether or not to continue working may have better health over time.

Despite these limitations, this study is unique in several ways. First, the data were collected in a nationally, representative study of the population over age 50 in the United States, which aptly allowed for testing the research question on midlife and older couples. Second, data from both spouses in a marriage was examined, which captured the importance of the interdependence that exists between spouses. Over the course of marriage, spouses have to negotiate and make decisions about their work-family arrangements that fit their work and family needs (Becker & Moen, 1999; Moen & Wethington, 1992; Moen & Yu, 2000). These decisions may have to be renegotiated as new work and family challenges arise over the life course, such as the need to provide parental caregiving or the need for at least one spouse to keep working full time for financial reasons. The longitudinal, trajectory, and dyadic analyses undertaken in this study begins to shed light on our understanding of couples with different developmental paths from midlife onwards.

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CHAPTER IV

Conclusion

The two studies in this dissertation were innovative in combining concepts from business and industrial-organizational studies with developmental psychology by examining work hour trajectories of married couples using 16 and 14 years of data respectively. The findings capture the heterogeneity of couples over time, including how gender roles may develop within couples over the course of marriage and across decades. This dissertation is among the first studies to investigate dynamic and dyadic work-life trajectories across the lifespan/life course from newlywed years to midlife and old age.

There were limitations to fully understand the lifespan/life course trajectories of work-life among married couples. First, there were methodological issues as the two studies used two different samples. Although representative in their respective ways, using two samples renders difficulty in understanding within-person changes from young adulthood to old age. In addition, there was almost a 20 year old gap between the last time point in study 1 (average age 41) and the first time point in study 2 (average age 60). There were also cohort issues making the two samples difficult to compare as gender role expectations differed greatly over the past decades. An ideal study would follow the same participants from young to old age to understand how work-life trajectories develop as the same individual and couple faces different sets of work-life challenges. This ideal study would capture the development over the entire life course, allowing researchers to pinpoint potential major transitions that could be used in interventions. However, even this type of study would inherently be limited to only one cohort and historical period in

time. As with any longitudinal study, there were incomplete data due to divorce and attrition. Divorcees are a selective group that may have different work-life trajectories. However, a representative sample of married couples will necessarily include those who stay married, get divorced, and become widowed. This dissertation examined representative samples of married people (including both couples who stayed married and couples who divorced) to examine the implications of work-life trajectories for married couples.

Across the two studies, the findings revealed diverse patterns of couples' work hour trajectories across the life course from young newlyweds to couples in old age. Couples in Study 1 were married in 1986 at an average age of 25 and these couples were on average 41 years old in 2002 at their 16th year of marriage. Couples in Study 2 were on average married for 32 years (hence average first year of marriage in 1964) and were on average 60 years old in 1998. Although there is a gap between the average age at the end of Study 1 and the beginning of Study 2, the findings together describe the life course trajectories of work hours among married couples as the trajectories found for the younger couples could transition into the trajectories found for the midlife and older couples.

Four patterns of work hour trajectories were found for the younger couples and six work hour trajectories were found for the midlife and older couples. By combining the trajectories, it is possible that trajectories that ended with both spouses working at Year 16 of marriage from the first study (i.e., consistent dual-workers, couples with a traditional working wife, and couples with a late employed wife) could develop into the three trajectories from the second study that included dual-working couples at Wave 1 (i.e., dual full-time to retirement, dual continuous workers, and couples with a retiring husband/continuous working wife). The single-worker family trajectory from the first study could develop into the two trajectories from the second

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study that included husband working and wife minimally working at Wave 1 (i.e., couples with a retiring husband/minimally working wife and couples with a continuous working husband/minimally working wife). Lastly, it is unclear which work hour trajectory from younger adulthood would develop into the dual part-time to retirement trajectory in midlife and old age. Couples in the dual part-time to retirement trajectory were older than the other five trajectories, thus it is possible that they may have been dual-workers a few years ago before partly retiring. These combinations suggest that there is heterogeneity in younger couples' work hour trajectories, but these work hour trajectories become more complex and increase in diversity over the life course as they move into midlife and old age.

The trajectories also indicate significant gender differences over the life course and different synergies in the dynamics of patterns. There is only one trajectory each among the younger and older couples in which both husband and wife began with the similar number of hours and changed similarly over time, namely the consistent dual-workers trajectory for the younger couples in which both husband and wife started the marriage working full time with no change over time and the dual full-time to retirement trajectory for the midlife and older couples in which both husband and wife worked full time at Wave 1 and declined work hours at a similar slope over 14 years. For all the other trajectories, husbands and wives had different number of hours and/or different slopes over time, which correspond to the idea of gendered careers where husbands and wives develop different work trajectories due to gendered expectations and life scripts (Hostetler, Sweet, & Moen, 2007).

Work hour trajectories were also more strongly associated with younger husbands' marital happiness and depression compared to younger wives. This finding is interesting because wives' work hours varied over 16 years whereas husbands' work hours did not. It is likely that

wives' work trajectories were influencing their husbands' marital happiness and depression as couples adopted different strategies to cope with work-family challenges, leading to differences between couples' work hour trajectories (for example, whether for wives to stay at home to care for a child or to return to work). Gender differences were also illustrated for midlife and older couples. Age and education played crucial roles in determining whether wives worked, which in turn likely influenced the kinds of occupations they worked in and whether or not there were opportunities to continue working into later in life.

These gender differences were related to cohort differences. In the midlife and older sample (older generations married on average in 1964), 52% of the couples belonged in trajectories with both spouses working full-time or part-time for at least part of the marriage and 48% of the couples belonged to trajectories with a single-worker family. In the younger sample (younger generation married in 1986), 88.3% of the couples belonged in the trajectories with both spouses working full-time or part-time for at least part of the marriage and 11.7% of the couples belonged to the single-worker family trajectory. The increase in dual-working couples and the decrease in single-worker families are consistent with the norms of society as wives increased employment over the last few decades. Younger wives – wives from Study 1 and younger wives within Study 2 – were more likely to have access to higher education which is associated with the likelihood of employment. In today's society, dual-working couples continue to be the norm followed by single-worker families in which husbands are still the main financial provider. I predict there is even greater diversity among couples' work trajectories today, for example, an increase in wives being the financial provider and husbands staying at home to care for children (Sussman & Bonnell, 2006). Roughly 40% of baby boomers expect to postpone retirement and continue working due to their financial situations (Metlife, 2014). Transitions to

retirement could, therefore, become more complex as spouses negotiate work-family arrangements and work later in life. As societal norms continue to evolve, future research needs to monitor and track couples' work-family trajectories as they continue to unfold over the life course.

Finally, the findings from this dissertation strongly suggest a need to examine individuals' and couples' work and personal lives from a lifespan/life course perspective. Too often, organizational studies that focus on employee well-being neglect not only the employees' personal and family lives, which strongly influence their productivity and health, but also the idea that both employees and the organization changes and develops over time. A new theory that encompasses the lifespan/life course perspective of work and life should be considered, particularly surrounding the concept of time, including: time spent at work and nonwork, time both as a resource and as an investment, time as a catalyst of change, gendered time, as well as individual time versus family and organizational time. This dissertation represents a significant first step in a research program on the development of work-life trajectories from young adulthood to beyond with the eventual goal of understanding and improving individual health, family relationships and development, as well as organization productivity and outcomes.

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TABLES

Table 2.1

Response Rates for Marital Status and Work Hours (n = 352 couples/704 participants)

	Year 1 *n* (%)	Year 3 *n* (%)	Year 7 *n* (%)	Year 16 *n* (%)
Marital Status				
Married	352 (100)	293 (83.2)	242 (68.8)	179 (50.9)
Divorced/Separated	-	43 (12.2)	94 (26.7)	157 (44.6)
Work Hours	701 (99.6)	513 (72.9)	336 (47.7)	312 (44.3)

Note: Percentages were calculated by dividing the number of participants in that category over the number of participants in the first year. Data for marital status was missing from 16 couples (4.5%) in Year 16.

Table 2.2

Age at Assessment and Descriptive Statistics for Growth Curve Models

Measure		Husbands				Wives				Couple	
	n	Age	*Mean*	*SD*	*n*	Age	*Mean*	*SD*	*n*	*Mean*	*SD*
Work Hours											
Wave 1	350	26.46	43.49	12.46	351	24.35	26.04	20.02			
Wave 2	251	28.04	44.46	15.97	262	26.14	23.87	20.09			
Wave 3	168	32.73	45.02	14.79	168	30.86	23.08	19.29			
Wave 4	155	41.89	45.15	17.00	157	40.44	26.76	21.07			
Covariates at Wave 1											
Education	352	26.49	13.23	1.85	351	24.36	13.23	1.86			
# Children	352	26.49	.55	.90	352	24.34	.55	.88			
Race (Black)									352	52.3%	
Household income									347	31890	16370

Table 2.3

Work Hours among Husbands and Wives over 16 Years

| Work Hours | Year 1 | | Year 3 | | Year 7 | | Year 16 | |
	n	*M* (*SD*)	*n*	*M* (*SD*)	*n*	*M* (*SD*)	*n*	*M* (*SD*)
Husband	350	43.49 (15.97)	251	44.46 (15.97)	168	45.02 (14.79)	155	45.15 (17.00)
Wife	351	26.04 (20.02)	262	23.87 (20.09)	168	23.08 (19.29)	157	26.76 (21.07)
Paired t-test		13.38***		12.78***		10.70***		8.03***

Note: **p* < .05. ***p* < .01. ****p* < .001.

Table 2.4

Fit Indices for Latent Class Growth Analysis Models for Work Hours (Unconditional)

Fit indices	Couples' Tension Trajectory Models				
	1 Class	2 Classes	3 Classes	4 Classes	5 Classes
AIC	15873.018	15585.619	15618.122	15494.725	15453.558
BIC	15919.381	15651.301	15703.121	15599.043	15577.195
SSBIC	15881.313	15597.370	15633.329	15513.388	15475.678
Entropy	-	0.97	0.93	0.75	0.77
VLMR *p*-value	-	<.001	0.98	0.40	0.55
BLRT *p*-value	-	<.001	1.00	<.001	<.001
AvePP (Range)	-	.979-.997	.829-.981	.793-.905	.762-.905
OCC (Range)	-	78.860-196.464	32.408-97.774	6.015-78.509	5.806-147.475
Prop of Incorrect Class (Range)	-	.010-.017	.003-.081	.149-.656	.041-.650
Number of classes <5%	0	0	0	0	1

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; SSBIC = sample size adjusted Bayesian information criterion; VLMR = Vuong-Lo-Mendell-Rubin test; BLRT = bootstrapped parametric likelihood ratio test. Ave PP = the average posterior probability, which is the probability an individual belongs to a trajectory group; OCC = the odds of correct classification; Prop of incorrect class = 1- probability of group assignment divided by the actual proportion of individuals who fall into a group.

