

THESIS

INDIVIDUAL PERSONALITY DIFFERENCES IN ADJUSTMENT TO RETIREMENT

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## ABSTRACT

### INDIVIDUAL PERSONALITY DIFFERENCES IN ADJUSTMENT TO RETIREMENT

Retirement is an important life event to study at present, because more people are entering their retirement years and are spending more time in retirement than ever before in our nation's history. Historically, research has shown mixed results on effects of retirement that are not accurately explained by any one theory. These mixed results suggest the possibility of individual differences in retirement adjustment that may not be accounted for with aggregated data. Wang, Henkens, and Shultz (2011) proposed a comprehensive framework of retirement adjustment: the resource-based dynamic perspective, which reasons that adjustment is influenced by antecedent variables, via level of resources possessed by the individual at a given time. The current study seeks to assess the relation between personality as an antecedent variable and retirement adjustment in a longitudinal analysis of participants from the nationally representative Health and Retirement Study. Resources are also modeled as covariates in the analysis. Results should be interpreted with caution due to limitations in model fit. Results from the Growth Mixture Model (GMM) revealed two classes of retirement trajectories and certain personality traits were significant as predictors for these trajectories. Implications for both research and practice are discussed.

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## CHAPTER 1

### **Introduction**

#### *Adjustment to Life Events across Adulthood*

Much has been written on adjustment to life events throughout adulthood (e.g., Schlossberg, 1981, 1991, 2004, 2009, 2011; Schlossberg & Robinson, 1996; Anderson, Goodman, & Schlossberg, 2012; Leibowitz & Schlossberg, 1982). Research on adults' adjustments to life events has commonly focused on the process of adjusting to chronic illnesses (de Ridder, Geenen, Kuijer, & van Middendorp, 2008; Stanton, Revenson, & Tennen, 2007) including cancer (Sherman, Kasparian, & Mireskandari, 2010; Roesch, Adams, Hines, Palmores, Vyas, Tran, & Vaughn, 2005), multiple sclerosis (Dennison, Moss-Morris, & Chalder, 2009), arthritis (Ramjeet, Smith, & Adams, 2008), burns (Klinge, Chamberlain, Redden, & King, 2009), and amputations (Hawamdeh, Othman, & Ibrahim, 2008; Horgan & MacLachlan, 2004). Additionally, research focusing on adjustment to transitions in adulthood includes job loss (e.g., Dew, Bromet, & Penkower, 1992; Leana & Feldman, 1991), the death of a spouse (e.g., Schulz et al., 2001), adjustment to marriage (e.g., Hall & Adams, 2011; Stanley, Ragan, Rhoades, & Markman, 2012), divorce (e.g., Togliatti, Lavadera, & Benedetto, 2011; Yárnoz-Yaben, 2010), parenthood (e.g., Gameiro, Moura-Ramos, Canavarro, & Soares, 2011; Halford, Petch, & Creedy, 2010), children leaving home (e.g., Deutscher, 1964; White & Edwards, 1990), and infertility (e.g., Bayley, Slade, & Lashen, 2009; Gourounti, Anagnostopoulos, & Vaslamatzis, 2010).

Factors known to influence adjustment in adulthood include personal as well as environmental variables. For instance, Lazarus and Folkman (1984) emphasized the need to consider individuals' appraisals of the transitions they are facing. The authors suggested that

people engage in two specific types of appraisals. The first is their overall appraisal of the situation – if it is positive, negative, or neutral. The second appraisal involves the individual’s appraisal of his or her own resources that he or she has to help cope with the new situation. Thus, the cognitive processes in which a person is engaging can influence the ease with which the individual adjusts to a new situation. Hulbert-Williams, Neal, Morrison, Hood, and Wilkinson (2012) found further support for the significance of appraisals with patients who had been diagnosed with cancer. In their analysis, the authors found that appraisals were more predictive of adjustment than were both emotions and coping. In looking at coping flexibility, Cheng (2003) found that the ability people have to handle stressful situations depends on both specific situational demands as well as how flexible they are with the coping strategies they use. In a study on workers who were displaced due to reduction in labor force, Schlossberg and Leibowitz (1980) found that individuals adjusted to job loss better when formal support at the organizational level was provided.

Several personal characteristics have been identified as correlates of adjustment quality. Optimism has been suggested to aid in overcoming challenges (Seligman, 2006), as well as self-efficacy (Rodin, 1990). Kilmann, Laval, and Wanlass (1978) found a connection between locus of control and adjustment to life events, such that those with an external locus of control reported a significantly more difficult adjustment to life events than did people with an internal locus of control. Environmental factors – such as support – are known to influence adjustment as well. Crowley, Hayslip, and Hobdy (2003) looked at the impact of psychological hardiness on adjustment in 88 individuals either who had lost their jobs or whose last child had left home. The interaction between overall hardiness and the experience of differential life events influenced both levels of positive affect as well as the use of planful problem solving and positive

reappraisal as coping mechanisms. Findings from this study also suggested that job loss was a more stressful experience for adults in this sample than was the transition to empty nest. Finally, the orientation of a person's mindset has been shown to be related to processes of adjustment. For example, those who embody a growth mindset are less susceptible to prolonged bouts of depression than those who do not hold such a mindset, as those with growth mindsets are more likely to take proactive steps in changing their situations or their perceptions that could be contributing to their depression (Dweck, 2006).

In attempting to explain how adults move through changes in life, Schlossberg (1981, 2011) proposed a model of transition. The transition model consists of three major parts: approaching transitions; transition identification and process; and taking stock of coping resources: the 4 S system (Goodman, Schlossberg, & Anderson, 2006, *p.* 32). This model describes transitions as life events that may carry both gains and losses, rather than explaining them as crises. This model particularly stresses the importance of resources for transitioning. Resources include contextual variables that the individual is simultaneously experiencing during the transition, the personal capabilities and internal resources the person has to cope with the situation, support from relationships, and strategies the person can use to change the situation or his or her perception of the transition. According to this model, the more resources a person can flexibly use, the more successfully he or she will adjust to the transition.

Carstensen (1993) also proposed a Socioemotional Selectivity Theory (SST) of adjustment to life events. The premise of this theory is that time perception is an integral part of people's perception and motivates their behavior. SST proposes that time-perception drives whether people pursue knowledge goals or emotion goals. Specifically, Carstensen et al. (2011) found in their study using measurement burst experience sampling that older adults were more

likely to seek-out emotionally enriching experiences, rather than more knowledge-rich experiences. In this way, adjustment to life events throughout adulthood changes from a more knowledge-attainment approach to a more emotionally enriching approach, as individuals perceive themselves as having fewer years of life ahead of them.

Experiencing major life events can carry both gains and losses for the individual. Although older theories of development saw adulthood as a time of constancy (Fenichel, 1945; Freud, 1923; Sapir, 1934), researchers and theorists over the past 50 years have come to recognize adulthood as a time of continued change, development, and transition (Hooker & McAdams, 2003; Vaillant, 1976). The transition to retirement is one such change that is faced by many older adults.

#### *The Importance of Retirement Adjustment*

Retirement is an important life event to study for several reasons. First, the face of retirement is changing as a result of the aging baby boom cohorts (those born between 1946 and 1964) and the number of people in the population who are and will continue to be entering retirement over the next several decades. The proportion of the population reaching retirement age is higher than it has ever been in the history of the U.S., and is projected to double by 2050 (Jacobsen et al., 2011). People are also living much longer, and, consequently, have more years to spend in retirement (Alley & Crimmins, 2007). Assuming that individuals will continue to retire at a similar age as in previous times, then people will be living as retirees for a larger portion of life. In particular, currently, people can expect to live four to five years longer after retirement than they were in 1950 (Board of Trustees, 2010, Table V.A). This difference is further expected to increase another two years by 2050. If people decide to work longer, however, than this increased period spent living in retirement may not occur. Because more



people are entering their retirement years and are spending more time in retirement, it is important to understand adjustment to the retirement process and quality of life in retirement.

### **Definitions of Retirement Adjustment**

Whereas early retirement researchers often viewed retirement as a time of stress and crisis (Barron, Strein, & Suchman, 1952; van Solinge & Henkens, 2008), more recently, researchers typically see retirement as a challenging life event with the potential for both beneficial and detrimental outcomes (Mein, Martikainen, Hemingway, Stansfeld, & Marmot, 2003; Wang, 2007; Wang, Henkens, & van Solinge, 2011; van der Heide et al., 2013; Kim & Moen, 2001; Mein et al., 2003). Part of this shift in paradigm is the result of research showing both positive and negative changes in outcomes in their participants following retirement. For example, Mein et al. (2003) found in their longitudinal study of 392 retired and 618 working civil service participants that retirement was not associated with any significant change in physical health, but was associated with an improvement in mental health. Due to the increase in the number of people entering retirement, and the topic's subsequent increase in popularity, the focus of the current literature has been directed toward establishing a more comprehensive and inclusive understanding of the diverse adjustment processes of retirees (Wang et al., 2011).

Researchers have defined retirement adjustment in several, yet related ways. These definitions typically include components of change (usually positive) and an obtainment of psychological comfort. Specifically, Atchley (1999) broadly conceptualized retirement adjustment as “a person's positive retirement experiences” (Donaldson, Earl, & Muratore, 2010, *p.* 280). In this definition, the positive elements of one's experience in retirement are indicative of adjustment.

Van Solinge and Henkens (2008) define retirement adjustment as “the process of getting used to the changed circumstances of life in retirement” (p. 423). Adjustment in this sense specifically refers to being and becoming familiar with the new experiences. In this definition, there is no indication of positive experiences being a necessary component of adjustment to retirement. The authors further distinguish adjustment to retirement from satisfaction with retirement. They argue that, differently from adjustment, satisfaction specifically means “contentment with one’s life in retirement” (p. 423). These authors conclude then that the positive elements of an individual’s experiences in retirement are more akin to satisfaction than adjustment. In making this distinction, Van Solinge and Henkens conclude that the transition to retirement involves two developmental challenges: first, adjustment to the loss of the work role and the social ties of work, and second, development of a satisfactory postretirement lifestyle. In this way, both concepts of adjustment and satisfaction are integrated into this view of retirement adjustment. Finally, Wang et al. (2011) and Goodman, Schlossberg, and Anderson’s (2006) studies both used definitions of retirement adjustment as the point at which retirees are no longer “preoccupied with the retirement transition but are comfortable with the changed circumstances of life in retirement (i.e., are able to integrate retirement into their lives)” (Wang et al., 2011, p. 204).

### **Measurement of Retirement Adjustment**

The construct of retirement adjustment has also been measured in a variety of ways across studies. For example, some have used inventories of adjustment (e.g., Donaldson et al., 2010 who used a self-report inventory of adjustment), whereas others have used retirement satisfaction scales (e.g., Gall et al., 1997; Quick & Moen, 1998), and still others have used variables such as depression (e.g., Isaksson & Johansson, 2000; Wang, 2007) or life satisfaction

(Calasanti, 1996) as proxies for adjustment. Other researchers have measured retirement adjustment through indicators such as happiness (Beck, 1982) or emotional well-being (e.g., Midanik, Soghikian, Ransom, & Tekawa, 1995; Richardson & Kilty, 1991).

Wang et al. (2011) highlighted the limitations and complications of using varying definitions and measures of retirement adjustment. Specifically, he and his colleagues argued that continuing to use such varied definitions could limit the generalizability and reliability of conclusions of these studies. Thus, the authors noted, having precise, comparable operational definitions and measures of this construct is important for furthering understanding of the topic. The authors proposed consistently measuring retirement adjustment as psychological well-being (for examples, see Kim & Moen, 2002; Wang, 2007) as a viable solution to this problem.

In conclusion, research that has considered the extent to which retirees are psychologically comfortable with the changed circumstances of life in retirement has commonly inferred retirement adjustment indirectly via other outcome measures. Recent literature has emphasized the need for more direct measures of adjustment, such as self-reports of retiree's difficulties in adjusting to retirement as well as the amount of time it took to adjust to retirement (Wang et al., 2011).

### **Theories of Retirement Adjustment**

The primary theories that have been used to understand the process of retirement adjustment are continuity theory, stage theory, role theory, the life course perspective, and the resource-based dynamic perspective (Wang et al., 2011).

***Role Theory.*** In combination with the life-course perspective, role theory (Kahn et al., 1964) has been one of the most commonly used frameworks for explaining the retirement adjustment process (Kim & Moen, 2002). In role theory, individuals' lives are assumed to be

structured around various roles that they assume or are assigned to by society (George, 1993; Adams, Prescher, Beehr, & Lepisto, 2002; Barnes-Farrell, 2003). According to this model, being able to fulfill one's role in life is directly related to one's identity, self-esteem, and well-being (Ashforth, 2001). Role theory proposes that in retirement the sense of identity that comes with a person's career (e.g., "I am a teacher") along with the corresponding environmental elements (e.g., social support, intellectual or physical challenge) can be lost when that person retires. Thus, this loss of role at retirement can lead to distress, including anxious and depressive symptoms, and decreased well-being (Strieb & Schneider, 1971).

However, the retiring individual can also acquire new roles through the transition. In the push-pull theory of retirement, the individual's attainment of new roles may be influenced by "push" factors – factors of the work-role that the individual finds undesirable, and "pull" factors – factors of the retirement role that the individual finds appealing (Barnes-Farrell, 2003). For example, the role of being a grandparent may become more salient for a person than his or her previous role of being an accountant. This new role could help mitigate the distress that comes from losing the old role. On the other hand, if the previous career role was a source of distress for the individual (for example, being an accountant took time and energy away from the person's role of being a grandparent), then the retirement transition from which the individual can acquire a new role or new emphasis on an existing role could provide a sense of relief (Adams, Prescher, Beehr, & Lepisto, 2002; Wheaton, 1990). In yet another instance, if a person is leaving a role he or she enjoyed (e.g., being an accountant) to a role the individual is not embracing of (e.g., being a grandparent), then this time of transition could be incredibly distressing as the person deals with the sense of losing something he or she loved, and enters a role he or she does not desire. Thus, role quality (Vandewater, Ostrove, & Stewart, 1997) is an

important factor to consider in the transition of roles for the retiring individual. The construct of role involvement or work centrality further plays a role in the feelings of loss an individual would feel in a role transition (Burke, 1991). The extent to which the individual's job is central to his or her identity and activities is the extent to which he or she will have trouble in adjusting to life in retirement. In summary, role theory purports that retirement could be either a time of relief from a stressful role, or a time of distress from loss of a central role. Either way, a change in well-being would be expected during the transition to retirement.

The utility of this theory for explaining retirement adjustment has been inadequately supported in research studies. Early cross-sectional research seemed at first to support at least part of this theory, finding that cohorts of retirees experienced more maladjustment than those who were employed (Kutner & Fanshel, 1956; Phillips, 1957). However, findings since then have not been as promising, indicating a potential cohort effect in the previous literature due to the cross-sectional analyses. More recently, in their study based on role theory, Wong and Earl (2009) found that only individual and organizational influences, and not role-related variables, predicted retirement adjustment. Work centrality (an essential component of role theory) was not predictive of adjustment in this study. Role theory has further been criticized because empirical studies utilizing role theory tend not to identify the mechanisms or underlying processes by which work role salience relates to retirement adjustment (van Solinge, 2013).

Though role theory has been commonly utilized in studying retirement and other life transitions, this theory has only partially been able to describe the diverse experiences of retiring individuals. Empirical studies suggest that role theory is lacking in its inclusion of non-role-related variables such as environmental and circumstantial influences.

*Continuity theory.* Although role theorists are more likely to view retirement as a transition, and in some cases, a crisis, continuity theorists would assume that retirement would allow the individual to maintain a similar lifestyle as he or she had before retirement. Thus, continuity theorists would expect to see comparable well-being levels in individuals before and after retirement. Broadly speaking, *continuity* in this model is described as a pattern of consistency over time (Atchley, 1999). The theory proposes that individuals tend to maintain their activities, values, identities, and lifestyle patterns throughout transitions in their lives (Atchley, 1999; Richardson & Kilty, 1991). The nature of this consistency can be internal (such as a sense of identity or well-being) or external (such as environmental factors). Thus, transitions should not invoke much, if any, change in the individual's way of living. In order to maintain similar lifestyle patterns in retirement, retirees may alternatively view retirement as another career stage or may choose to engage in bridge retirement (employment after retirement; Kim & Feldman, 2000).

Empirical support for the efficacy of continuity theory in explaining retirement adjustment has been inconsistent (Wang & Shultz, 2010; von Bonsdorff & Ilmarinen, 2013). George and Maddox (1977) found significant stability in life satisfaction among 57 older men over a 5-year period. The sample, however, combined both those who were continuously retired and those who retired between Time 1 and Time 2 of data collection. Consequently, the results may not precisely reflect the impact of actual retirement transitions on life-satisfaction changes. Wang and Bodner (2007), however, found in their nationally representative U.S. sample that 70% of retirees experienced little change in their transition to retirement. Using growth mixture modeling, Pinquart and Schindler (2007) also found three different patterns of life-satisfaction change during retirement in their nationally representative sample of 1,456 German participants.

The first group of retirees demonstrated a decline in satisfaction at retirement but an increase or stability in satisfaction following retirement. The second group showed a large increase in satisfaction at retirement followed by an overall decline in satisfaction. In the last group, retirees' satisfaction showed a slight temporary increase at retirement. Further evidence for differential experiences of adjustment to retirement was also found by Richardson and Kilty (1991). The authors found in their longitudinal study of 242 participants that, overall, well-being had declined between time of retirement and 6 months postretirement. More importantly, the authors found that retirees' patterns of change in well-being following retirement could be classified into three groups for whom well-being had either declined, improved, or had remained stable during the year following retirement. Based on these differences, Richardson and Kilty called for a dynamic view of retirement adjustment that would account for the various patterns of change in well-being that retirees experience over the course of their adjustment.

*Stage theory.* Adjustment is viewed in stage theory as a series of changes a person goes through when experiencing some type of change in life (van Solinge, 2013). Stage theory (Atchley, 1976) is characterized by a series of five stages that retired individuals move through while adjusting. These stages consist of a honeymoon stage early in the transition, a disenchantment stage, a time of reevaluating during the reorientation stage, and finally the stability stage in which individuals stay until their retirement ends.

Stage theory, although a popular way of explaining transitions in life, has not received substantial support from empirical studies of retirement adjustment (van Solinge, 2013). An issue with stage models is that they tend not to provide any time specifications for duration of stages, thus making it difficult to form hypotheses from its propositions (Fryer, 1985; van Solinge, 2013). Additionally, the rigidity of stages can limit the range of diverse experiences in retirement

for which this theory can account. Finally, some individuals may experience stages in different orders than others do, which further complicates the application of this theory.

*Life course perspective.* In recent years, as the methods and processes by which people retire diversify (Ekerdt, 2010), researchers have increasingly emphasized the importance of viewing retirement as a process and subsequently subscribing to a dynamic and temporal perspective of retirement (Shultz & Wang, 2011). The life course perspective is one such theory that has been heavily relied upon to capture the longitudinal and contextual attributes of retirement (Atchley, 1992; Donaldson et al., 2010; Kim & Moen, 2002; Moen, 1996; Moen, 2012; Potočnik et al., 2010; Quick & Moen, 1998; van Solinge & Henkens, 2008). The life course perspective integrates biological, social, and behavioral sciences (Elder, 1995, *p.* 103). The four central components of this theory are: lives in time and place; human agency; the timing of lives; and linked lives. This theory emphasizes the contextual embeddedness of life transitions, such as retirement, in addition to personal factors (Elder, 1995; Elder & Johnson, 2003; Kim & Moen, 2002). The life course perspective includes the following elements in its conceptualization of retirement adjustment: (a) transitions and trajectories, (b) contextual embeddedness, (c) interdependence of life spheres, and (d) timing of transitions (Szinovacz, 2003). Specifically, this theory purports that experiences in one sphere of a person's life are influenced by experiences in other domains (van Solinge, 2013). Contextual embeddedness and characteristics of the retirement transition are taken in to consideration as well when attempting to understand the heterogeneity of retirement adjustment (van Solinge & Henkens, 2008; Calvo, Haverstick, & Sass, 2009; De Vaus, Wells, Kendig, & Quine, 2007; Von Bonsdorff et al., 2009).

The use of the life course perspective has been beneficial in conceptualizing retirement adjustment in research studies. Donaldson, Earl, and Muratore (2010) found, for example, that



contextual factors, such as higher income and having better psychological and physical health, predicted better retirement adjustment. Kim and Moen (2002) similarly found that the contextual variables of the nature and timing of retirement as well as gender identity influenced individuals' ability to adjust to retirement. Szinovacz and Davey (2004) used a life course perspective to explain findings from their study that indicated that if a person was retired, but his or her spouse was still employed, the spouse's employment status significantly decreased the retired spouse's adjustment to retirement. The authors demonstrated that the interdependence of life spheres is an important element to consider in explaining retirement adjustment. Although the life course perspective encompasses many variables that influence adjustment and allows for inclusion of heterogeneous experiences, it has been criticized for failing to offer concrete hypotheses about how these contexts affect retirement adjustment. Wang et al. (2011) stated the need for a theoretical framework that accounts for the multiple contextual variables that contribute to the heterogeneity of retirement adjustment, while also allowing for concrete, testable hypotheses of the mechanisms by which these variables influence adjustment.

***Resource-based dynamic perspective.*** Findings supporting any of the previously presented theories have been mixed, or lacking in their ability to explain mechanisms by which variables influence retirement adjustment. In their 2011 review, Wang et al. integrated the major theories that have been applied to the study of retirement adjustment into their own framework of retirement adjustment – a resource-based dynamic process (*Figure 1.*). The authors argued that this theory reconciled the seeming contradictory findings throughout the literature on retirement adjustment. It was apparent by the authors' review of the empirical literature, that existing theories were able to describe only a subset of retirees, and were not flexible enough to encapsulate all retirees' unique retirement adjustment processes, or all aspects of retirement

adjustment. The resource-based dynamic process of retirement adjustment posits that the changes seen across the retirement adjustment span can be explained by changes in resources – such as health, cognitive ability, mood, finances, and social support – rather than role change, continuity, or stage of life. The theory explains that the more resources a person has to fulfill his or her needs, the better that person will adjust to retirement. Conversely, a retiree lacking in resources will experience poor adjustment to retirement. Adjustment then, is a direct product of resources. Based on this perspective, Wang et al. contended that variables that directly influence the resources a retiree has should be addressed in the study of retirement adjustment. From this perspective, individual differences are antecedents that influence resources, such as planning, which then influence adjustment to retirement. Personality, as an antecedent of the resources that influence retirement adjustment, will be further explained in the hypotheses development section of this paper.

Although early retirement literature suggested the possibility of differential experiences of retirement adjustment, recent studies have further strengthened this position through utilizing longitudinal designs, more representative samples, and stronger statistical methods (Pinquart & Schindler, 2007; Wang, 2007; Richardson & Kilty, 1991). Findings in the current literature imply that, for some, satisfaction declined following retirement. For others it increased, and yet for another group of retirees, their retirement satisfaction levels stayed about the same. Importantly, Pinquart and Schindler (2007) found similar results and identified that these groups were different on age at retirement, gender, socioeconomic and marital status, health, unemployment before retiring, as well as region in which they lived. The authors further found that people who had more of these resources were less likely to experience change in life-satisfaction during the time span following retirement. Not only do these findings suggest a

differential experience of retirement, depending on contributing factors, but they also support the perspective of retirement adjustment as a process that unfolds over time.

Furthermore, Wang (2007) found three different adjustment paths that emerged from his longitudinal study of 2 samples of 1,994 and 1,066 participants from the Health and Retirement Study (HRS). Wang labeled these paths as the maintaining pattern, the recovering pattern, and the u-shape pattern, based on the trajectory of each group's adjustment over time. Specifically, the maintaining pattern profile demonstrated a lack of change in life satisfaction across the retirement transition. This pattern was consistent with findings that supported the continuity theory of retirement adjustment (Gall et al., 1997; Midanik et al., 1995). The recovering pattern showed a gradual increase in life satisfaction over the course of the transition. This pattern was consistent with role theory and life course perspective. According to role theory, retirees who are stressed or dissatisfied with their job will experience an increase in life-satisfaction following the retirement from their job. In line with the life course perspective, although there was an initial drop in life-satisfaction experienced by these retirees, their life-satisfaction levels ultimately increased over time. Finally, retirees who demonstrated a u-shaped pattern of adjustment experienced a drop in life-satisfaction initially after retirement, with a return to pre-retirement satisfaction levels over time. This pattern is consistent with assumptions of role theory, continuity theory, and the life course perspective.

***Summary of theories.*** Role theory, continuity theory, stage theory, and the life-course perspective all have elements that are useful for describing and understanding the retirement adjustment experience. However, none of them is adequate to describe the various trajectories of adjustment that retiring individuals experience as well as the mechanisms by which these trajectories differ. The resource-based dynamic perspective, however, accounts for multiple

factors contributing to retirement adjustment, allows for inclusion of heterogeneous experiences of the retirement adjustment process, and includes an explanation of mechanisms through which variables influence retirement adjustment. Thus, this model informs the hypotheses for the current study.

### **Empirical Findings on Adjustment to Retirement**

Wang et al. (2011) reviewed the retirement adjustment literature at the time, and suggested a two-part framework for organizing the findings on retirement adjustment: impact of retirement on the individual and the quality of retirement adjustment. This same two-part framework will be utilized here as well. Literature in this area since this review has also been added to this section. The key research questions in this literature have been focused on the process of retirement adjustment and on how this process influences the quality of retirement adjustment.

*Impact of retirement on the individual.* The psychological and physical health outcomes of retirement have been a significant focus in the retirement adjustment literature. Findings from studies in this area have indicated significant heterogeneity in how retirement affects people. There are studies that have found a negative effect of retirement on psychological well-being, a positive effect, and no significant effect. The same holds true for the literature focusing on the health outcomes of retirement. Below, the literature on retirement adjustment and psychological well-being will be discussed, followed by a review of the literature on retirement adjustment and physical health.

*Psychological well-being.* Some studies have shown a negative impact of retirement on the individual. These studies revealed that those who have been retired for over two years tend to report greater depression and loneliness, lower life satisfaction and happiness, a less positive

view about retirement, and lower activity levels, compared to those who were either still in their primary career jobs or who were only recently retired (Kim & Moen, 2002; Richardson & Kilty, 1991). Dave, Rashad, and Spasojevic (2008) found in their study of people across seven waves of the HRS, that full retirement was associated with a decline in mental health.