Table 2.5

Estimated Percentages, Parameter Estimates, and Model Fit for Work Hour Trajectories

Trajectory group	Prop	Prob	Husband Intercept	Wife Intercept	Wife Linear Slope	Wife Quadratic Slope	Ave PP	OCC	Prop of incorrect classification (abs)
1) Consistent dual-workers (*n* = 142)	.40	.35	42.37***	39.08***			.87	12.43	.13
2) Single-worker family (*n* = 41)	.12	.15	46.85***	1.89***			.86	34.81	.25
3) Traditional working wife (*n* = 83)	.23	.28	46.41***	40.73***	-9.15***	.51***	.79	9.67	.22
4) Late employed wife (*n* = 86)	.24	.21	42.23***	1.66***	8.10***	-0.35***	.80	15.05	.13
		AIC = 15420.250		BIC = 15509.113		SSBIC = 15436.148			

Note. Prop = the actual proportion of individuals who fall into each group; Prob = the probability of group assignment or the estimated percentages; Ave PP = the average posterior probability, which is the probability an individual belongs to a trajectory group; OCC = the odds of correct classification; Prop of incorrect classification = 1- probability of group assignment divided by the actual proportion of individuals who fall into a group; AIC = Akaike information criterion; BIC = Bayesian information criterion; SSBIC = sample size adjusted Bayesian information criterion. *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

Table 2.6

Separate Multivariate Logistic Regressions Predicting Couples' Work Hour Trajectory Membership

Wave 1	Consistent dual-workers		Single-worker family		Traditional working wife		Late employed wife	
	M (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.
Husband Age	26.80 (3.84)	.997	25.80 (4.01)	1.009	26.36 (3.62)	.937	26.42 (4.83)	1.058
Wife Age	24.77 (3.37)	1.013	23.29 (4.03)	.975	24.88 (3.93)	1.046	23.59 (3.98)	.914
Husband Education	13.52 (1.82)	.996	12.59 (2.11)	.956	13.64 (1.87)	1.023	12.65 (1.52)	.971
Wife Education	13.69 (1.80)	1.052	12.10 (1.80)	.764	13.80 (1.72)	1.156	12.47 (1.62)	.901
Black	53.52%	1.803*	41.46%	.395*	37.35%	.590	69.77%	1.721
Household Income	49180 (20120)	11.516***	35540 (22150)	.415	49250 (22450)	2.193	32100 (20960)	.066***
Cohabit	9.13 (18.02)	.996	12.46 (21.62)	.997	11.36 (23.99)	1.015	12.80 (19.12)	.994
Children	.91 (1.06)	.678*	1.63 (1.45)	1.494	1.17 (1.24)	.643	1.49 (1.23)	1.484*
χ^2	42.637***		25.933**		28.586***		69.272***	
Nagelkerke R^2	.157		.141		.120		.270	

Note. O.R. = Odds Ratio. *p < 0 .05, ** p < 0.01. ***p < .001.

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Table 2.7

Multilevel Growth Curve Analysis Predicting Marital Happiness

Ref: Consistent dual-workers		Step 1		Step 2		Step 3a	
		b	*S.E.*	*b*	*S.E.*	*b*	*S.E.*
Intercept	H	3.787***	.036	3.722***	.043	3.748***	.046
	W	3.764***	.046	3.731***	.055	3.759***	.058
Time	H	-.011	.006	-.008	.007	-.027**	.010
	W	-.011	.007	-.011	.008	-.030*	.012
Age	H	-.002	.005	-.001	.005	-.001	.005
	W	-.002	.006	-.002	.006	-.001	.006
Black	H	-.172***	.042	-.124**	.042	-.120**	.042
	W	-.208***	.046	-.179***	.047	-.172***	.047
Education	H	.011	.010	.008	.010	.007	.009
	W	.023*	.011	.024*	.012	.020	.012
Household Income	H	.240**	.076	.254**	.079	.268**	.079
	W	.229*	.089	.253**	.093	.266**	.093
Cohabit	H	-.001	.001	-.001	.001	-.000	.001
	W	-.000	.001	-.000	.001	-.000	.001
Children	H	-.036*	.016	-.043**	.016	-.071	.036
	W	-.052**	.018	-.059**	.019	-.089*	.042
Single-worker family	H			.136	.074	.147	.090
	W			.068	.084	.075	.104
Traditional working wife	H			.129*	.055	.144*	.063
	W			.041	.062	.067	.072
Late employed wife	H			.006	.060	-.020	.074
	W			.037	.068	-.039	.086
Single-worker family *Time	H			-.003	.008	.015	.016
	W			.008	.009	.030	.018

Traditional working wife *Time	H			.005	.006	.010	.012
	W			.006	.007	.011	.014
Late employed wife *Time	H			-.021**	.007	.012	.016
	W			-.015	.008	.035	.018
Single-worker family*Children	H					-.004	.055
	W					-.004	.065
Traditional working wife*Children	H					-.028	.055
	W					-.046	.064
Late employed wife*Children	H					.025	.051
	W					.063	.059
Children*Time	H					.010*	.004
	W					.011*	.005
Single-worker family *Children*Time	H					-.009	.007
	W					-.010	.008
Traditional working wife *Children*Time	H					-.002	.006
	W					-.000	.007
Late employed wife*Children*Time	H					-.016*	.007
	W					-.025**	.008
-2 X Log Likelihood		2247.863		2286.928		2365.324	
χ^2 change from previous step				39.065***		78.396***	
Individual level intercept variance (*SE*)		.072	.012	.066	.011	.063	.011
Couple level intercept variance (*SE*)		.077	.014	.076	.014	.074	.014

*p < 0 .05, ** p < 0.01. ***p < .001.

Table 2.8

Work Hour Trajectory X Job Satisfaction Predicting Marital Happiness

Ref: Consistent dual-workers		Main effect		Step 3b	
		b	S.E.	b	S.E.
Job Satisfaction	H	.033	.017	.022	.035
	W	.008	.022	-.075*	.035
Single-worker family*Job Satisfaction	H			-.022	.080
	W			-.022	.026
Traditional working wife* Job Satisfaction	H			-.009	.055
	W			.127*	.062
Late employed wife* Job Satisfaction	H			-.025	.053
	W			.187*	.074
Job Satisfaction *Time	H			.002	.005
	W			.010	.006
Single-worker family * Job Satisfaction *Time	H			-.011	.012
	W			-.007	.024
Traditional working wife * Job Satisfaction *Time	H			.000	.007
	W			-.015	.010
Late employed wife* Job Satisfaction *Time	H			.017*	.008
	W			-.011	.010
-2 X Log Likelihood		1946.527		1985.980	
χ^2 change from previous step				48.744***	
Individual level intercept variance (*SE*)		.057	.011	.056	.011
Couple level intercept variance (*SE*)		.076	.019	.077	.019

Note. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0.05$, ** $p < 0.01$. ***$p < .001$.

Table 2.9

Multilevel Growth Curve Analysis Predicting Depression

Ref: Consistent dual-workers		Step 1		Step 2		Step 3a	
		b	*S.E.*	*b*	*S.E.*	*b*	*S.E.*
Intercept	H	1.776***	.036	1.853***	.044	1.864***	.047
	W	1.796***	.047	1.834***	.055	1.847***	.058
Time	H	.006	.006	.006	.007	.016	.010
	W	.004	.007	.006	.008	.007	.011
Age	H	.008	.005	.007	.005	.008	.005
	W	.007	.006	.006	.006	.006	.006
Black	H	-.134	.042	-.154***	.043	-.146**	.043
	W	-.025	.047	-.030	.049	-.025	.048
Education	H	.002	.010	.002	.010	.002	.010
	W	-.031**	.012	-.034**	.012	-.033**	.012
Household Income	H	-.393***	.072	-.456***	.076	-.452***	.076
	W	-.259**	.081	-.298***	.085	-.290**	.085
Cohabit	H	.000	.001	.000	.001	.000	.001
	W	-.001	.001	-.000	.001	-.000	.001
Children	H	-.035*	.015	-.027	.015	-.070*	.034
	W	-.034*	.017	-.029	.017	-.057	.038
Single-worker family	H			-.111	.074	-.203*	.089
	W			-.116	.083	-.126	.100
Traditional working wife	H			-.133*	.055	-.141*	.062
	W			-.046	.062	-.075	.069
Late employed wife	H			-.153*	.060	-.138	.073
	W			-.103	.066	-.065	.083
Single-worker family *Time	H			-.002	.007	-.016	.014
	W			.000	.008	-.010	.016

Variable		Est	SE	Est	SE	Est	SE
Traditional working wife *Time	H			-.001	.005	-.14	.011
	W			-.002	.006	-.003	.012
Late employed wife *Time	H			.012	.006	-.018	.015
	W			.003	.007	-.022	.016
Single-worker family*Children	H					.112*	.053
	W					.032	.059
Traditional working wife*Children	H					.040	.052
	W					.057	.057
Late employed wife*Children	H					.021	.049
	W					-.008	.054
Children*Time	H					-.002	.004
	W					.001	.004
Single-worker family *Children*Time	H					.001	.006
	W					.002	.007
Traditional working wife *Children*Time	H					.004	.005
	W					-.003	.006
Late employed wife*Children*Time	H					.011	.007
	W					.010	.007
-2 X Log Likelihood		2153.926		2211.712		2296.369	
χ^2 change from previous step				57.786***		84.657***	
Individual level intercept variance (*SE*)		.085	.011	.084	.011	.082	.011
Couple level intercept variance (*SE*)		.109	.013	.108	.013	.109	.014

*p < 0 .05, ** p < 0.01. ***p < .001.