Conversely, there have been several studies showing a positive effect of retirement on the individual. For example, Dorfman (1992) found that most individuals tend to look forward to retirement, and Calasanti (1996) found that people also tend to report being satisfied with retirement. Mein et al. (2003) found in their longitudinal study of British civil servants that retirement was associated with an increase in mental health.

Finally, there have been studies that have revealed neither positive nor negative effects of retirement on psychological well-being. Gall et al.'s (1997) longitudinal study, for example, suggested that retirement had no apparent impact on an individual's well-being. Similarly, in a cross-sectional group comparison, minimal differences in measures of mental health, coping, and health behaviors were reported between workers and retirees within a similar age range (Wu, Tang, & Yan, 2005).

*Physical health.* Similar to the literature assessing the effect of retirement on psychological well-being, the research looking at physical health as an outcome has shown mixed results. Some studies have suggested that retired individuals experience improvements in their physical health. Westerlund et al. (2009) investigated more than 14,000 members of a French occupational cohort seven years pre and postretirement and found that retirement was associated with an improvement in health. On the other hand, some studies have suggested a decline in health following retirement. Dave, Rashad, and Spasojevic (2008) found in their study of people across seven waves of the HRS, that full retirement was associated with increases in

illnesses as well as difficulties in mobility and daily activities over an average postretirement period of six years. Finally, some studies have suggested no significant effect of retirement on physical health. A longitudinal study of British civil servants by Mein et al. (2003) found that retirement had no effect on physical health.

It is important to note that many of these studies did not simultaneously assess psychological well-being, so the relation between well-being and health in the retirement transition is unknown. Some of these studies have measured effects of both separately, but did not look at the joint effects. These mixed results are also consistent with findings of heterogeneous patterns of retirement adjustment within single samples. Wang (2007) and Pinquart and Schindler (2007) both found multiple paths of adjustment in their samples. These mixed findings suggest that the possibility of multiple patterns of retirement adjustment should be considered in future studies in order potentially to reconcile these disparate findings.

***Factors that influence retirement adjustment quality.*** Wang et al. (2011) identified five primary predictors of retirement adjustment quality that have been addressed in the literature: individual attributes, preretirement job-related variables, family-related variables, retirement transition-related variables, and postretirement activities.

*Individual attributes.* Multiple individual attributes have been shown to be related to retirement adjustment quality. These attributes include physical and mental health, financial status, as well as personality variables. Physical health is perhaps one of the most robust indicators of retirement adjustment (Atchley, 1982; Wang et al., 2011) with many studies confirming this relation. Dorfman (1992) found in her study of 104 retiring academics that physical health was related to satisfaction both before and after retirement. Quick and Moen (1998) confirmed in their study of 458 retirees that physical health was a significant indicator of

retirement quality. Kim and Feldman (2000) further found that good health was significantly related to bridge employment and that retirees in good health were significantly more likely to be satisfied with retirement and with their lives in general. Donaldson et al. (2010) found in their sample of 570 semi-retired and retired men and women that health significantly predicted retirement adjustment. A decline in physical health following retirement has also been linked to a decrease in retirement adjustment (Kim & Moen, 2002; van Solinge & Henkens, 2008; Wang, 2007). Van Solinge and Henkens (2008) identified health as a key resource for retiring individuals as they confirmed in their study of 778 Dutch employees. Kubicek et al. (2011) further confirmed in their study of retirees from the Wisconsin Longitudinal Study that physical health was positively related to well-being in retirement. Additionally, these authors found that impaired health before retirement was an indicator of lower levels of psychological functioning after retirement.

Another factor that contributes to retirement adjustment quality is mental health. Psychological well-being is typically seen as an indicator in and of itself of retirement adjustment. Kim and Moen (2002) found that prior levels of psychological well-being influenced later psychological well-being in retirement. Wang (2007) also found an association between pre-retirement well-being levels and well-being following retirement. Finally, Donaldson et al. (2010) found in their sample of 570 semi-retired and retired workers that having better psychological health was related to better retirement adjustment.

Financial status is another significant contributor to retirement adjustment quality. Specifically, Gall et al. (1997) found that retirees in the first year of retirement reported an increase in financial satisfaction pre-retirement to one year post-retirement, indicating the presence of a honeymoon phase (Atchley, 1971) immediately following retirement. The authors

also found that financial satisfaction remained stable at 6-7 years postretirement. Quick and Moen (1998) found that postretirement income was positively related to retirement quality for women in their sample. Donaldson et al. (2010), in their sample of 570 retiring individuals, found that higher income was related to retirement adjustment. Finally, Kubicek et al. (2011) found that financial assets were related to psychological well-being more strongly for men than for women in their sample.

*Preretirement job-related variables.* Many factors of pre-retirement work are also related to retirement adjustment quality. These factors include job challenges, job satisfaction, unemployment before retirement, and work role identity. Wang (2007) found that retirees who previously held a highly stressful job were more likely to experience positive changes in psychological well-being after retirement than were their counterparts. However, van Solinge and Henkens (2008) did not find a significant relation between preretirement job challenges, such as demanding work, and adjustment in retirement. Wang also found that job satisfaction before retirement was negatively related to retirees experiencing well-being after retirement. Specifically, retirees who had low job satisfaction at their preretirement job were more likely to experience positive changes in psychological well-being compared to retirees who had high job satisfaction at their preretirement job. Kubicek et al. (2011) further found this effect to be true for men more so than for women. However, Quick and Moen (1998) previously had found that for men, having an enjoyable preretirement job was related to retirement adjustment quality. The authors had found that low work-role salience prior to retirement had been positively associated with retirement quality, but only for men in their sample. Finally, Pinquart and Schindler (2007) found that individuals who had been unemployed immediately preceding retirement experienced



an increase in satisfaction following retirement, indicating that individuals previously unemployed may view retirement as a welcomed change.

*Family-related variables.* Several family-related variables have been shown to predict retirement adjustment. These variables include marital status, marital quality, number of dependent children, and loss of a partner. In regards to marital status, Pinquart and Schindler (2007), using latent growth mixture modeling, found in their sample of 1,456 German retirees that marital status, along with other demographic variables, predicted group membership in retirement adjustment patterns. Specifically, those who were married showed higher levels of life satisfaction in retirement than those who were not married. Additionally, if a retired person is married, but his or her spouse is still working, than he or she is more likely to experience a negative effect on his or her retirement adjustment (Wang, 2007). Rosenkoetter and Garris (1998) found that retirees who were happier with their marriages were more likely to have positive transitions to retirement. Szinovacz and Davey (2004), utilizing data from the HRS, found in their sample of individuals who were continuously employed or fully retired, that adjustment to retirement was indirectly enhanced when retirees' wives retired simultaneously. This, however, was only the case if the couples reported enjoyment of joint activities. Similarly, Wang found that retirees with a higher marital quality were less likely to experience a decline in well-being following retirement. Kim and Feldman (2000) found that the number of dependent children a retiree had was negatively related to the retiree's retirement adjustment quality. However, having dependent children was associated with an increased likelihood of accepting bridge employment, which in turn was associated with increased well-being in retirement. Van Solinge and Henkens (2008) noted that perhaps even more indicative of retirement adjustment was not whether a retiree was partnered, but rather if their partnership status changed during the

transition. Not surprisingly, the authors found that losing a partner during the transition to retirement was associated with a decrease in retirement satisfaction.

*Retirement transition-related variables.* Factors surrounding the retirement transition are also predictive of adjustment. These variables include the voluntariness of the retirement, retirement planning, retirement timing, and reasons for retiring. Reitzes and Mutran (2004) found in their study of retiring workers in North Carolina that both retirement planning and the voluntariness of retirement increased positive attitudes toward retirement before retirement, but not in the first two years after retirement. Van Solinge and Henkens (2005, 2008) and Donaldson et al. (2010) also found positive effects of voluntariness on retirement adjustment quality. Quick and Moen (1998) found that those who planned more for their retirement were more likely to say that retirement was better than preretirement life. The authors also found that men and women who retired at the age that they had expected to retire were more likely to report that they were very satisfied with retirement. The authors further found that retiring for health reasons had a negative effect on adjustment quality, whereas retiring in order to do other activities or to receive financial incentives had a positive effect on the retirement adjustment quality of participants. Wang (2007) found that those involved in preretirement planning were more likely to experience minimum changes in psychological well-being during the retirement transition than retirees who engaged less in retirement planning. Additionally, Wang found that retirees who retired earlier than they expected were more likely to experience lower levels of psychological well-being in their retirement transition.

*Post-retirement activities.* Activities in which an individual engages after retiring can also contribute to his or her quality of adjustment. Activities that have been found to be influential in

this process include bridge retirement, volunteer work, and leisure activities. How an individual feels about engaging in social situations during this time can also be influential.

Kim and Feldman (2000) found that retirees who engaged in bridge employment (who were employed after retirement) were more satisfied with retirement and life overall. Additionally, the authors found that engaging in volunteer work and leisure activities enhanced the positive effect that bridge employment had on adjustment to retirement. Wang (2007) also found that retirees who held a job after retirement were more likely than those who did not to maintain their preretirement psychological well-being during the retirement transition. Zhan, Wang, Liu, and Shultz (2009) found a similar effect of bridge employment in their sample of retirees from the Health and Retirement Study. The authors specifically found that those who engaged in bridge employment (regardless of whether their job was in the same field as their preretirement job or not) were less likely to have major diseases and functional limitations. They also found that retirees engaging in a bridge job from the same career field as their preretirement job tended to have better mental health than those who were fully retired from the workforce.

The positive effects of volunteer work on retirement adjustment quality have been briefly addressed in the literature. Kim and Feldman (2000) found that retirees engaging in volunteer work further enhanced the effect that bridge employment had on retirement adjustment. Dorfman and Kolarik (2005) found in their study of 54 retired and 17 employed professors, utilizing both quantitative and qualitative methods, that volunteer activities were the most frequently reported leisure activity. In qualitative interviews, retirees reported that volunteering was extremely personally rewarding, and it often posed an opportunity to continue using professional skills. McMunn, Nazroo, Wahrendorf, Breeze, and Zaninotto (2009) found in their study of retirees from the English Longitudinal Study of Ageing that those who were involved in voluntary work

had higher well-being than those who did not volunteer. However, the authors found that volunteers who felt they were not adequately rewarded for their efforts did not differ in well-being from retirees who did not volunteer. Sneed and Cohen (2013) found in their study of participants from the HRS that those who volunteered at least 200 hours in the 12 months prior to baseline were less likely to develop hypertension and were more likely to experience increased psychological well-being. This study did not differentiate retirees from non-retirees in their analysis; however, employment status (employed or not employed) was held constant. Potocnik and Sonnentag (2013) found in their study of 2,813 retirees from the Survey of Health, Ageing and Retirement in Europe (SHARE) that volunteering and providing help was associated with an increase in retirees' quality of life 2 years later. While many more studies exist that have found positive effects of volunteering in older adulthood in general (e.g., Burr, Tavares, & Mutchler, 2011; Dulin, Gavala, Stephens, Kostick, & McDonald, 2012; Hank & Erlinghagen, 2010) more studies specifically looking at this effect for people adjusting to retirement should be pursued.

Engagement in leisure activities has also shown a positive effect on retirement adjustment. For example, Dorfman and Kolarik (2005) and Kim and Feldman (2000) both found positive effects of leisure activity on retirement adjustment. Kim and Feldman found that engaging in leisure activities enhanced the positive effect that bridge retirement had on retirement adjustment. Dorfman and Kolarik found from qualitative interviews that most (82%) of the retired professors in their study participated in leisure activities, and the authors suggested this may be an important component of promoting continuity throughout retirement.

Although engaging in volunteer and leisure activities during retirement seems to have a positive effect on adjustment, experiencing anxiety related to the social components of these activities may hamper that effect. For example, Van Solinge and Henkens (2005) found in their

study of 559 older Dutch couples that having negative preretirement expectations about the consequences of retirement for social contacts and status predicted difficulty in retirement adjustment 6 years later. The same authors later found similar results in their study of 778 Dutch employees (Van Solinge & Henkens, 2008).

***Remaining questions about retirement adjustment.*** Several remaining questions about retirement adjustment have been identified in the literature. In spite of the breadth of the findings from the retirement adjustment literature, a lot less is known about psychological adjustment to retirement relative to economic well-being in retirement, such as financial decision-making (Wang et al., 2011). Wang et al. expressed that the impact of retirement motivation on adjustment quality should be further addressed in future research. Additionally, the authors emphasized the need for evaluation of self-help strategies for improving retirement adjustment. This is especially important for clinicians providing empirically supported treatment for retiring individuals. It has also been noted that the impact of socioeconomic variables, such as current economy, retirement plans, and socioeconomic status, on retirement should be further considered when studying retirement adjustment. Wang and colleagues also emphasized that future studies should model adjustment as well-being change trajectories in order to directly test the resource-based dynamic framework of retirement adjustment. This further emphasizes the need for more longitudinal designs in future research in order better to understand causal processes of retirement adjustment. It is also important for future research to use more indicators of retirement adjustment for a more comprehensive perspective, as different indicators may be sensitive to changes in different resources.

Addressing these research questions is important for several reasons. First, understanding the retirement adjustment process helps us improve postretirement quality of life (Wang et al.,

2011). With the retirement adjustment process being experienced by more people than ever, quality of life during this time is of great importance for many people. Studying this process of adjustment can also lead to better understanding of how people adjust to external and internal changes in older adulthood (Wang et al., 2011). This research may also yield information about other complex adjustment processes people experience when facing significant internal and external changes.

The detrimental outcomes of unsuccessful adjustment to retirement can also be significant. These consequences include negative health outcomes (Wang, 2012; Phillips, Wojcicki, & McAuley, 2013; Bossé, Aldwin, Levenson, & Ekerdt, 1987; Thoits, 1995; Turner, Wheaton, & Lloyd, 1995), increased likelihood of mental health disorders (such as anxiety and depression; Bossé et al., 1997; Mirowsky & Ross, 1992; Miller & Rahe, 1997), increased smoking and alcohol use (Wang & Shi, 2014; Wang et al., 2011; Perreira & Sloan, 2001; Henkens et al., 2008), heightened risk of suicide (Conwell & Brent, 1995; Portnoi, 1983; Seiden, 1981), as well as heightened risk for mortality (Tsai et al., 2005). With the influx of people retiring, there is an increased need for effective services, interventions, and prevention measures to assist older adults in their transitions during this time of life.

### **Individual Differences in Retirement Adjustment**

The need for looking at personality variables related to retirement adjustment has been iterated several times in the literature (Wang et al., 2011; Wang, 2007). This area is important to address because personality has been shown to influence quality of adjustment in other domains of life (e.g., adjustment to unfamiliar work and cultural environments; Wang & Takeuchi, 2007). Additionally, personality variables influence individuals' abilities to conduct emotional appraisals, motivationally prioritize, and utilize effective coping strategies. It may be useful to

increase our understanding of the role of individual differences in relation to retirement adjustment. Specifically, prior research has shown mixed results on effects of retirement (Wang et al., 2011), and these mixed results suggest the possibility of individual differences in retirement adjustment that may not be accounted for with aggregated or averaged data. Wang (2007) suggested the possibility of multiple paths of adjusting to retirement, predicted by individual differences might account for these disparate findings.

*Personality as an individual difference.* One such individual difference variable that warrants further research in its relation to retirement adjustment is personality. Personality consists of traits that Costa and McCrae (1986) described as consistent and enduring characteristics or attributes that underlie many individual differences in cognition, emotion, and behavior. Personality begins forming at an early age. Typically, in children, personality characteristics are referred to as temperament styles. It is not until adulthood that these characteristics are referred to as personality traits. Several models of personality have developed over the past century. These models have ranged anywhere from three to 16 dimensions that have been purported to make up personality.

Eysenck (1947, 1952) proposed three dimensions that describe personality: Neuroticism versus Emotional Stability, Extraversion versus Introversion, and Psychoticism compared to Super-Ego Control. From this model, he developed the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975). Cattell, Eber, and Tatsuoka, in 1970 proposed a Sixteen Personality Factor (16 PF) model. Buss and Plomin (1975) proposed that people are born with innate temperaments. These temperaments are modified by the environment, and the environment is influenced by the person's temperament. Thus, nature is influenced by and influences nurture. Buss and Plomin included four traits in their model of personality: Emotionality, Activity,

Impulsivity, and Sociability. Strelau (1983) contrasted personality with temperament, defining temperament as the biological and genetic basis for personality.

One of the most widely used models of personality is the Five Factor Model, developed by Costa and McCrae (1980, 2008). This model includes five traits on which individual's scores are assessed. Each trait is a continuum, such that individuals who have higher scores on the trait, having higher amounts of that trait. These traits are Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness to Experience (Costa & McCrae, 1986). Briefly, Agreeableness is manifested in someone who is trusting, generous, flexible, acquiescent, lenient, and good-natured. People who have high levels of the trait Neuroticism tend to be anxious, temperamental, self-conscious, moody, vulnerable, and have difficulty regulating their emotions. High amounts of Conscientiousness would be found in someone who is hard-working, well-organized, punctual, ambitious, and persevering. A person high on Openness would be imaginative, creative, original, curious, liberal, and preferring of variety. Finally, a person possessing high levels of the trait Extraversion would likely be warm, affectionate, sociable, talkative, energetic, and passionate. The Five Factor model is commonly measured using the NEO PI-R, a 240-item inventory developed by Costa and McCrae (1992).

Not only has recent research moved toward a focus on individual differences in scores on personality measures, but there is growing interest in how these individual differences manifest in structural imaging data as well. Kanai and Rees (2011) specifically noted that researchers typically focus on the change in the mean response associated with an experimental manipulation or behavior. Such averaging of data across participants is performed to reveal underlying effects despite the presence of measurement noise. However, if these inter-individual differences are highly consistent across different tests, then they are likely characteristics of the individuals and



may ultimately reflect differences in their brain function. The authors report that recent MRI studies in the human brain show that interindividual variability in a wide range of basic and higher cognitive functions—including perception, motor control, memory, aspects of consciousness and the ability to introspect—can be predicted from the local structure of grey and white matter as assessed by voxel-based morphometry or diffusion tensor imaging. Both inter- and intra-individual differences can be exploited to understand the cognitive processes underlying such behaviors. Averaging data has led to inconsistent and contradictory findings in previous retirement adjustment research. Thus, using averaged information may not be useful for predicting the behavior or adjustment of an individual.

Eysenck (1990) argued that the biological attributes of one's personality could influence that person's environment. It could influence environment to the extent that it could be useful in predicting thoughts and behaviors in many domains of life including career decisions, social attitudes, life satisfaction, and engagement in health behaviors (Paunonen & Ashton, 2001). Psychiatric disorders like anxiety and depression are also strongly determined by genetic factors, most strongly with psychoticism, extraversion, and neuroticism (Eysenck, 1987). Importantly, personality is strongly related to subjective well-being. Subjective well-being has been connected to 137 personality traits, and personality is one of the most significant predictors of this outcome, accounting for up to 63% of variance (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008).

Personality traits have been shown to remain moderately stable throughout adulthood (Costa & McCrae, 1984, 1986, 1988). There has been empirical support for the strong genetic determination (up to about half the variance) of personality trait manifestation (Eysenck, 1990). However, it is evident through longitudinal and cross-cultural studies that there is a propensity for change in personality, throughout adulthood, even into old age (Hooker & McAdams, 2003;

Mroczek & Spiro, 2003; Staudinger & Kunzmann, 2005; McCrae et al., 2000; Roberts & Caspi, 2003). The change that could be expected in normative adult personality development is an increase in Agreeableness and Conscientiousness, as well as a decrease in Neuroticism over time. Thus, there appears to be a slight normative development in personality over time, such that personality traits become more adaptive to the environment (Staudinger & Kunzmann, 2005).

***Personality and Retirement Adjustment.*** The importance of new research addressing the role of personality in the retirement transition process has been reiterated multiple times in the past several years (Löckenhoff, Terracciano, & Costa, 2009; Robinson, Demetre, & Corney, 2010; Wang, 2007; Wang et al., 2011). Specifically, Löckenhoff et al. (2009) emphasized the necessity of studying the relation between personality and retirement adjustment, stating that findings from their study indicate that personality traits have been shown to change slightly in response to the retirement transition. Furthermore, since they found that personality traits were related to retirement adjustment quality in their study – as well as post-retirement activity levels – then this is a promising area for future research to gain insight into important contributors to retirement adjustment.

Wang (2007) emphasized the plausibility of personality traits relating to people's abilities to adjust to transitions such as retirement. Particularly, Wang used an example that an individual who is high on openness may experience less negative effects from the retirement transition than someone who is high on neuroticism. Measuring specific individual differences may also help to identify underlying antecedents of retirement change trajectories as hypothesized in Wang et al.'s (2011) resource-based dynamic perspective of retirement adjustment.

Next, Robinson, Demetre, and Corney (2010) found in their study that negative circumstances leading to retirement related to Neuroticism. The authors emphasize that the implication of their research and other research on retirement adjustment in relation to personality is that personality tests could be given to workers approaching retirement in order to help identify traits that are associated with those that have difficulty in adjusting to retirement. In this way, support and additional resources could be provided to help buffer the negative effect of retirement adjustment for those individuals. Importantly, the authors further emphasize that a personality type that is adaptive for work may be one that is not as adaptive for life in retirement. This would be indicated by findings showing maintenance of higher levels of well-being prior to retirement and decreased levels of well-being immediately following retirement. This further emphasizes the need for more research addressing the relation between personality and retirement adjustment.

Another reason to emphasize the implementation of research addressing personality in relation to retirement adjustment is that almost no one has previously assessed the impact of these individual differences in a longitudinal analysis of retirement adjustment. There are three exceptions to this in the existing literature. First, Löckenhoff et al. (2009) found that the Big Five personality traits were related to retirement satisfaction as well as postretirement activity levels in their sample. Second, Gall, Evans, and Howard (1997) looked at a sample of 117 retiring men, and found that their locus of control tended to become more internal immediately following retirement; their psychological and physical health declined significantly by 7 years after retirement; and financial satisfaction in this group remained stable after retirement. Finally, Reitzes and Mutran (2004) found from their study of retirees in North Carolina that self-esteem increased positive attitudes toward retirement over time. The few studies that have looked at

personality influence on retirement adjustment can be criticized because of sample selection (specifically, size and representativeness) and infrequent or short duration of measurements of adjustment. Furthermore, Wang (2013) has criticized this prior research due to these methodological limitations in sampling, measures, and design.

Conceptually, it makes sense to research the relation between personality variables and retirement adjustment for several reasons. First, personality traits have been linked to satisfaction in career areas other than retirement. Lounsbury et al. (2003) found in their survey of 5,932 workers that Conscientiousness, Openness, and Extraversion were related to life satisfaction during career transitions. Personality traits are also consistently linked with job variables such as career choices (Page, Bruch, & Haase, 2008) and unemployment length (Kanfer, Wanberg, & Kantrowitz, 2001).

Next, personality is related to adjustment in other parts of life. Ozer and Benet-Martinez (2006) found in their review of the literature in this area that personality factors were strongly predictive of most components of subjective well-being – far above demographic, employment, and social variables. Links between personality and adjustment have been found in relocation transition (e.g., Kling, Ryff, Love, & Essex, 2003), cross-cultural adjustment (e.g., Wang & Takeuchi, 2007), and transition to parenthood (e.g., Levy-Shiff, 1994). These relations between personality and well-being during transitions may be mediated by additional variables.

Evidence for the possibility of this mediated relation is found in previous studies relating personality to these resources mentioned, and studies tying the resources to retirement adjustment. Based on the resource-based dynamic perspective, personality may be related to retirement adjustment via resources. This connection has some empirical support. Specifically, personality has been related to relationship quality ( Berkman et al., 2000; Donnellan et al.,

2005; Jensen-Campbell et al., 2002; Karney & Bradbury, 1995; Robins et al., 2002), health behaviors (Caspi et al., 2005; David & Suls, 1999; Miller et al., 1996; Scheier & Carver, 1993), adherence to treatment regimens (Kenford et al., 2002), job perceptions (Thoresen et al., 2003), and mental health (Trull & Sher, 1994; Trull & Durrett, 2005). These variables have already been shown to be related to retirement adjustment (Pinquart & Schindler, 2007; Wang et al., 2011; Dorfman, 1992; Kim & Feldman, 2000; van Solinge & Henkens, 2008; Kim & Moen, 2002; Wang, 2007; Szinovacz & Davey, 2004).

## **Hypotheses**

Hypotheses were developed based on the premises of Wang et al.'s (2011) resource-based dynamic perspective of retirement adjustment. The main tenants of this framework are: a) that there are multiple paths of retirement adjustment, b) that these paths are determined by resources possessed by the individual, and c) that these resources will be influenced by antecedent factors (see Figure 1. for illustration of model). The trajectories of adjustment were initially found by Wang (2007) and include the maintaining pattern, in which adjustment levels stay relatively consistent throughout retirement; recovering pattern, in which adjustment levels increase from their preretirement states; and u-shaped pattern, in which adjustment levels initially decline, then over time return to their post-retirement states.

Based on previous literature, it is thought that personality might be an antecedent that influences the physical, cognitive, social, and emotional resources a person has, which in turn would influence levels of retirement adjustment. For the current study, I only examined the relation between personality and retirement adjustment. I included age at retirement, years of education, physical health status, income, and coupleness status as covariates. The research hypotheses are listed below and illustrated in Figures 2 and 3.

**H1.** Based on previous research (e.g., Wang, 2007), I expected that the following three patterns of adjustment would emerge (see Figure 4):

*Ia.* Adjustment levels would stay relatively consistent throughout the years following retirement (maintaining pattern).

*Ib.* Adjustment levels would increase from their preretirement states during the years following retirement (recovering pattern).

*Ic.* Adjustment levels would initially decline following retirement then over time return to their post-retirement states (u-shaped pattern).

**H2.** Personality traits would be related to these well-being trajectories throughout retirement. Specifically, the traits of openness and conscientiousness would be positively related to well-being, and neuroticism would be negatively related to well-being.