Table 2.10

Work Hour Trajectory X Job Satisfaction Predicting Depression

Ref: Consistent dual-workers		Main effect		Step 3b	
				b	*S.E.*
Job Satisfaction	H	-.073***	.018	-.106**	.038
	W	-.063**	.022	-.044	.034
Single-worker family*Job Satisfaction	H			.170*	.080
	W			-.253	.259
Traditional working wife* Job Satisfaction	H			.037	.059
	W			.023	.062
Late employed wife* Job Satisfaction	H			.093	.056
	W			-.068	.073
Job Satisfaction *Time	H			.010	.005
	W			.002	.005
Single-worker family * Job Satisfaction *Time	H			-.022	.012
	W			.016	.023
Traditional working wife * Job Satisfaction *Time	H			-.020**	.008
	W			-.013	.009
Late employed wife* Job Satisfaction *Time	H			-.024**	.009
	W			-.005	.010
-2 X Log Likelihood		1833.072		1881.779	
χ^2 change from previous step				47.548***	
Individual level intercept variance (*SE*)		.078	.011	.081	.011
Couple level intercept variance (*SE*)		.107	.016	.110	.016

Note. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0$ .05, ** $p <$ 0.01. ***$p < .001$.

Table 2.11

Wives' Work Status and Work Hours by Trajectory in Each Year

	Trajectory group	*n*	Working	Unemployed	Homemaker	Maternal leave	Other	Work Hours (*M/SD*)
				Work Status (%)				
Y1	Dual-workers	142	100	0	0	0	0	39.25 (7.53)
	Single-worker family	41	2.4	26.8	56.1	4.9	9.7	.22 (1.41)
	Traditional working wife	83	100	0	0	0	0	41.83 (8.68)
	Late employed wife	86	11.6	25.6	38.4	11.6	12.8	1.49 (4.50)
Y3	Dual-workers	109	94.5	.9	.9	3.7	0	38.51 (11.74)
	Single-worker family	34	20.6	20.6	55.9	0	2.9	5.55 (14.22)
	Traditional working wife	72	51.4	9.7	26.4	9.7	2.8	17.63 (19.46)
	Late employed wife	58	48.3	13.8	27.6	5.2	5.1	15.52 (18.52)
Y7	Dual-workers	65	100	0	0	0	0	38.32 (8.65)
	Single-worker family	23	8.7	13.0	69.6	4.3	4.3	1.17 (3.9)
	Traditional working wife	50	24.0	12.0	52.0	12.0	0	4.42 (8.26)
	Late employed wife	30	96.7	0	3.3	0	0	37.93 (11.03)
Y16	Dual-workers	61	85.2	3.3	8.2	0	3.2	35.00 (16.56)
	Single-worker family	21	28.6	0	52.4	0	19.1	8.24 (15.94)
	Traditional working wife	50	50.0	6.0	32.0	2.0	10.0	15.62 (18.45)
	Late employed wife	26	100	0	0	0	0	44.52 (15.29)

Note. Percent calculated by dividing frequency of response by the number of valid responses in each year.

Table 3.1

Work Hours among Husbands and Wives from 1998-2012 (n = 1641 couples/3282 participants)

Work Hours	Wave 1 (1998)		Wave 2 (2000)		Wave 3 (2002)		Wave 4 (2004)	
	n(%)	*M (SD)*	*n(%)*	*M (SD)*	*n(%)*	*M (SD)*	*n(%)*	*M (SD)*
Husband	1641	42.62	1512	34.76	1472	27.51	1402	22.35
	(100)	(16.73)	(92.14)	(22.27)	(89.70)	(23.25)	(85.44)	(23.06)
Wife	1641	22.48	1528	20.41	1478	17.11	1437	14.56
	(100)	(19.71)	(93.11)	(20.18)	(90.07)	(19.51)	(87.57)	(18.54)
Paired t-test	32.35***		20.07***		14.44***		11.16***	

Work Hours	Wave 5 (2006)		Wave 6 (2008)		Wave 7 (2010)		Wave 8 (2012)	
	n(%)	*M (SD)*	*n(%)*	*M (SD)*	*n(%)*	*M (SD)*	*n(%)*	*M (SD)*
Husband	1323	18.53	1259	14.98	1171	11.13	1086	8.76
	(80.62)	(22.46)	(76.72)	(21.06)	(71.36)	(18.36)	(66.18)	(16.70)
Wife	1377	11.86	1349	9.87	1288	6.70	1217	5.25
	(83.91)	(17.94)	(82.21)	(16.92)	(78.49)	(13.75)	(74.16)	(12.44)
Paired t-test	9.66***		7.28***		7.28***		5.57***	

Note: Percentages were calculated by dividing the number of responses in that year over the number of responses in the first year. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3.2

Age at Assessment and Descriptive Statistics for Growth Curve Models

Measure	Husbands				Wives				Couple		
	n	Age	*Mean*	*SD*	*n*	Age	*Mean*	*SD*	*n*	*Mean*	*SD*
Work Hours											
Wave 1	1527	60.15	45.80	12.45	1066	57.24	34.61	13.34			
Wave 2	1194	61.57	44.02	14.84	900	58.82	34.66	14.07			
Wave 3	975	63.47	41.53	15.28	754	60.48	33.54	13.95			
Wave 4	805	64.98	38.93	16.75	656	62.38	31.90	14.12			
Wave 5	660	66.87	37.14	17.87	529	64.15	30.87	15.83			
Wave 6	541	68.70	34.86	18.41	440	65.86	30.26	16.13			
Wave 7	413	70.75	31.55	17.64	323	68.12	26.72	14.79			
Wave 8	316	72.17	30.10	17.81	242	69.72	26.40	14.84			
Covariates at Wave 1											
Race (White)	1641	60.52	88.1%		1641	58.08	88.3%				
Education	1640	60.52	12.91	3.15	1641	58.08	12.64	2.89			
# Children	1633	60.52	3.34	2.00	1634	58.08	3.34	1.99			
Years Married									1637	32.04	11.33
Household income									1641	81760	122630
Wealth									1641	441480	2276650

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Table 3.3

Fit Indices for Latent Class Growth Analysis Models for Work Hours (Unconditional)

Fit indices	Couples' Tension Trajectory Models						
	1 Class	2 Classes	3 Classes	4 Classes	5 Classes	6 Classes	7 Classes
AIC	193243.166	188030.462	185780.134	183983.697	182882.620	182357.637	181546.312
BIC	193351.228	188165.538	185942.226	184172.804	183098.743	182600.774	181816.465
SSBIC	193287.691	188086.117	185846.921	184061.615	182971.669	182467.817	181657.624
Entropy	-	.922	.912	.900	.905	.883	.864
VLMR *p*-value	-	<.001	<.001	.014	.026	.220	.305
BLRT *p*-value	-	<001	<.001	<.001	<.001	<.001	<.001
AvePP (Range)	-	.961-.984	.922-.980	.924-.957	.908-.957	.879-.952	.817-.978
OCC (Range)	-	25.177-60.191	29.883-156.694	21.656-142.249	22.191-243.010	19.731-218.131	18.434-1073.336
Prop of Incorrect Class (Range)	-	.000-001	.003-.042	.009-.047	.018-062	.013-.064	.007-.079
Number of classes <5%	0	0	0	0	0	0	1

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; SSBIC = sample size adjusted Bayesian information criterion; VLMR = Vuong-Lo-Mendell-Rubin test; BLRT = bootstrapped parametric likelihood ratio test. Ave PP = the average posterior probability, which is the probability an individual belongs to a trajectory group; OCC = the odds of correct classification; Prop of incorrect class = 1- probability of group assignment divided by the actual proportion of individuals who fall into a group.

Table 3.4

Estimated Percentages, Parameter Estimates, and Model Fit for Work Hour Trajectories

Trajectory group	Prop	Prob	Husband Intercept	Husband Linear	Wife Intercept	Wife Linear	Ave PP	OCC	Prop of incorrect classification (abs)
1) Dual full-time to retirement (n = 397)	.24	.23	44.90	-3.20	42.79	-3.10	.90	29.36	.04
2) Dual continuous workers (n = 135)	.08	.08	54.72	-1.26	44.24	-1.40	.95	218.13	.01
3) Retiring husband/ continuous working wife (n = 124)	.08	.08	40.01	-2.98	39.00	-0.44	.94	164.46	.06
4) Dual part-time to retirement (n = 191)	.12	.12	12.35	-1.00	20.79	-1.53	.88	52.01	.05
5) Retiring husband/ minimally working wives (n = 617)	.38	.37	39.04	-3.03	5.10	-0.40	.92	19.73	.02
6) Continuous working husband/ minimally working wives (n = 177)	.11	.11	52.51	-1.12	9.16	-0.64	.93	101.48	.04
		AIC = 182357.64			BIC = 182600.77			SSBIC = 182457.82	

Note. Prop = the actual proportion of individuals who fall into each group; Prob = the probability of group assignment or the estimated percentages; Ave PP = the average posterior probability, which is the probability an individual belongs to a trajectory group; OCC = the odds of correct classification; Prop of incorrect classification = 1- probability of group assignment divided by the actual proportion of individuals who fall into a group; AIC = Akaike information criterion; BIC = Bayesian information criterion; SSBIC = sample size adjusted Bayesian information criterion. *$p < 0.05$, ** $p < 0.01$. ***$p < .001$.