Additionally, I included age at retirement and years of education as time-invariant covariates in the analysis, because demographic variables have been shown to be related to both personality stability (Löckenhoff et al., 2009) and retirement-related outcomes (e.g., Belgrave, 1988; Howard et al., 1986; Pienta, 2003; Löckenhoff et al., 2009). I also added physical health, income, and couple status to the model as time-varying covariates. Because the focus of the current study is on the relation between personality and adjustment, I did not make specific predictions about the relation between personality and these additional variables.

## CHAPTER 2

### Method

The purpose of this study was to examine trajectories of well-being during older adulthood by focusing on change over time in the period following retirement in participants from a large, nationally representative sample of older adults in the United States gathered over the course of 20 years (1992–2012). The design of this study allows for such an examination and is comparable to that of Fisher et al. (2014), in which HRS data were used to assess trajectories of cognitive functioning before and after retirement using latent growth curve analysis.

#### *Participants*

Participants for this study were 1,155 older adults from the Health and Retirement Study (HRS) who joined the study between 1992 and 2006, retired during the course of the study, and completed the psychosocial questionnaire (during either the 2006, 2008, or the 2010 wave) that contained personality measures. The HRS is a nationally representative, longitudinal study that began in 1992 and was designed specifically to measure retirement patterns and economic and health variables in older adults as they transition into retirement. The HRS is a cooperative agreement between the National Institute of Aging and the University of Michigan (U01 AG009740); data were collected by the University of Michigan Institute for Social Research. In the HRS, data are collected biennially with new participants being added in 1998, 2004, and 2010 as refresher cohorts to maintain sampling of individuals age 51-56. Using a nationally representative sample in the current study is important for understanding the issue at the population level and for increasing the generalizability of the findings.

Participant data were selected for the current study if the participant had completed at least four waves of the well-being measure, with at least one wave before and three waves after

retirement. Participants were excluded if they did not complete at least the Big Five personality measure, if they did not retire at some point during the timeframe of the study, if they were below the age of 51 (younger partners of people in the study), or if they had completed fewer than four consecutive waves of the well-being measure. The final sample for this study consisted of 1,155 participants – 768 (57.4%) of which were women and 569 (42.6%) were men. 1,124 (84.1%) of the participants were White and 170 (12.7%) were Black. Exclusion criteria and amount of cases lost at each restriction are reported in Figure 5.

### *Measures*

#### **Retirement Adjustment**

In the current study, retirement adjustment was measured with the 8-item Center for Epidemiological Studies depression scale (CES-D; Radloff, 1977), reverse coded to indicate psychological well-being (as utilized by Wang, 2007). The items asked participants to respond in a yes/no format to items such as *I felt depressed almost all of the time*, indicating whether they felt a particular way during the last week. Cronbach's alpha scores range from 0.81 (in Wave 2 of the HRS) to 0.83 (in Wave 3), indicating good internal consistency reliability for the CES-D.

#### **Personality**

The Big Five personality traits (Openness, Conscientiousness, Neuroticism, Extraversion, and Agreeableness) were measured in the HRS through The Midlife Development Inventory (MIDI Personality Trait Scales from MIDUS; Lachman & Weaver, 1997). This inventory contains 31 items that measure facets of the Big Five traits, with subscales composed of four to seven items each. The MIDI Personality Trait Scales asked participants to rate on a 4-point scale, ranging from *a lot* to *not at all*, how well certain personality adjectives described them. Alpha coefficients range from .80 to .85 for the trait scales in this inventory.



## **Health Status**

Health status was one of three variables that were included in the analysis as a time-varying covariate. This construct was measured in the HRS by a single item in the interview, “*Would you say your health is excellent, very good, good, fair, or poor?*” This item was asked in every wave of data collection. Health status was included as a time-varying covariate in the data analysis due to the previous literature suggesting its relation with life-satisfaction and retirement adjustment (Palmore & Luikart, 1972; Slevin & Wingrove, 1995; Szinovacz & Washo, 1992; van Solinge & Henkens, 2005).

## **Income**

Household Income has been recognized for its association with retirement well-being (e.g., Kosloski, Ginsburg, & Backman, 1984; O’Rand & Henretta, 1999; Szinovacz, 2003; Wang, 2007). Cross-sectional studies have consistently found that retirees with better financial status report better well-being following retirement (e.g., Dorfman, 1992; Hardy & Quadagno, 1995). Income has also been associated with well-being in other times of adulthood (Crowley, 1986; Dorfman, 1992; Fillenbaum, George, & Palmore, 1985; Seccombe & Lee, 1986). Thus, household income was included as a covariate and was indicated by the total annual household income reported at each interview wave.

## **Coupleness**

Coupleness status was included as a covariate, due to findings suggesting its relation with adjustment to retirement (Kim & Moen, 2002; Myers & Booth, 1996; Szinovacz & Davey, 2005). Rather than simply using marital status as an indicator, “coupleness” included individuals who were either married *or* cohabitating. Consequently, this variable was accounting for the social aspects of marriages as well as significant relationships that have not been legally

sanctioned. Coupleness was measured as a single-item, time-varying indicator. Although synchrony of couples' retirements has been indicated as a predictor of retirement adjustment in previous literature (e.g., Wang, 2007), the focus of the current study was centered on the relation between personality and adjustment, rather than impact of coupleness status on retirement adjustment. Thus, to keep in line with the current focus, synchrony of couples' retirements was not included as a predictor in the model.

### **Other Demographic Characteristics**

Two additional demographic variables were included in the analyses as potential time-invariant covariates, due to the literature suggesting their relation with the retirement adjustment indicators. These demographic items were level of education (measured by years of education; Luppá et al., 2011) and age at time of retirement (Von Hippel, Henry, & Matovic, 2008; Warr, 1992).

### *Procedure*

Participants were initially recruited for the HRS through door-to-door household screenings and were then mailed letters with a prepaid incentive and an invitation to participate in the study. The selection of people who would receive invitations for the study were derived using national area probability sampling of U.S. households with supplemental oversamples of Blacks, Hispanics, and residents of the state of Florida. Recipients of invitations were household-dwelling, older adults living in the continental United States. After agreeing to participate, participants were then interviewed either face-to-face or over the telephone by a trained interviewer from the Survey Research Center at the University of Michigan. Initial interviews were primarily conducted face-to-face and follow-up interviews were primarily conducted via

telephone. The response rate for the baseline interview was 81.7%, and reinterview response rates at subsequent waves ranged from 84.0% to 89.1% (HRS, 2011).

### *Analytic Strategy*

#### **Creating Variables for Analysis**

The first stages of analysis consisted of creating multiple new variables needed for the analyses. First, I constructed the latent variable of retirement adjustment across the 8-item measure for depression, and reverse-scored to indicate well-being. The intended results of this technique were to show how the dependent variable (retirement adjustment) changed across multiple time points, what the shape of this change was, and the variation across participants in their initial levels of the dependent variable, as well as differences in rate of change across subgroups of participants.

Next, I created a time-varying, dummy-coded variable in order to designate when individuals changed from gainful employment to retirement, such that an individual would indicate a change from being employed, to being retired and not working for pay for the duration of his or her time in the study. This method is consistent with what has been previously done in other studies (e.g., Fauth, Gerstorf, Ram, & Malmberg, 2012; Fisher et al., 2014; Infurna, Gerstorf, & Zarit, 2013). For the purposes of this study, *retirement* was assessed through two questions on the HRS follow-up interviews on which participants could report whether or not they were retired as well as whether or not they were engaged in paid employment. Participants also provided the month and year they retired which I used to calculate participant age at retirement. Then, I centered data on the wave in which the participant indicated that he or she changed from gainful employment to retirement for the duration of the study. Means, standard deviations, and correlations among the variables are presented in Table 1.

## **Growth Mixture Model**

I tested the hypotheses using a type of Growth Curve Modeling (GCM), known as Growth Mixture Modeling (GMM). GCMs are used to identify change trajectories in two or more time points (Curran, Obeidat, & Losardo, 2010; Raudenbush & Bryk, 2002). They allow for the measurement of repeated measures of dependent variables as a function of time and other predictor variables (Meredith & Tisak, 1990; Preacher, Wichman, MacCallum, & Briggs, 2008). The benefit of using a GMM is that it allows for the simultaneous measurement of multiple growth patterns over time, and can identify factors of commonality among participants' growth patterns. Whereas typical latent growth curve modeling assumes that all subjects are from the same population, GMM allows for the presence of multiple subpopulations within the same dataset (Jung & Wickrama, 2008). The results from such an analysis are separate growth models for each latent class, each with its unique estimates of variances and covariate influences (Muthén & Asparaouhov, 2006). I used the software program Mplus v. 7.3 (Muthén & Muthén, 2014) to run the latent growth mixture model for the current study.

## **Number of classes**

I first conducted a series of LGMMs to determine class membership, based on differences in growth trajectories (Jung & Wickrama, 2008). I ran LGMMs with one to three latent classes specified until the adjusted Lo, Mendell, and Rubin (2001) likelihood ratio test (aLMR-LRT) statistic was not significant. I also assessed the Bayesian information criteria (BIC) value to identify the class specification with the lowest BIC. Although the BIC is the best indicator from the information criteria, the bootstrap likelihood ratio test (BLRT), is currently considered a more powerful indicator of classes across all of the models considered (Jung & Wickrama, 2008; Nylund, Asparouhov, & Muthén, 2007), followed by the Bayesian information

criteria (BIC). Therefore, I also considered the BLRT in ascertaining the best-fit model; however, the BLRT for all class models in the current study was significant. Thus, other information criteria (BIC and aLMR-LRT) were used to determine best fit.

I also reported entropy as a measure of the latent classification accuracy (Jedidi, Ramaswamy, & Desarbo, 1993). It ranges from .00 to 1.00, with higher values indicating better classification. In previous research, entropy values higher than .80 have been viewed as suggesting good classification (e.g., Greenbaum, Del Boca, Darkes, Wang, & Goldman, 2005; B. Muthen, 2004).

## CHAPTER 3

### Results

#### *Testing H.1: Confirming Presence of Multiple Growth Patterns of Psychological Well-Being*

The current study tested the hypothesis that there would be multiple latent subgroups of participants based on different trajectories of retirement adjustment. I predicted that there would be three latent subgroups (the three retirement adjustment patterns) that would emerge, consistent with the findings from Wang (2007).

First, I estimated a two-class latent growth curve model. This model resulted in smaller information criteria compared with the one-class model (see Table 2). Consistent with smaller information criteria, the adjusted LRT test yielded significant results (722.79,  $p < .001$ ), indicating that the one-class model had to be rejected in favor of a two-class model.

After the two-class latent growth curve model was fitted, I estimated a three-class model. Although this three class model resulted in slightly smaller information criteria compared with the two-class model (see Table 2) and the BLRT test yielded insignificant results (-5546.161;  $p < .001^{**}$ ), the adjusted LRT was not significant (133.356,  $p = .095$ ). This indicated that the more parsimonious two-class model did not need to be rejected in favor of the three class model.

Entropy for all models of classes exceeded .90. Therefore, I selected the two class solution as the optimal model. Figure 7 displays the trajectories of the two classes. It can be seen that the first path had a much higher intercept, with respondents having indicated high levels of well-being before retirement, and then having maintained that pattern throughout the time following retirement. This pattern resembled the maintaining pattern identified by Wang (2007). The second pattern shows that individuals in this class started with lower than average levels of well-being, declined immediately following retirement, increased slightly, and then decreased

again to a point that was approximately a half-point lower than their initial well-being levels. This path resembled what seemed to be a combination of the u-shaped pattern and recovering pattern identified by Wang (2007). Class 1 represented 87.2% of the sample and Class 2 represented 12.8%.

### *Testing H.2: Assessing Relation between Personality and Patterns of Adjustment*

Hypothesis 2 predicted that levels of personality traits would predict membership in these subgroups of latent class trajectories. In order to assess the influence of each personality trait directly, I needed to free the parameters for these variables. Once I freed these parameters, however, the latent class analysis results of the model changed, such that entropy decreased to 0.78, and the adjusted LRT for the two-class model was no longer significant (the BLRT, however, remained significant as it has in all variations of the model). The subsequent results should be interpreted with caution. From this point on, I report the results of the freed parameter model, as I used them to examine the relation of personality variables and covariates among individuals in each latent class. Results for the regression component of the GMM revealed significant effects of certain personality traits for both patterns of retirement adjustment (Table 3). Agreeableness ( $-0.058$ ;  $p = .047$ ), extraversion ( $0.061$ ;  $p = .040$ ), and neuroticism ( $-0.280$ ;  $p < .001$ ) were significant predictors of Class 1. For Class 2, neuroticism ( $-0.150$ ;  $p < .001$ ) and openness ( $-0.057$ ;  $p = .005$ ) were significant predictors.

### *Adding Covariates*

I added certain variables thought to covary with retirement adjustment to the model as well. I added income, coupleness status, and health status as time-varying covariates. I added years of education and age at retirement as time-invarying covariates. Although the model initially included income, this variable did not prove to be a significant predictor for either class.

Thus, I removed this indicator from the model reported here. I then added wealth (an indicator of total financial assets) to the model instead (after performing a logarithmic transformation on the variables to adjust for skewness). This indicator was not significant either and I removed it from the model. Thus, no financial status indicators were included in the final model. The covariates of coupleness, health status, age at retirement, and years of education were all statistically significant (at the  $p < .001$  level) covariates in both classes.



## CHAPTER 4

### Discussion

I designed the present study to address the following question: Can multiple longitudinal change patterns of retirees' psychological well-being be predicted by individual differences in personality? Prior research has not provided a clear answer to this question, due to its theoretical and methodological complexity. Below, I present a summary of the current findings and a discussion of how they answer this question, including its theoretical, empirical, and practical implications.

#### *Summary of Findings*

Throughout the interpretation of the results, it is important to exude caution. Taking caution is crucial due to the changes in model fit following the freeing of parameters, such that the two-class model no longer yielded a high quality fit as it did before the parameters were freed. With this caution in mind, the current results obtained in this study support the appropriateness and utility of understanding retirement adjustment as both a longitudinal and heterogeneous process. The current findings revealed two classes of retirement adjustment trajectories. These classes consisted of retirees who tended to maintain a consistently high level of well-being throughout their retirement adjustment period and retirees who experienced slightly lower than average levels of well-being as well as fluctuation in their levels of well-being throughout this adjustment period. These findings are consistent with previous studies indicating both change throughout the time following retirement, as well as heterogeneity in levels of adjustment following retirement. Additionally, as the face of retirement continues to change and diversify more heterogeneity in how people adjust to this important time of life can be expected.

There is preliminary evidence based on the findings from the current study that the personality traits of neuroticism, extroversion, agreeableness, and openness may be useful in profiling retirees according to retirement adjustment trajectories. Specifically, neuroticism, extroversion, and openness appear to be more predictive of membership in a maintaining pattern of adjustment, whereas openness and neuroticism appear to be more predictive of membership in the less stable pattern of adjustment. The significance of neuroticism as a predictor of trajectories of well-being is consistent with the literature indicating this personality trait's relation to overall well-being in other domains of life. Additionally, significance of openness as a predictor of these trajectories makes theoretical sense, as the retirement process is often full of new experiences and those who approach this experience with more openness might experience more positive psychological benefits than those who meet this transition with more resistance. It is slightly less theoretically clear how extroversion and agreeableness might predict class membership, and these relations certainly warrant additional research. Though outside the scope of the current study, it would be important to assess how each of these traits predicts class membership (i.e., do lower or higher levels of agreeableness predict lower or higher levels of well-being?).

Additionally, the current findings further support the inclusion of multiple contextual factors in retirement adjustment models. The specific covariates of coupleness, health status, age at retirement, and years of education were statistically significant in the model. Their significance further supports previous research that has found substantial support the relations between these variables and well-being in other domains of life. Thus, the results further corroborate previous support for including these variables in models of retirement adjustment.

### *Strengths of the Present Study*

Researchers in many previous studies on adaptation to retirement have typically collected cross-sectional data from nonrepresentative samples. Using data from a nationally representative sample in the current study is important for understanding the issue at the population level and for increasing the generalizability of the findings. Many studies on change in well-being during the retirement transition have focused on average changes across all participants. Thus, another strength of the present study is that it assessed multiple patterns of individual change trajectories, rather than assuming retirees are a homogenous group.

### *Limitations of the Present Study*

There are several perceived limitations to the current study. Foremost, this study is subject to the many limitations that come from using archival data (Fisher & Barnes-Farrell, 2013) such as limited availability of useful indicator variables. Specifically, I measured retirement adjustment in the current study only through an 8-item measure, which likely does not fully capture the breadth of the construct. Additionally, there are often large amounts of missing data in these types of datasets that need to be considered in the analysis process, and this dataset is no exception. Improper handling of missing data issues can severely affect the representativeness of the sample, and consequently, accuracy and generalizability of the findings. Specifically, I took a conservative approach to the treatment of missing data in the current study, which resulted in listwise deletion and excluding people from analysis. Thus, although the beginning possible sample began with 37, 852 participants, the final sample was reduced to 1,155 participants (see Figure 5). I used many criteria to limit the sample. The significant restriction of the dataset yielded no missing data in the final sample, but in doing so, likely compromised the generalizability and integrity of the results.

Additionally, as with all mixture modeling research, interpreting the results depends on the ability to characterize the estimated classes with relevant explanatory variables. Although I included a variety of explanatory variables in the model, there may still be other predictors not included that would further distinguish among the estimated classes. For example, circumstances leading-up to retirement, that are not considered in the present analysis, may further predict retirement adjustment, such as engaging in bridge retirement work and pre-retirement job satisfaction. The precision of mixture modeling depends on the timing of the assessments, and assessments that are more frequent may reveal distinct adjustment trajectories. It is also important to note that the GMM aggregates data within a class. Therefore, although an average trajectory can be discerned for each class, it does not imply that all individuals within a class follow that trajectory. Although the latent class to which an individual is most likely to belong can be identified, there is still a great deal of meaningful variability regarding inter- and intraindividual differences and trajectories.

#### *Contribution of This Study to the Field*

The purpose of the present study was to assess the relation between personality and retirement adjustment. Specifically, this study addresses certain gaps in the existing literature by including a sample from a nationally representative data set as well as by including a longitudinal analysis of adjustment across a minimum of four data points. Using a nationally representative sample is important because a nationally representative sample is, of course, more likely to produce generalizable findings.

Studying retirement adjustment longitudinally, within-subjects, is also important for several reasons. First, there is a need in the field to accumulate knowledge of directionality of effects in retirement processes (Wang, 2012). Second, the pattern of change in well-being across

the course of retirement was visible in this type of design. Third, because retirement is a longitudinal process (Wang et al., 2011) it is fitting to study retirement adjustment in individuals across multiple points in time.

#### *Implications for both Research and Practice*

Findings from this study have implications for directing future research in understanding retirement adjustment – a field that is rapidly growing in terms of interest and need. The literature has not yet adequately covered the specific relation between personality and retirement adjustment and this relation may have substantial impact on how we understand this adjustment process. In the domain of practice, there is potential for intervention tailored for people with different levels of personality traits in order to increase their chances of experiencing a positive transition to retirement. Finally, these findings provide more insight into the impact of personality in older adulthood, and therefore, the relation it may have with other outcomes beyond retirement adjustment.

The detrimental outcomes of unsuccessful adjustment to retirement are strongly apparent in the existing literature. These consequences include negative health outcomes (Wang, 2012; Phillips, Wojcicki, & McAuley, 2013; Bossé, Aldwin, Levenson, & Ekerdt, 1987; Thoits, 1995; Turner, Wheaton, & Lloyd, 1995), increased likelihood of mental health disorders (such as anxiety and depression; Bossé et al., 1997; Mirowsky & Ross, 1992; Miller & Rahe, 1997), increased smoking and alcohol use (Wang & Shi, 2014; Wang et al., 2011; Perreira & Sloan, 2001; Henkens et al., 2008), heightened risk of suicide (Conwell & Brent, 1995; Portnoi, 1983; Seiden, 1981), as well as heightened risk for mortality (Tsai et al., 2005). Counselors and other health professionals can help retiring patients anticipate potential difficulties they may face during retirement, and consequently, how to take pre-emptive measures. With the influx of

people retiring, there is an increased need for effective services, interventions, and prevention measures to assist older adults in their transitions during this potentially vital time of life.

### *Directions for Future Research*

Future research on retirement adjustment may benefit from utilizing a measurement burst design in which frequent measures of adjustment are taken within shorter periods immediately following retirement as well as selected intervals following retirement (Sliwinski, 2008). Results from such a study may identify changes or constants in retirement adjustment that measuring at longer intervals may not be sensitive enough to identify. Next steps in research on personality differences in retirement adjustment include further assessing to what extent individual personality traits predict change or stability in retirement adjustment patterns.

Future research should use other approaches to the treatment of missing data, such as full information maximum likelihood or multiple imputation, rather than eliminating cases with missing data. These other approaches would maintain larger proportions of the sample, thus increasing generalizability, and may provide more clarification of class trajectories.

**Remaining questions about retirement adjustment.** Several remaining questions about retirement adjustment persist. In spite of the breadth of the findings from the retirement adjustment literature, Wang et al. (2011) expressed that the impact of retirement motivation on adjustment quality should be further addressed in future research. Additionally, the authors emphasized the need for evaluation of self-help strategies for improving retirement adjustment. This is especially important for clinicians providing empirically supported treatment for retiring individuals. It is also important for future research to consider the impact of socioeconomic variables, such as current economy, retirement plans, and socioeconomic status, on retirement when studying retirement adjustment. Wang and colleagues also emphasized – and the current

study further implies – that future studies should model adjustment as well-being change trajectories in order to directly test the resource-based dynamic framework of retirement adjustment. This further emphasizes the need for more longitudinal designs in future research in order better to understand causal processes of retirement adjustment. It is also important for future research to use more indicators of retirement adjustment for a more comprehensive perspective, as different indicators may be sensitive to changes in different resources.

TABLES

Table 1. Means, Standard Deviations, Correlations, and Alpha Reliabilities for Sample

Variable	Valid n	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Years of Ed.	1337	12.48	2.7	-													
2.Well-being1	1337	6.3	1.9	.13**	-												
3.Well-being2	1337	6.46	1.84	.15**	.43**	-											
4.Well-being3	1337	6.46	1.84	.10**	.40**	.46**	-										
5.Well-being4	1337	6.33	1.92	.12**	.38**	.45**	.49**	-									
6.Ret. Age	887	64.07	7.96	0.01	0.03	0.02	0.02	-0.02	-								
7.Health W1	1163	3.22	1.03	.23**	.30**	.28**	.27**	.29**	-0.06	-							
8.Health W2	1227	3.18	1	.23**	.28**	.33**	.27**	.28**	-.80*	.64**	-						
9.Health W3	1281	3.13	1.02	.21**	.24**	.29**	.33**	.30**	-0.03	.60**	.66**	-					
10.Health W4	1308	3.06	1.02	.17**	.24**	.25**	.26**	.36**	-0.05	.54**	.60**	.63**	-				
11.Agreeab.	1337	3.48	0.49	.09**	.06*	.06*	0.04	0.04	0	.09**	.10**	.10**	.08**	-			
12.Conscie.	1337	3.29	0.48	.14**	.14**	.14**	.14**	.12**	-0.01	.16**	.19**	.21**	.19**	.49**	-		
13.Extravers.	1337	3.13	0.55	0.05	.15**	.15**	.14**	.13**	0.02	.18**	.20**	.18**	.18**	.58**	.41**	-	
14.Neurot.	1337	2.1	0.57	-.10**	-.22**	-.26**	-.25**	-.27**	-0.04	-.18**	-.15**	-.12**	-.13**	-.10**	-.20**	-.22**	-
15.Openness	1337	2.86	0.54	.29**	.08**	.11**	.08**	.10**	-0.01	.17**	.20**	.19**	.15**	.46**	.45**	.53**	-.17**

Note. Correlations are based on pairwise deletion. \*  $p < .05$ .; \*\*  $p < .01$



Table 2. Fit Indexes, Entropy, and Model Comparisons for Growth Mixture Models in Sample

Growth mixture model	BIC	SSABIC	Entropy	Parametric BLRT (k-1 classes)	Adjusted LRT
One class	38251.148	38159.034			
<b>Two class</b>	<b>11264.788</b>	<b>11182.227</b>	<b>.934</b>	<b>-5912.510; <math>p &lt; .001^{**}</math></b>	<b>722.793; <math>p &lt; .001^{**}</math></b>
Three class	11202.571	11085.080	.918	-5546.161; $p < .001^{**}$	133.356; $p = .095$

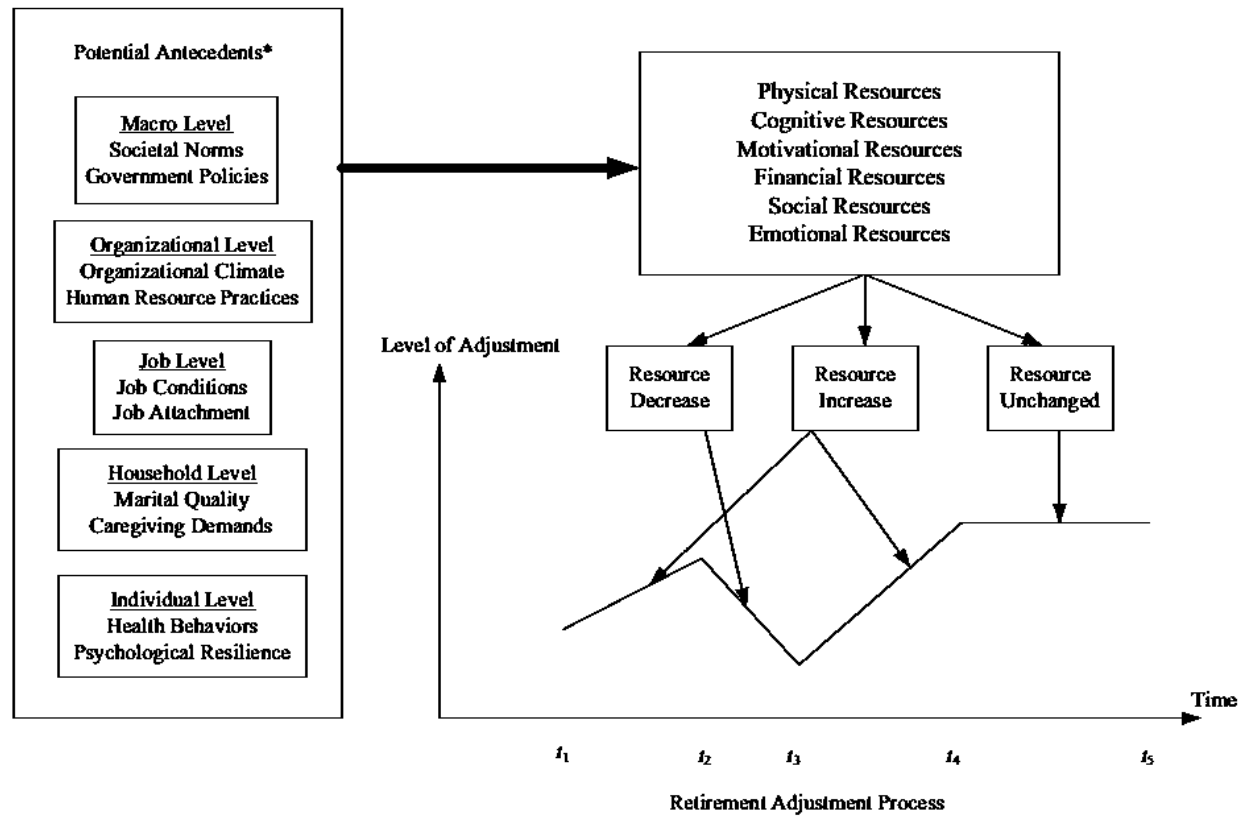
Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; SSABIC = sample-size-adjusted Bayesian information criterion; PARAMETRIC BLRT k-1 classes = Bootstrap Likelihood Ratio Test. Adjusted LRT = Lo-Mendell-Rubin adjusted likelihood ratio test. \* $p < .05$ . ; \*\*  $p < .001$ .