Table 3.5

Separate Multivariate Logistic Regressions Predicting Couples' Work Hour Trajectory Membership

		Dual full-time to retirement (n = 397)		Dual continuous workers (n = 135)		Retiring husband/ continuous working wife (n = 124)		Dual part-time to retirement (n = 191)		Retiring husband/ minimally working wives (n = 617)		Continuous working husband/ minimally working wives (n = 177)	
Wave 1		*M* (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.	*M* (*SD*)	O.R.
Age	H	58.71 (4.56)	.987	57.36 (4.73)	.913**	58.33 (4.12)	1.034	65.06 (6.48)	1.158**	61.84 (6.16)	.969*	58.97 (5.17)	.906**
	W	55.98 (3.71)	.914***	55.14 (3.95)	.930*	54.82 (3.34)	.848***	60.94 (5.91)	.956*	60.02 (6.25)	1.119***	57.45 (5.01)	1.046
Education	H	13.19 (2.76)	.973	13.75 (3.07)	.995	13.28 (2.71)	.983	12.17 (3.15)	.961	12.56 (3.33)	1.019	13.30 (3.44)	1.076*
	W	13.12 (2.62)	1.094**	13.76 (2.21)	1.132*	13.40 (2.58)	1.116*	12.24 (2.92)	1.017	12.08 (2.96)	.894***	12.52 (3.33)	.927*
White	H	87.15%	.901	86.67%	.643	84.68%	.616	89.53%	2.159	88.94%	1.133	89.27%	.821
	W	87.66%	1.119	87.41%	1.148	86.29%	1.427	88.48%	.643	88.65%	.911	89.83%	1.314
Children		3.42 (2.00)	1.085*	2.99 (1.61)	.976	2.98 (1.68)	.894	3.51 (2.06)	1.006	3.31 (2.01)	.953	3.59 (2.23)	1.111*
Years married		29.65 (10.78)	1.000	28.90 (9.66)	.999	27.12 (10.79)	.976*	35.21 (12.29)	1.005	34.44 (10.98)	1.011	31.28 (10.78)	1.008
Household income		82400 (58140)	2.432***	127200 (347200)	1.287	77500 (54900)	1.154	61700 (60700)	.525**	75700 (86500)	.783	91300 (79100)	1.419
Wealth		285500 (467900)	.056***	568300 (1205000)	3.358	228500 (277700)	.022**	827600 (6263400)	1.814	483700 (1006100)	2.622*	436700 (702200)	1.724
χ^2		129.501***		161.246***		38.234***		83.958***		90.665***		131.792***	
Nagelkerke R^2		.114		.128		.047		.117		.131		.151	

Note. O.R. = Odds Ratio. *p < 0 .05, ** p < 0.01. ***p < .001.

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Table 3.6

Multilevel Growth Curve Analysis Predicting Self-Rated Health

Ref: Dual full-time to retirement		Step 1		Step 2	
		B	*S.E.*	*B*	*S.E.*
Intercept	H	3.506***	.057	3.437***	.068
	W	3.196***	.065	3.374***	.077
Time	H	-.017***	.004	-.015**	.005
	W	-.007	.004	-.017***	.005
Age	H	-.017***	.003	-.012***	.003
	W	-.017***	.005	-.010*	.004
White	H	.039	.057	.047	.056
	W	.327***	.060	.340***	.059
Education	H	.060***	.006	.057***	.006
	W	.100***	.007	.092***	.007
Household Income	H	.034	.022	.031	.022
	W	.041*	.018	.039*	.018
Wealth	H	.360***	.077	.333***	.077
	W	.149*	.074	.184*	.074
Years married	H	.002	.002	.001	.002
	W	.003	.002	.004	.002
Widow	H	.154**	.046	.154**	.046
	W	.129***	.032	.133	.032
Children	H	-.004	.009	-.005	.009
	W	.019*	.009	.021*	.009
Depression	H	-.109***	.006	-.108***	.006
	W	-.086***	.004	-.085***	.004
Dual continuous workers	H			.395***	.080
	W			.090	.082
Retiring husband/ continuous working wife	H			.066	.082
	W			.085	.084
Dual part-time to retirement	H			-.113	.074
	W			-.040	.075
Retiring husband/ minimally working wife	H			.086	.053
	W			-.303***	.056
Continuous working husband/ minimally working wife	H			.263***	.072
	W			-.254**	.075
Dual continuous workers *Time	H			-.012*	.006
	W			.007	.005
Retiring husband/ continuous working wife *Time	H			-.020**	.006
	W			.007	.005

Dual part-time to retirement *Time	H			-.001	.006
	W			-.010*	.005
Retiring husband/ minimally working wife *Time	H			-.008*	.004
	W			.010	.003
Continuous working husband/ minimally working wife *Time	H			-.007	.005
	W			.000	.005
-2 X Log Likelihood		48037.634		48028.508	
χ^2 change from previous step				-9.126	
Individual level intercept variance (*SE*)		.446	.019	.436	.019
Couple level intercept variance (*SE*)		.518	.021	.502	.021

Note: *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

Table 3.7

Work Hour Trajectory X Parental Caregiving Assistance Predicting Self-Rated Health (n=335 husbands & 471 wives at Wave 1)

Ref: Dual full-time to retirement		Main effect		Step 3a	
		b	*S.E.*	*b*	*S.E.*
Assist	H	-.005	.039	.108	.116
	W	.045	.030	.156	.094
Dual continuous workers *Assist	H			.127	.230
	W			-.021	.170
Retiring husband/ continuous working wife *Assist	H			-.615**	.234
	W			-.012	.190
Dual part-time to retirement *Assist	H			-.202	.257
	W			-.110	.193
Retiring husband/ minimally working wife *Assist	H			-.172	.165
	W			-.171	.127
Continuous working husband/ minimally working wife *Assist	H			.077	.216
	W			-.214	.172
Assist*Time	H			-.015	.017
	W			.003	.012
Dual continuous workers *Assist*Time	H			.002	.032
	W			-.006	.021
Retiring husband/ continuous working wife *Assist*Time	H			.087*	.035
	W			-.027	.024
Dual part-time to retirement *Assist*Time	H			-.009	.036
	W			-.018	.028
Retiring husband/ minimally working wife *Assist*Time	H			.028	.024
	W			-.002	.016
Continuous working husband/ minimally working wife *Assist*Time	H			-.022	.032
	W			-.018	.023
-2 X Log Likelihood		11748.284		11815.033	
χ^2 change from previous step				44.037***	
Individual level intercept variance (*SE*)		.441	.035	.437	.035
Couple level intercept variance (*SE*)		.467	.032	.470	.032

Note. Assist = Time assistance to parents. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

Table 3.8

Work Hour Trajectory X Job Satisfaction Predicting Self-Rated Health (n=1522 husbands & 1061 wives at Wave 1)

Ref: Dual full-time to retirement		Main effect		Step 3b	
		b	*S.E.*	*b*	*S.E.*
Job Satisfaction	H	.025	.017	.021	.047
	W	.084***	.018	.082	.044
Dual continuous workers *Job Satisfaction	H			.049	.083
	W			.059	.082
Retiring husband/ continuous working wife *Job Satisfaction	H			-.030	.093
	W			.113	.076
Dual part-time to retirement *Job Satisfaction	H			.099	.115
	W			-.004	.086
Retiring husband/ minimally working wife *Job Satisfaction	H			.002	.061
	W			-.187*	.086
Continuous working husband/ minimally working wife *Job Satisfaction	H			.024	.075
	W			.077	.104
Job Satisfaction*Time	H			.003	.007
	W			-.005	.007
Dual continuous workers *Job Satisfaction*Time	H			-.002	.011
	W			-.004	.011
Retiring husband/ continuous working wife *Job Satisfaction*Time	H			.002	.015
	W			-.002	.010
Dual part-time to retirement *Job Satisfaction*Time	H			-.025	.026
	W			.000	.014
Retiring husband/ minimally working wife *Job Satisfaction*Time	H			-.012	.010
	W			.041*	.017
Continuous working husband/ minimally working wife *Job Satisfaction*Time	H			-.003	.010
	W			.001	.016
-2 X Log Likelihood		24348.953		24456.000	
χ^2 change from previous step				77.108***	
Individual level intercept variance (*SE*)		.402	.020	.403	.020
Couple level intercept variance (*SE*)		.420	.023	.419	.023

Note. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

Table 3.9

Multilevel Growth Curve Analysis Predicting Depression

Ref: Dual full-time to retirement		Step 1		Step 2	
		b	S.E.	b	S.E.
Intercept	H	2.295***	.092	2.176***	.106
	W	3.027***	.118	2.742***	.139
Time	H	-.029***	.005	-.024***	.007
	W	-.034***	.007	-.013	.008
Age	H	.014**	.005	.010*	.005
	W	.008	.006	.000	.006
White	H	-.156*	.076	-.157*	.076
	W	-.103	.094	-.119	.094
Education	H	-.040***	.008	-.038***	.008
	W	-.082***	.011	-.074***	.011
Household Income	H	-.125***	.036	-.114**	.036
	W	-.135**	.039	-.117**	.039
Wealth	H	-.228	.119	-.211	.120
	W	-.348*	.145	-.399**	.146
Years married	H	-.012***	.002	-.011***	.002
	W	-.014***	.003	-.015***	.003
Widow	H	.776***	.076	.778***	.076
	W	.716***	.066	.730***	.067
Children	H	.006	.012	.011	.012
	W	-.030	.015	-.029	.015
Self-rated Health	H	-.318***	.015	-.314***	.016
	W	-.426***	.019	-.416***	.019
Dual continuous workers	H			.026	.113
	W			.009	.139
Retiring husband/ continuous working wife	H			.408***	.117
	W			.053	.143
Dual part-time to retirement	H			.223*	.105
	W			.142	.127
Retiring husband/ minimally working wife	H			.100	.075
	W			.401***	.094
Continuous working husband/ minimally working wife	H			-.078	.102
	W			.360**	.127
Dual continuous workers *Time	H			-.011	.009
	W			-.025*	.011
Retiring husband/ continuous working wife *Time	H			-.002	.010
	W			-.015	.011

Dual part-time to retirement *Time	H			-.009	.009
	W			-.016	.010
Retiring husband/ minimally working wife *Time	H			.001	.006
	W			-.015*	.007
Continuous working husband/ minimally working wife *Time	H			.005	.009
	W			-.024*	.010
-2 X Log Likelihood		74112.765		74158.049	
χ^2 change from previous step				45.284**	
Individual level intercept variance (*SE*)		.718	.034	.710	.034
Couple level intercept variance (*SE*)		1.136	.052	1.126	.052

*p < 0 .05, ** p < 0.01. ***p < .001.