Table 3. Estimated Coefficients for the Mixture Modeling of Classes 1 and 2

Predictor	Class 1			Class 2		
	Estimate	SE	<i>p</i>	Estimate	SE	<i>p</i>
PERSA	-0.058	0.029	0.046*	0.025	0.021	0.220
PERSC	0.024	0.031	0.434	0.029	0.021	0.175
PERSE	0.061	0.030	0.040*	0.012	0.030	0.685
PERSN	-0.280	0.044	0.000**	-0.150	0.036	0.000**
PERSO	-0.036	0.048	0.451	-0.057	0.021	0.005*

Note. \*  $p < .05$ .; \*\*  $p < .001$ .

## FIGURES



Note. \*The potential antecedents for resource changes listed here are illustrative rather than exhaustive.

Figure 1. *Illustration of the Resource-Based Dynamic Perspective for Understanding the Retirement Adjustment Process.*

\*Image taken from Wang, Henkens, & van Solinge (2011, p. 208).

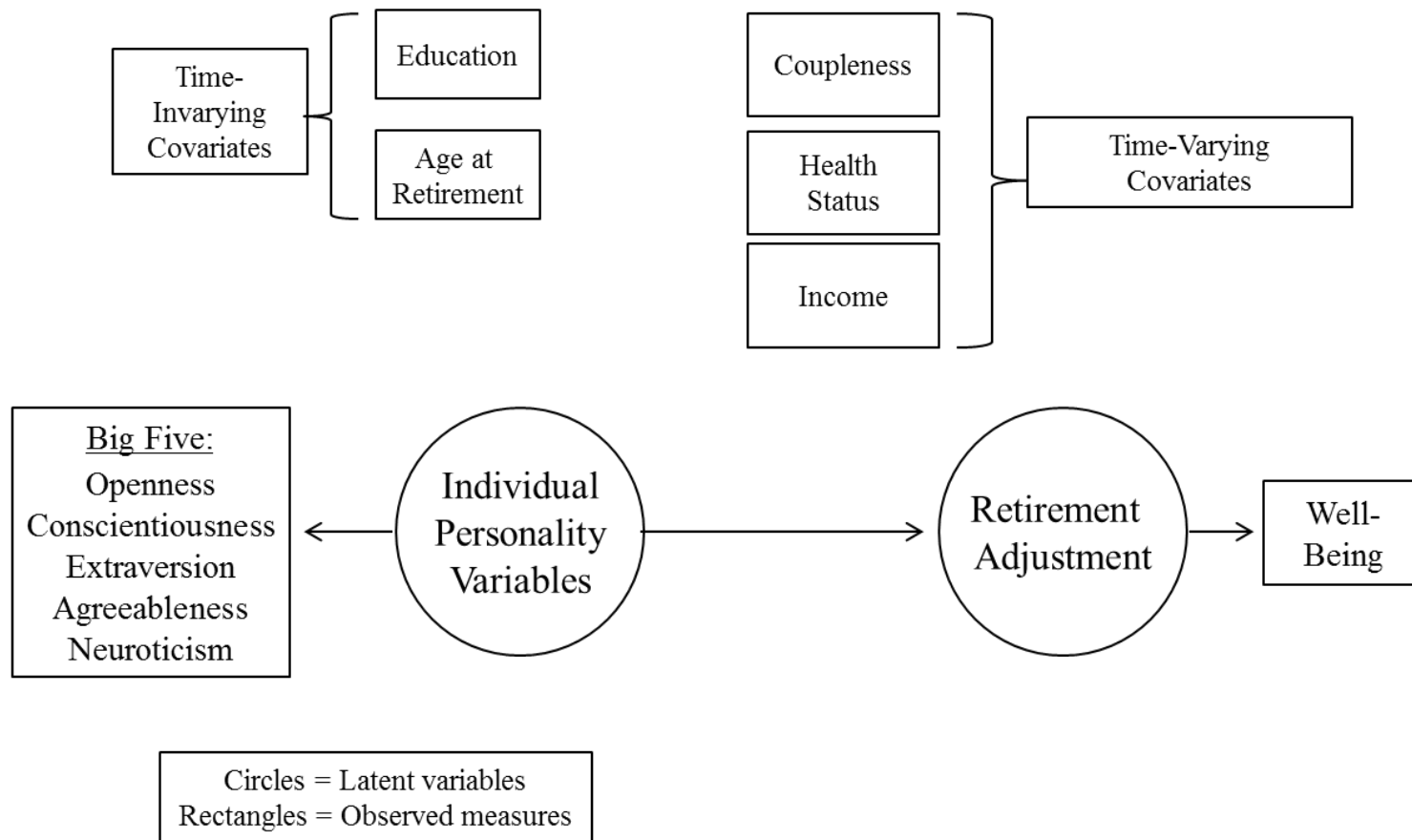


Figure 2. *Proposed Model of Relation Between Individual Personality Variables and Retirement Adjustment.*

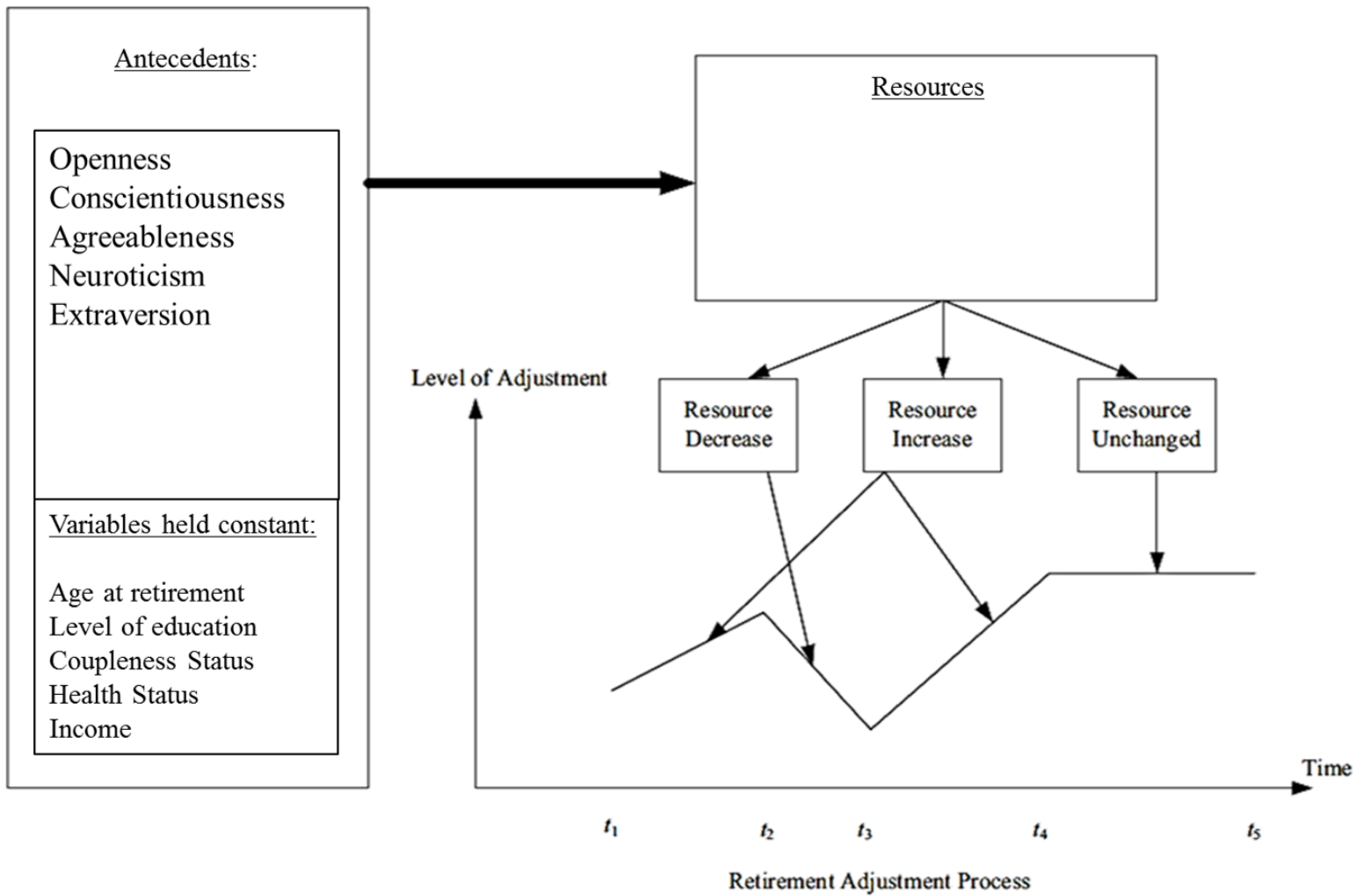


Figure 3. Illustration of the Current Hypotheses, Utilizing the Resource-Based Dynamic Perspective

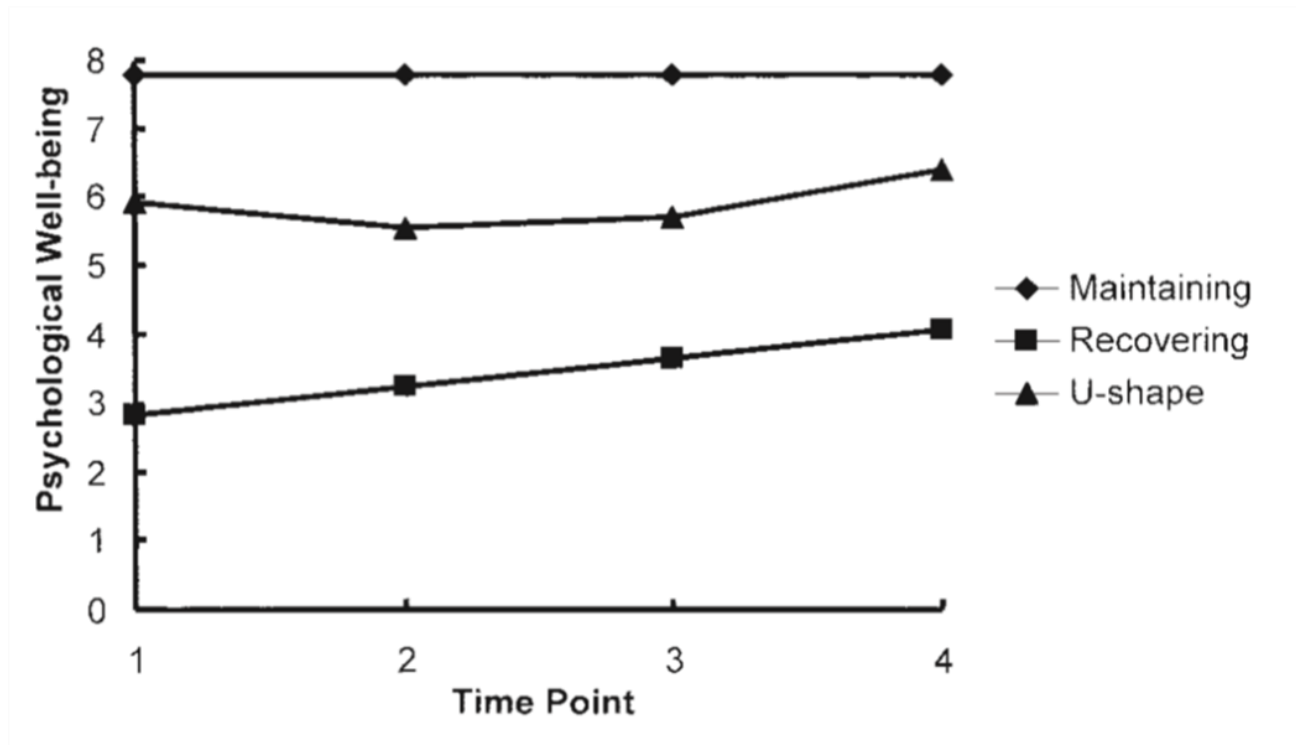


Figure 4. *Illustration of the Three Patterns of Adjustment Retirement Found by Wang (2007).*