Table 3.10

Work Hour Trajectory X Parental Caregiving Assistance Predicting Depression (n=335 husbands & 471 wives at Wave 1)

Ref: Dual full-time to retirement		Main effect		Step 3a	
		b	*S.E.*	*b*	*S.E.*
Assist	H	.015	.028	.041	.175
	W	.100	.061	.568**	.191
Dual continuous workers *Assist	H			.507	.346
	W			-.473	.350
Retiring husband/ continuous working wife *Assist	H			-.640	.353
	W			-.195	.386
Dual part-time to retirement *Assist	H			-.152	.388
	W			-.944*	.393
Retiring husband/ minimally working wife *Assist	H			-.266	.248
	W			-.942***	.256
Continuous working husband/ minimally working wife *Assist	H			.182	.327
	W			-.462	.352
Assist*Time	H			.005	.025
	W			-.040	.024
Dual continuous workers *Assist*Time	H			-.060	.049
	W			.027	.045
Retiring husband/ continuous working wife *Assist*Time	H			.088	.053
	W			.025	.049
Dual part-time to retirement *Assist*Time	H			-.012	.055
	W			.081	.057
Retiring husband/ minimally working wife *Assist*Time	H			.015	.037
	W			.104**	.034
Continuous working husband/ minimally working wife *Assist*Time	H			-.003	.048
	W			.022	.048
-2 X Log Likelihood		17529.021		17569.624	
χ^2 change from previous step				40.337***	
Individual level intercept variance (*SE*)		.942	.083	.938	.083
Couple level intercept variance (*SE*)		.978	.085	.973	.085

Note. Assist = Time assistance to parents. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

Table 3.11

Work Hour Trajectory X Job Satisfaction Predicting Depression (n=1522 husbands & 1061 wives at Wave 1)

Ref: Dual full-time to retirement		Main effect		Step 3b	
		b	*S.E.*	*b*	*S.E.*
Job Satisfaction	H	-.216***	.025	-.234***	.071
	W	-.155***	.035	-.077	.086
Dual continuous workers *Job Satisfaction	H			-.008	.129
	W			-192	.164
Retiring husband/ continuous working wife *Job Satisfaction	H			-.140	.142
	W			.038	.152
Dual part-time to retirement *Job Satisfaction	H			-.064	.173
	W			-.191	.166
Retiring husband/ minimally working wife *Job Satisfaction	H			-.094	.094
	W			-.203	.165
Continuous working husband/ minimally working wife *Job Satisfaction	H			-.023	.117
	W			-.200	.203
Job Satisfaction*Time	H			.007	.011
	W			-.021	.014
Dual continuous workers *Job Satisfaction*Time	H			.005	.017
	W			.048*	.022
Retiring husband/ continuous working wife *Job Satisfaction*Time	H			.046*	.023
	W			.018	.021
Dual part-time to retirement *Job Satisfaction*Time	H			.063	.040
	W			.021	.029
Retiring husband/ minimally working wife *Job Satisfaction*Time	H			.017	.016
	W			.030	.034
Continuous working husband/ minimally working wife *Job Satisfaction*Time	H			.015	.016
	W			.052	.031
-2 X Log Likelihood		35830.375		35901.207	
χ^2 change from previous step				25.061**	
Individual level intercept variance (*SE*)		.604	.036	.608	.036
Couple level intercept variance (*SE*)		.896	.058	.897	.058

Note. All covariates, main effects of trajectories, and trajectory by time interactions were included in these models. *$p < 0$ .05, ** $p < 0.01$. ***$p < .001$.

FIGURES

Figure 1.1. Convoy model of social relations for couples.
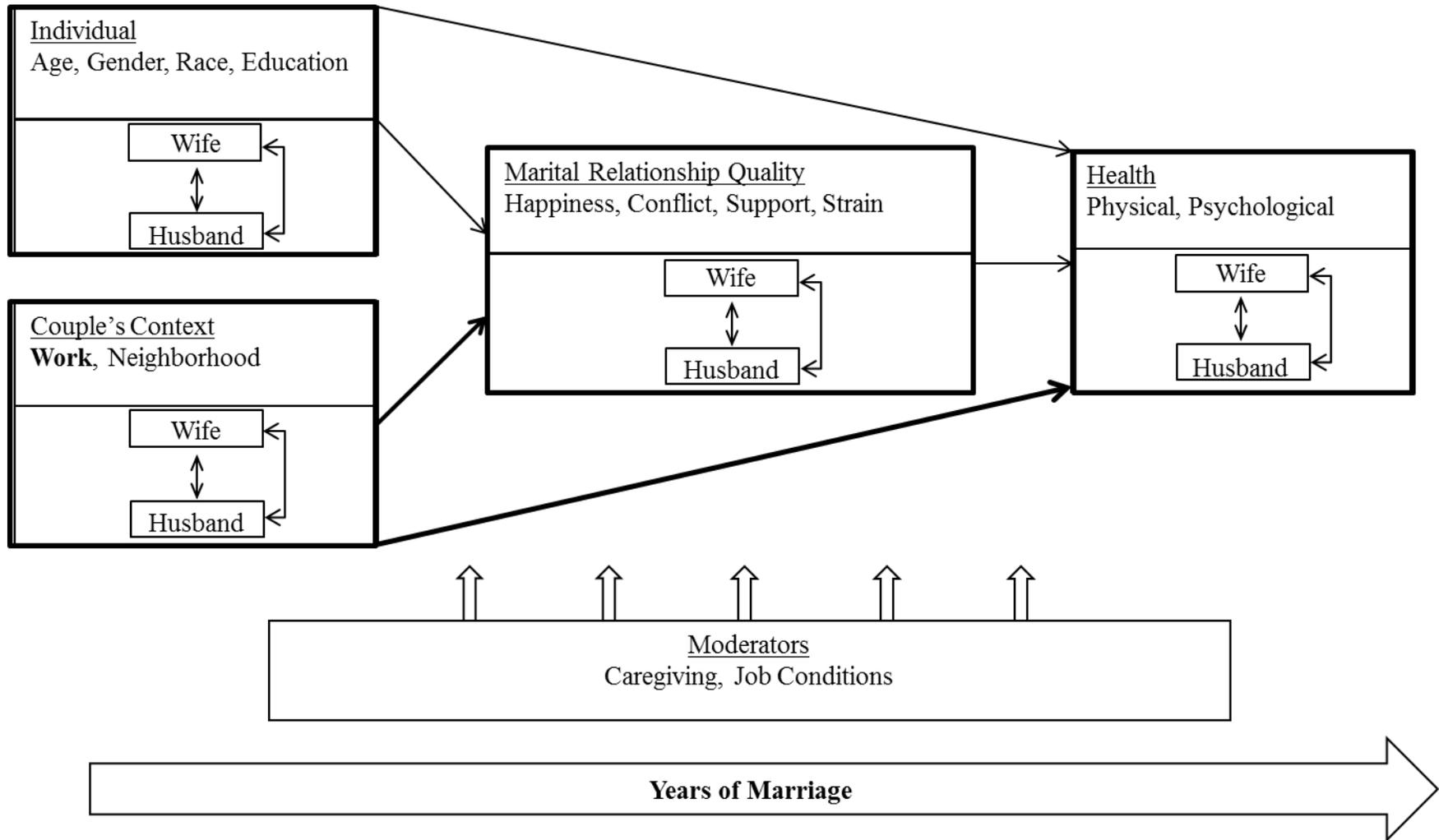
Figure 2.1. Convoy model of social relations for younger to middle-aged couples.

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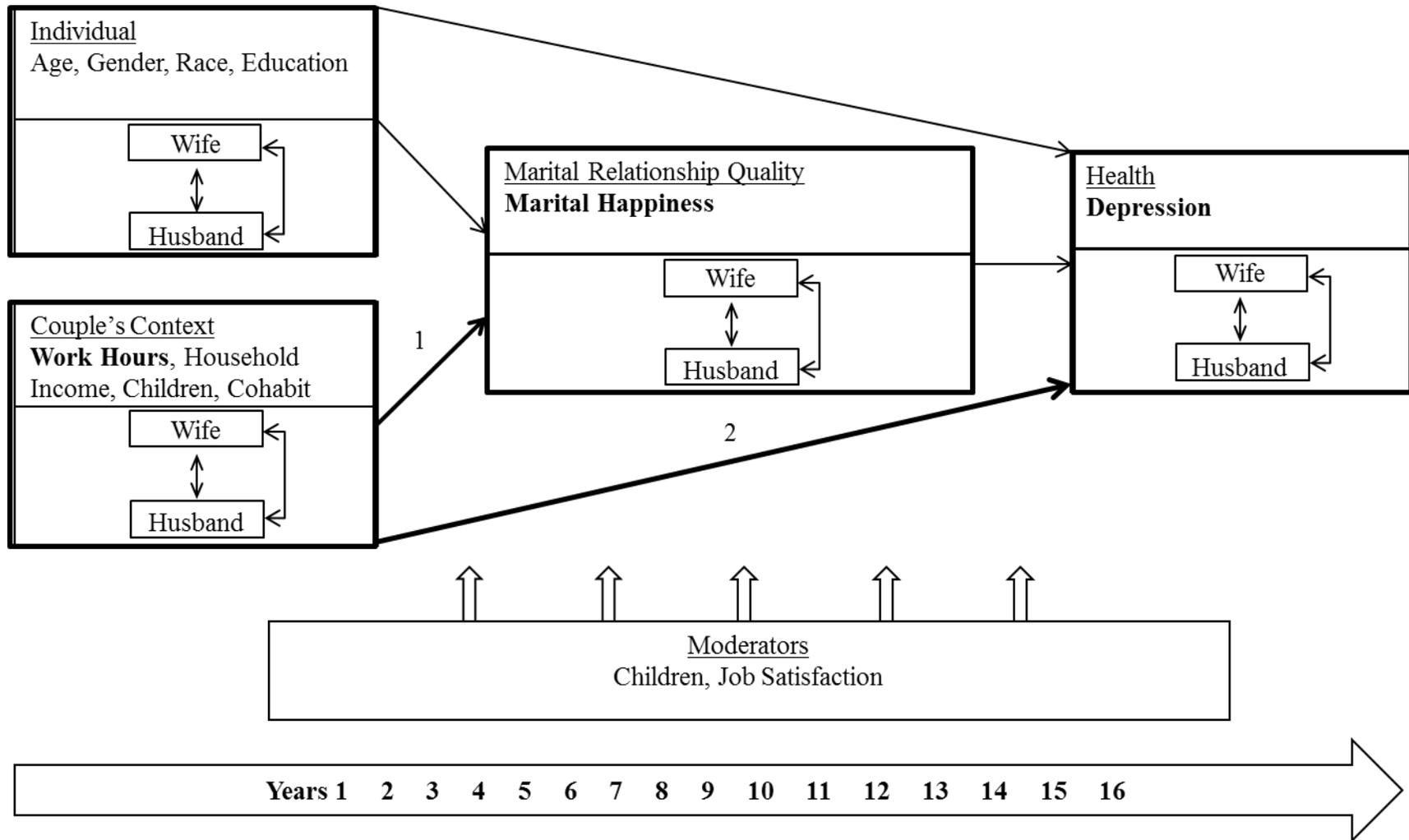
Figure 2.2. Couples' work hour trajectories over 16 years of marriage.
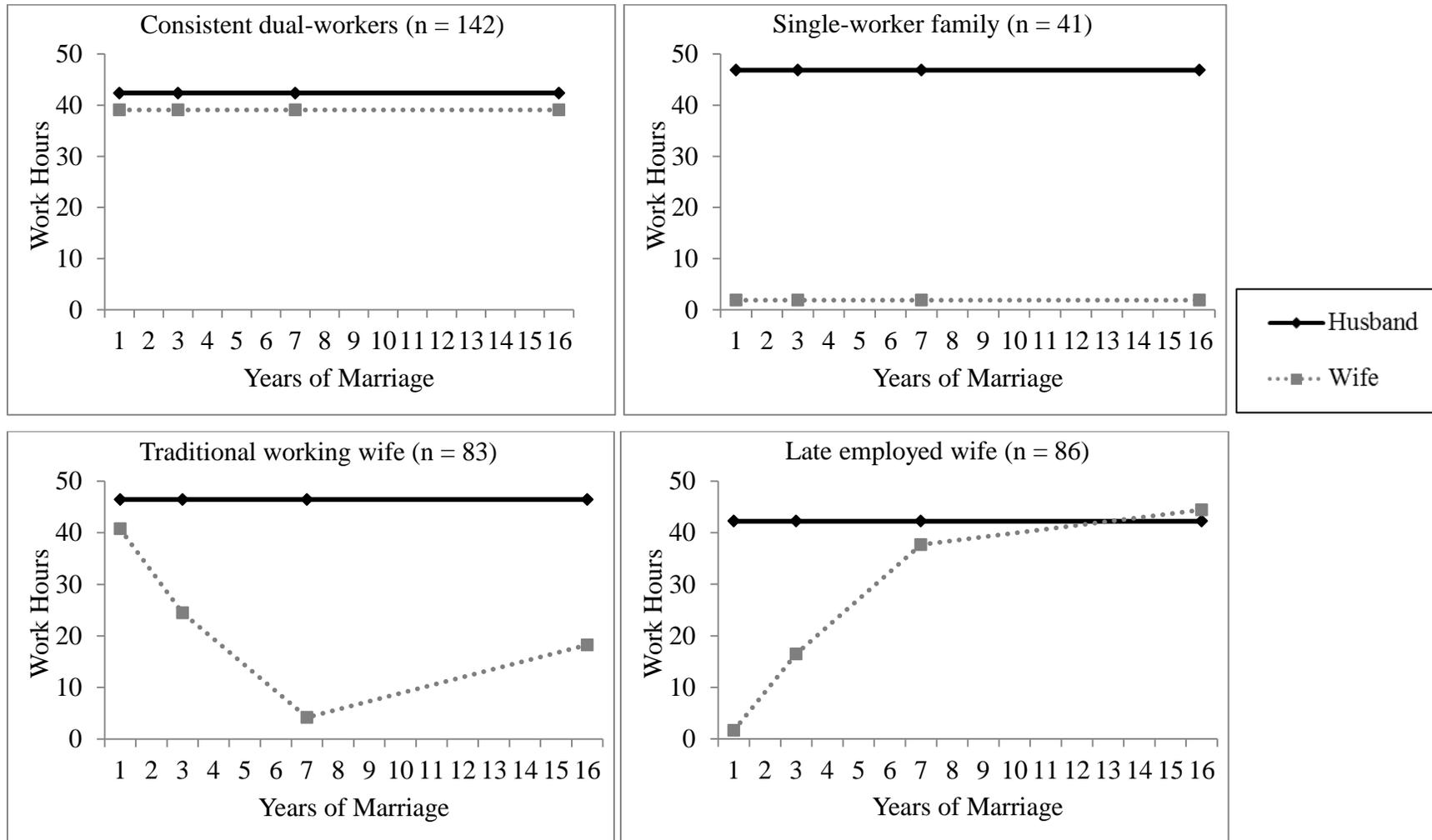
Figure 2.3. The interaction between time and number of children for couples in the consistent dual-workers and late employed wife trajectories. The slopes between the dotted lines represent the predicted changes in marital happiness when number of children increases by 1 SD.
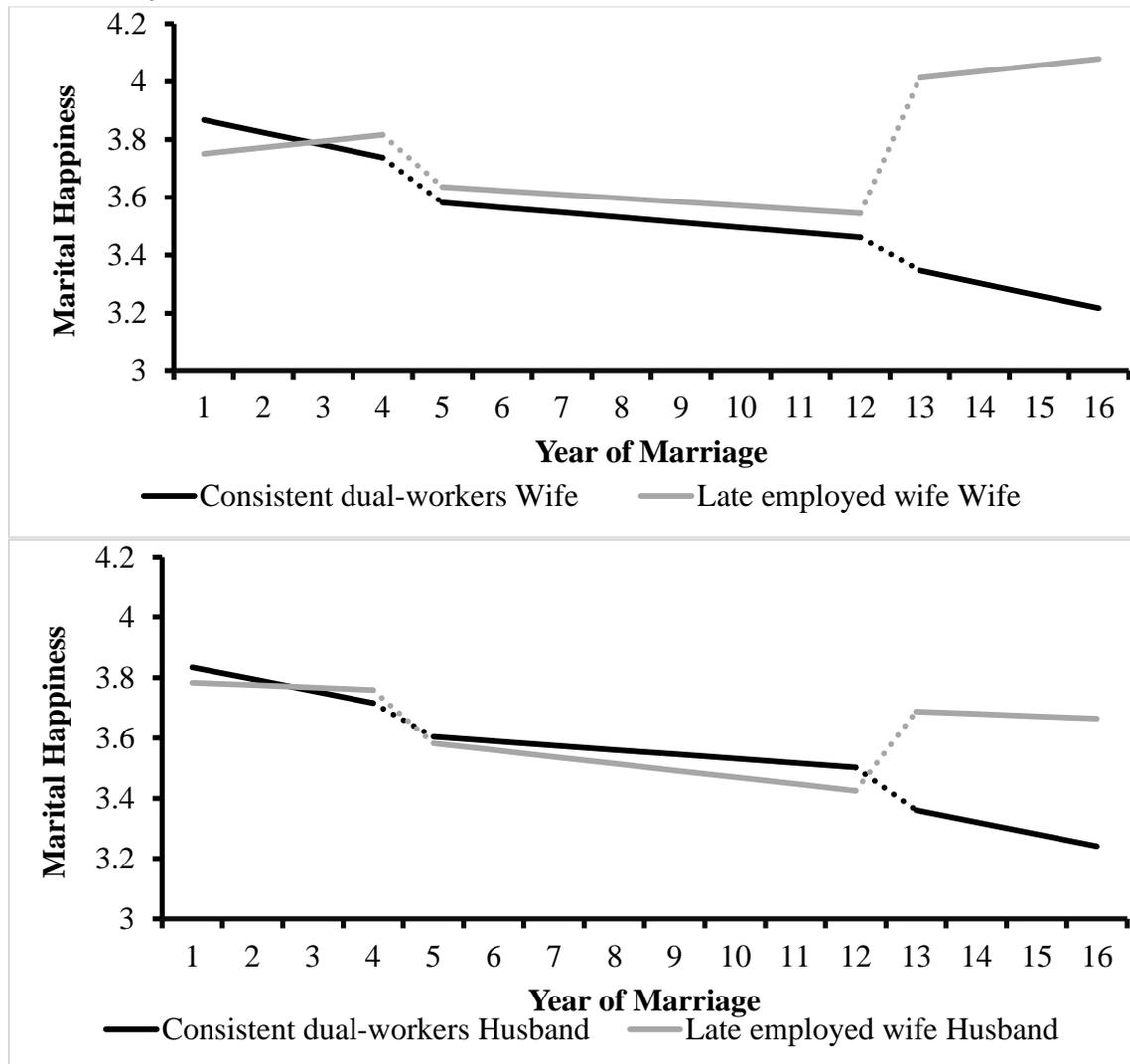
Figure 2.4. The interaction between time and job satisfaction for husbands in the consistent dual-workers and late employed wife trajectories. The slopes between the dotted lines represent the predicted changes in marital happiness when job satisfaction increases by 1 SD.

Figure 2.5. The interaction between time and job satisfaction for husbands in the consistent dual-workers and traditional working wife trajectories. The slopes between the dotted lines represent the predicted changes in depression when job satisfaction increases by 1 SD.

Figure 2.6. The interaction between time and job satisfaction for husbands in the consistent dual-workers and single-worker family trajectories. The slopes between the dotted lines represent the predicted changes in depression when job satisfaction increases by 1 SD.

Figure 2.7. Work hour trajectories for couples who remained married over 16 years.
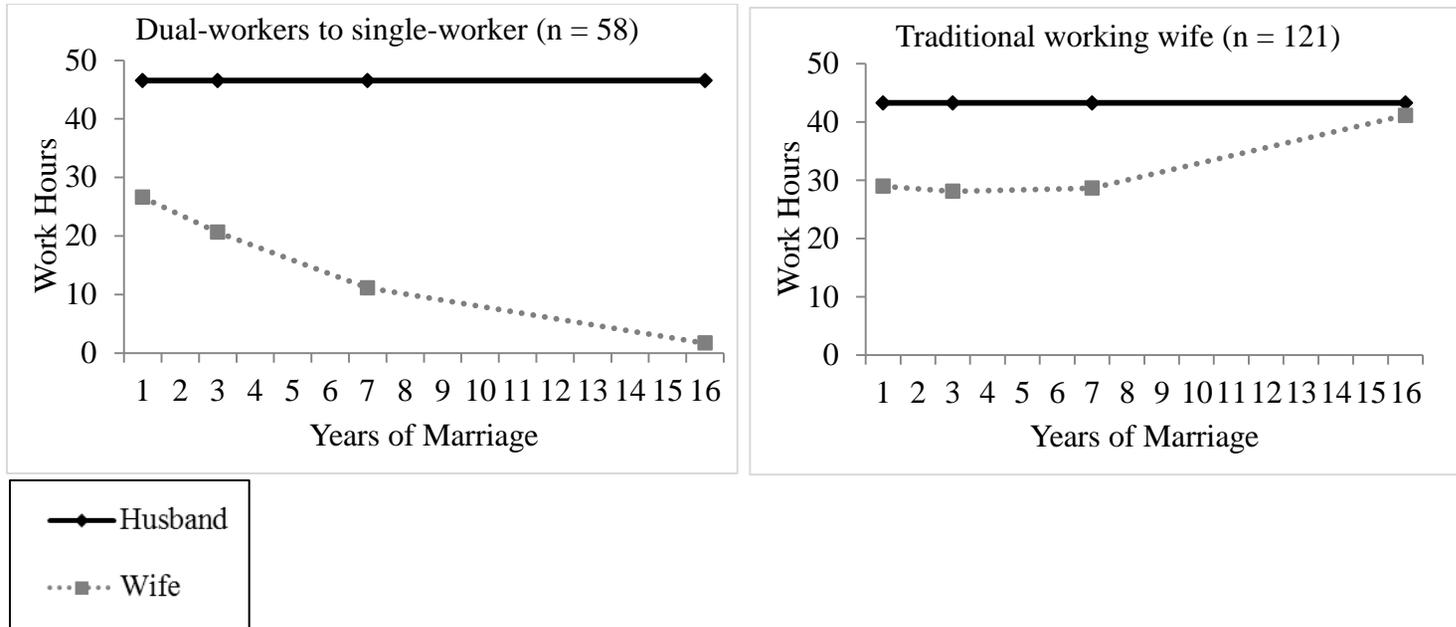
Figure 3.1. Convoy model of social relations for midlife and older couples.
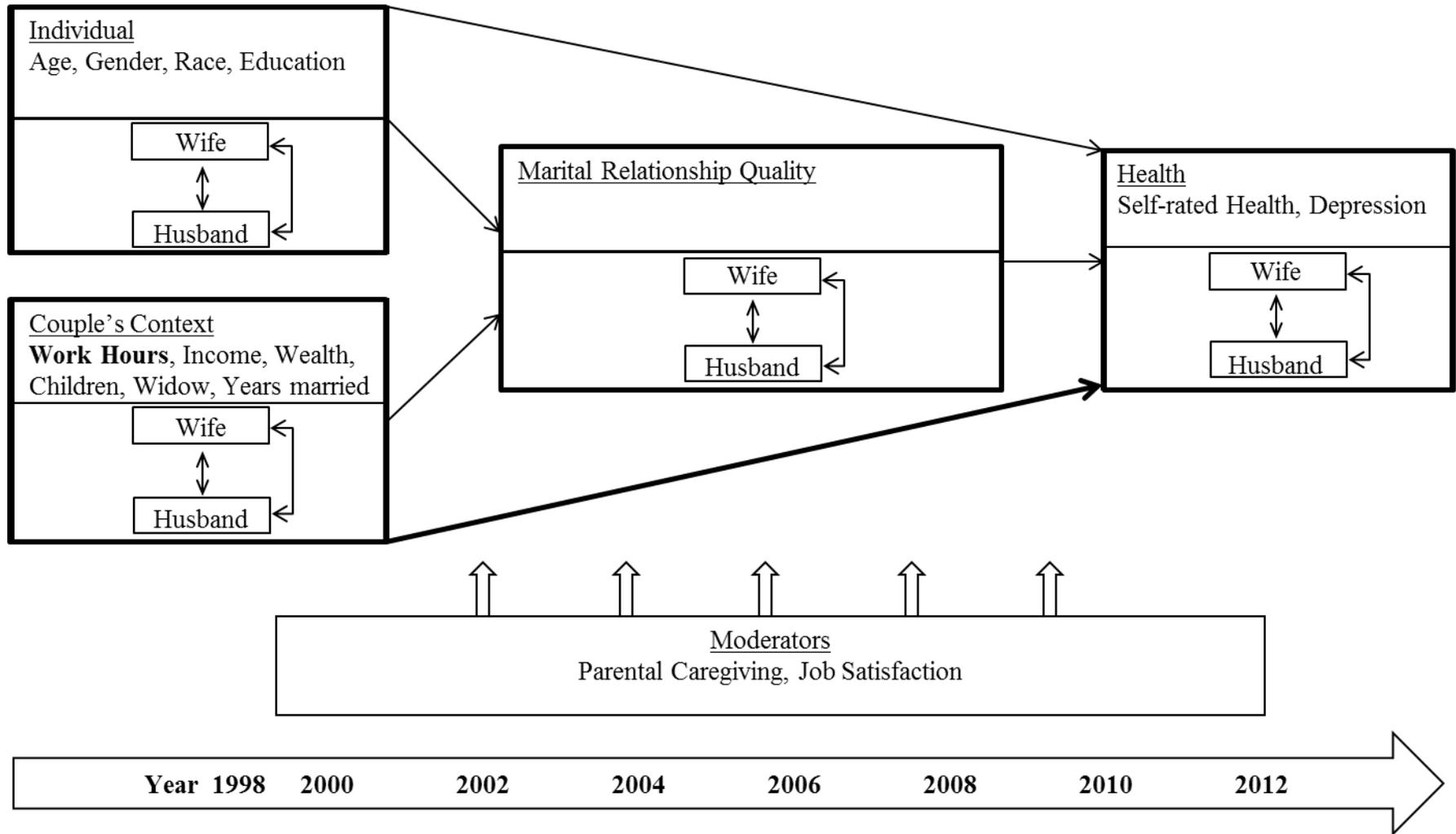
Figure 3.2. Couples' estimated work hour trajectories from 1998-2012 over 14 years of marriage.
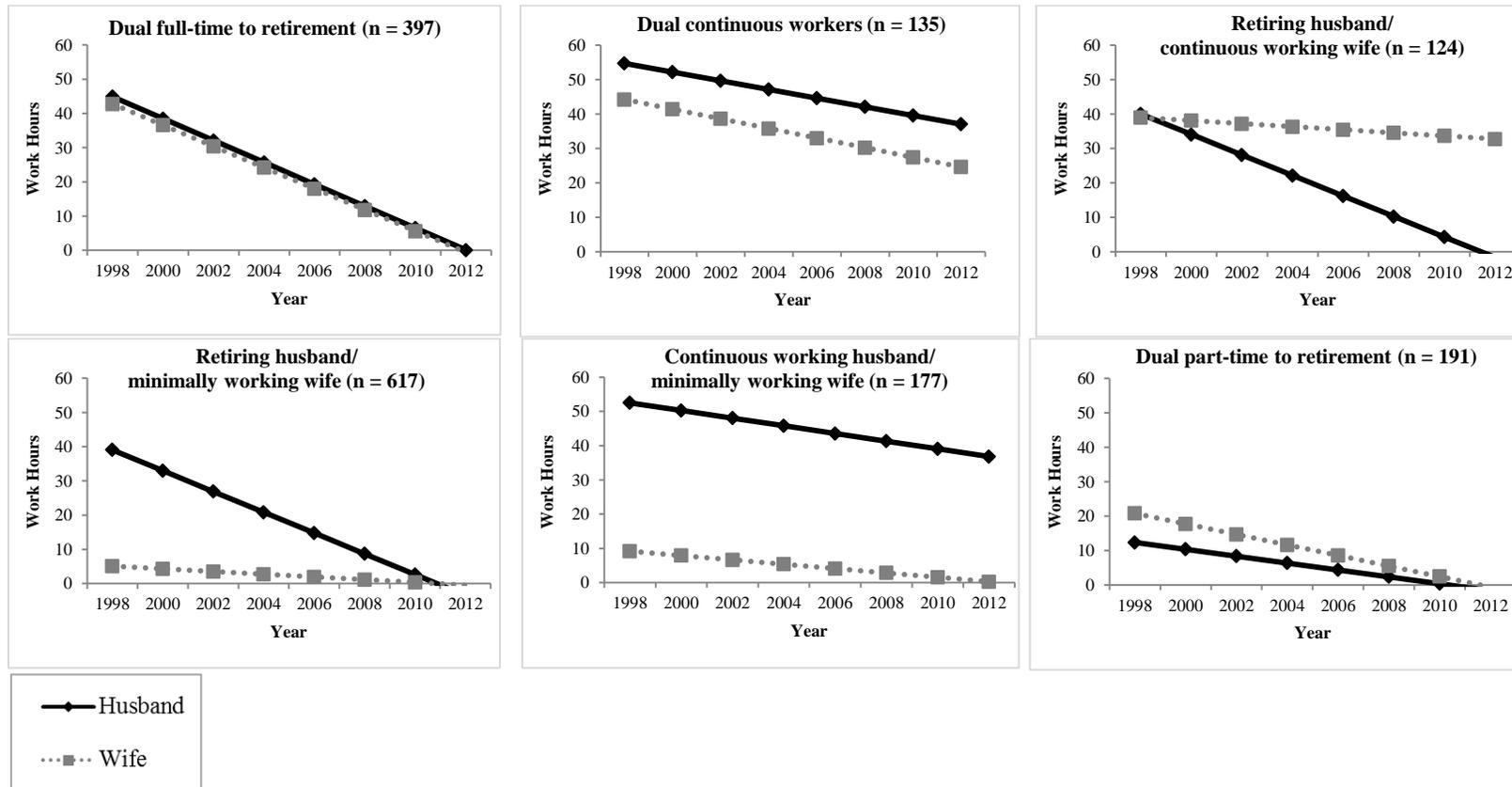
Figure 3.3. The interaction between time and parental caregiving assistance for husbands in the full-time to retirement and retiring husband/continuous working wife trajectories. The slopes between the dotted lines represent the predicted changes in self-rated health when the couples provided parental caregiving assistance.
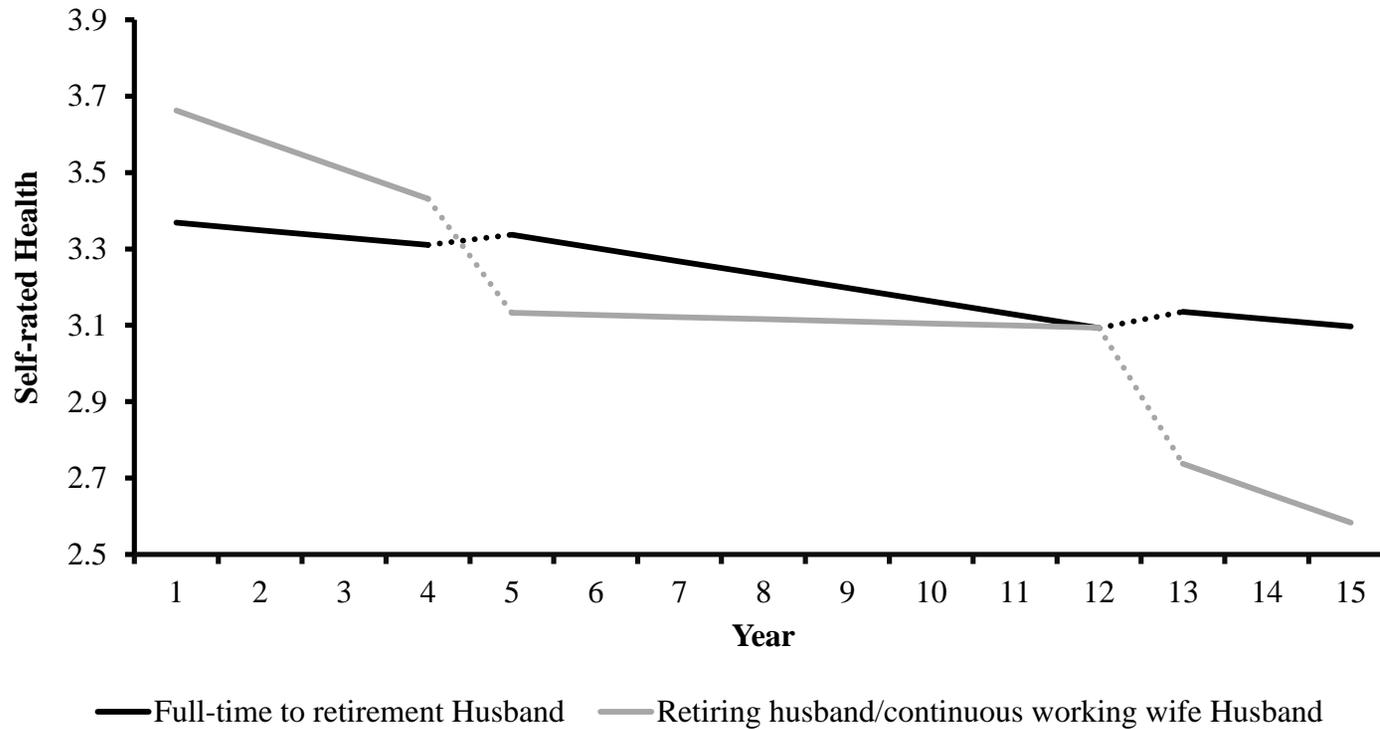
Figure 3.4. The interaction between time and job satisfaction for wives in the full-time to retirement and retiring husband/minimally working wife trajectories. The slopes between the dotted lines represent the predicted changes in self-rated health when job satisfaction increases by 1SD.
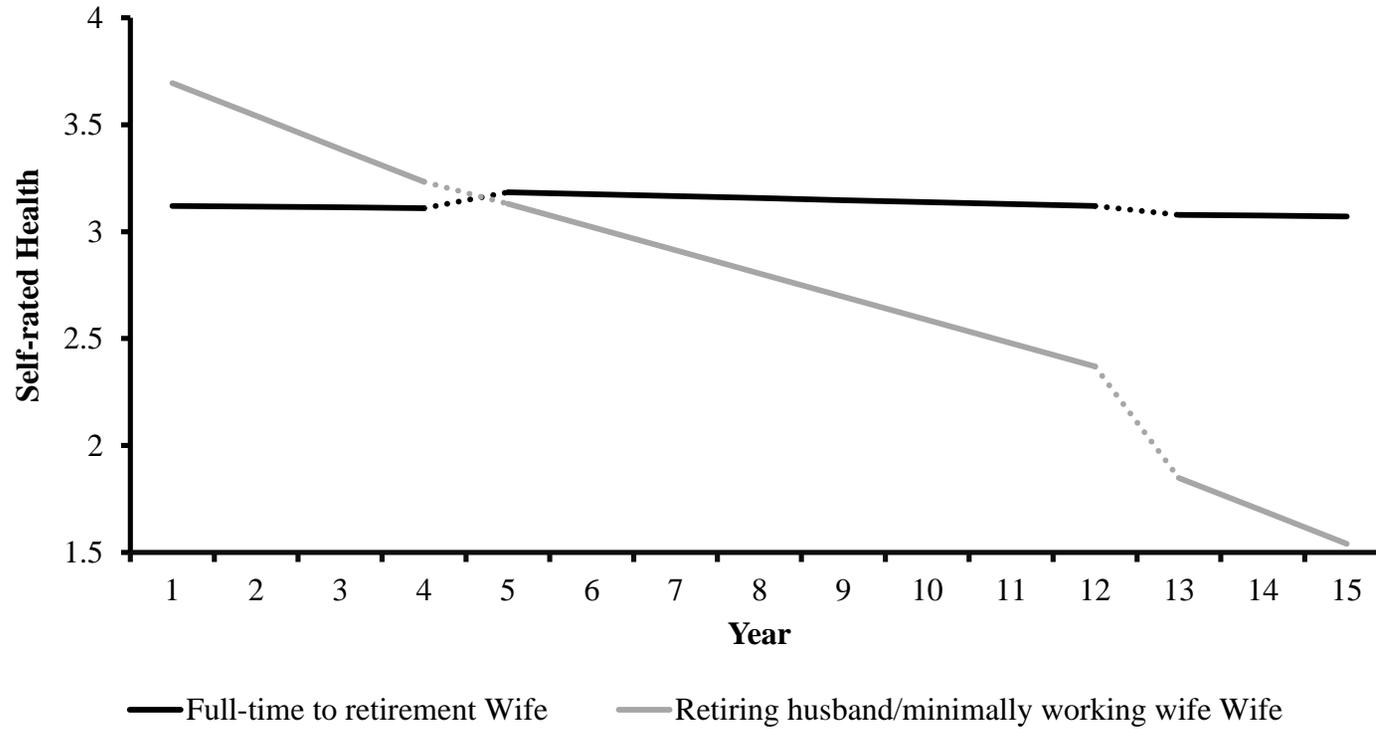
Figure 3.5. The interaction between time and job satisfaction for wives in the full-time to retirement and retiring husband/minimally working wife trajectories. The slopes between the dotted lines represent the predicted changes in depression when job satisfaction increases by 1SD.

Figure 3.6. The interaction between time and job satisfaction for wives in the full-time to retirement and dual continuous trajectories. The slopes between the dotted lines represent the predicted changes in depression when job satisfaction increases by 1SD.
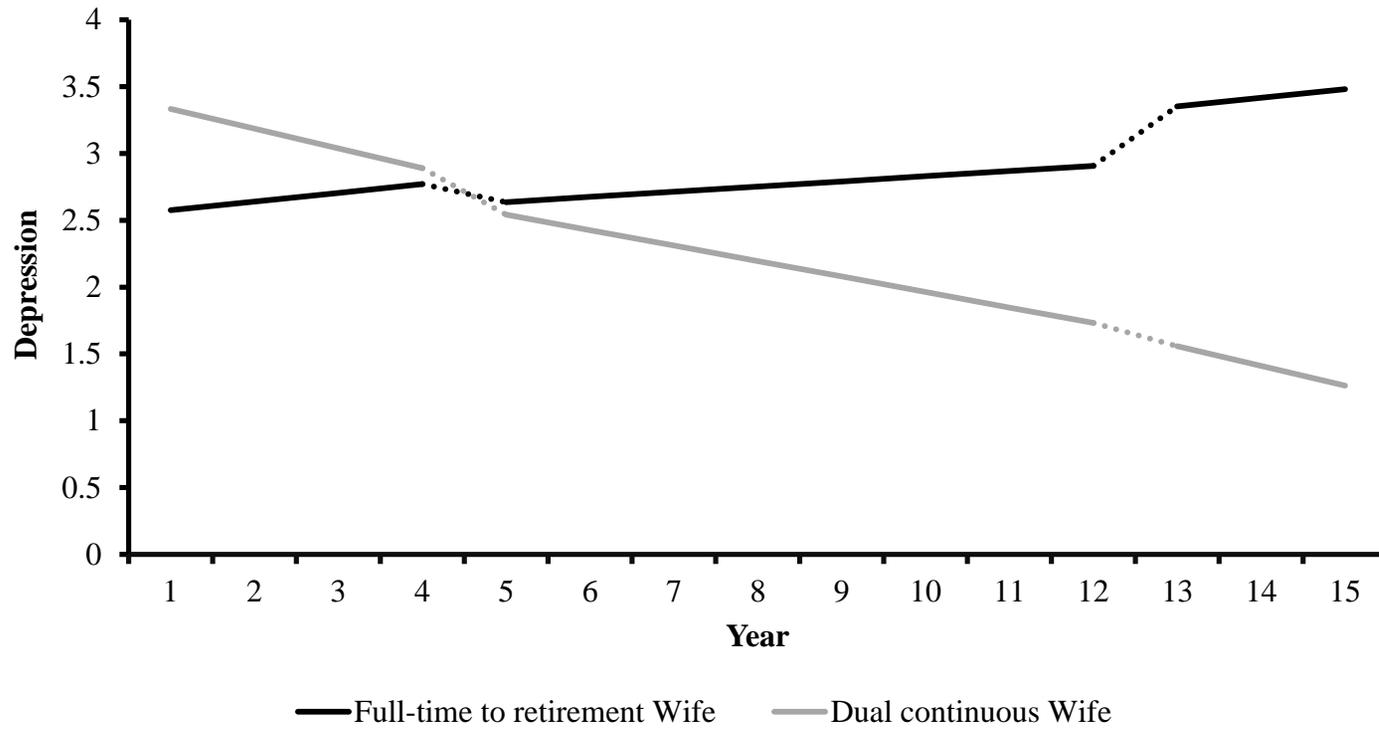
Figure 3.7. The interaction between time and job satisfaction for husbands in the full-time to retirement and retiring husband/continuous working wife trajectories. The slopes between the dotted lines represent the predicted changes in depression when job satisfaction increases by 1SD.