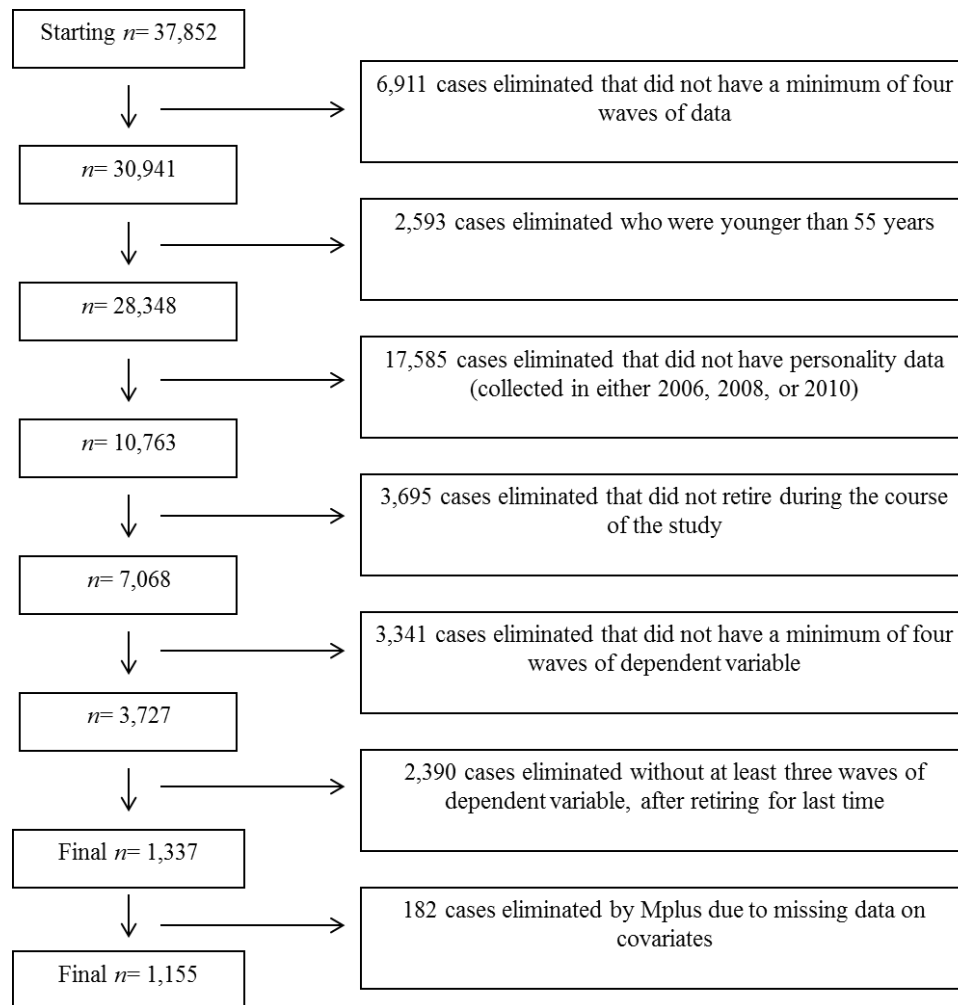


Figure 5. *Exclusion Criteria and Amount of Cases Eliminated at Each Restriction*

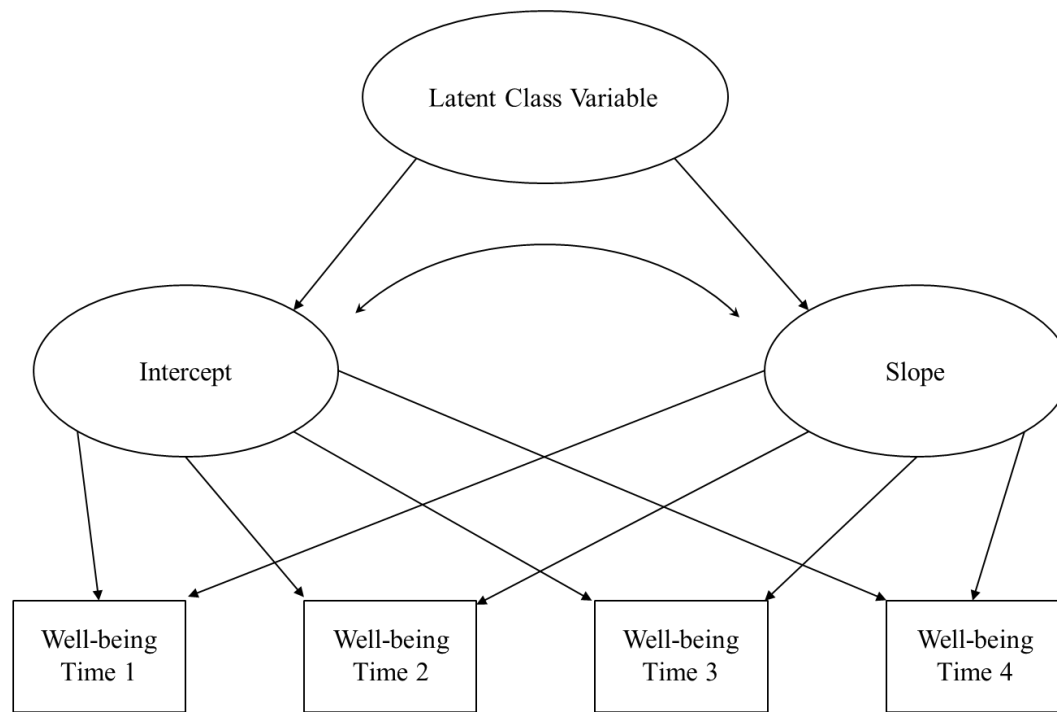


Figure 6. *Illustration of the Latent Class Growth Mixture Model.*



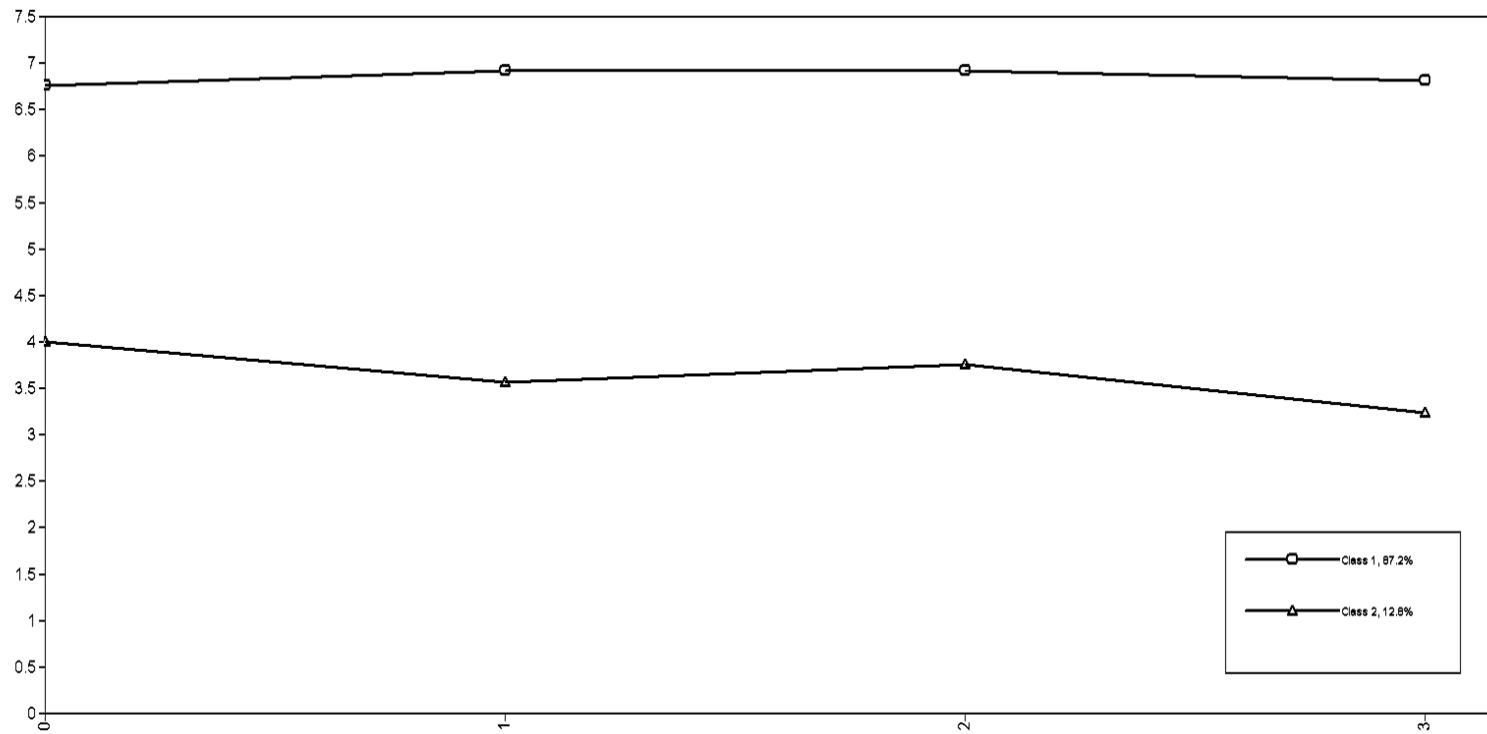


Figure 7. Model of Retirement Adjustment Growth Curves for Class 1 and Class 2 at Four Time-Points.

## REFERENCES

- Adams, G. A., Prescher, J., Beehr, T. A., & Lepisto, L. (2002). Applying work-role attachment theory to retirement decision-making. *International Journal of Aging & Human Development*, 54 (2), 125.
- Alley, D. & Crimmins, E. (2007). The demography of aging and work. In K. S. Shultz & G. A. Adams (Eds.), *Aging and work in the 21st century (7–23)*. New York: Psychology Press.
- and health. *Journal of Business and Psychology*, 1, 95-113.
- Anderson, M. L., Goodman, J., & Schlossberg, N. K. (2012). *Counseling adults in transition: Linking Schlossberg's theory with practice in a diverse world (4th ed.)*. New York: Springer Publishing.
- Ashforth, B. (2001). *Role transitions in organizational life: An identity based perspective*. Mahwah, NJ: Erlbaum.
- Atchley, R. C. (1971). Retirement and leisure participation: Continuity or crisis? *The Gerontologist*, 12, 13-17.
- Atchley, R. C. (1976). *The sociology of retirement*. New York: Wiley.
- Atchley, R. C. (1982). The process of retirement: Comparing women and men. In M. Szinovacz (Ed.), *Women's retirement: Policy implications of recent research (pp. 153–168)*. Beverly Hills, CA: Sage.
- Atchley, R. C. (1992). Retirement and marital satisfaction. In M. Szinovacz, D. Ekerdt, & B. H. Vinick (Eds.), *Families and retirement (145-148)*. Newbury Park, CA: Sage.
- Atchley, R. C. (1999). Continuity theory, self, and social structure. In C. D. Ryff & V. W. Marshall (Eds.), *Families and retirement (pp. 145–158)*. Newbury Park, CA: Sage.

- Barnes-Farrell, J. L. (2003). Beyond health and wealth: attitudinal and other influences on retirement decision-making. In Retirement: Reasons, Processes, and Results, ed. GA Adams, TA Beehr, pp. 159–87. New York: Springer
- Barron, M. L., Strein, G., & Suchman, E. A. (1952). Research on the social disorganization of retirement. *American Sociological Review*, 17, 479–482.
- Bayley, T., Slade, P., & Lashen, H. (2009). Relationships between attachment, appraisal, coping and adjustment in men and women experiencing infertility concerns. *Human Reproduction (Oxford, England)*, 24(11), 2827-2837. doi:1.1093/humrep/dep235
- Beck, S. H. (1982). Adjustment to and satisfaction with retirement. *Journal of Gerontology*, 37, 616–624. doi:1.1093/geronj/37.5.616
- Belgrave, L. L. (1988). The Effects of Race Differences in Work History, Work Attitudes, Economic Resources, and Health on Women's Retirement. *Research on Aging*, 10(3), 383-398.
- Berkman L. F., Glass T., Brissette I., Seeman T. E. 200. From social integration to health. *Soc. Sci. Med.* 51:843–57
- Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds. (2010). The 2010 annual report of the board of trustees of the federal old-age and survivors insurance and federal disability insurance trust funds. Washington, DC: U.S. Government Printing Office.
- Bossé, R., Aldwin, C., Levenson, M., & Ekerdt, D. (1987). Mental health differences among retirees and workers: findings from the Normative Aging Study. *Psychology and Aging*, 2 (4), 383-389.

- Brandt, J., Spencer, M., & Folstein, M. (1988). The telephone interview for cognitive status. *Cognitive and Behavioral Neurology*, 1(2), 111-118.
- Burke, P. J. (1991). Attitudes, behavior, and the self. In J. A. Howard, P. L. Callero (Eds.), *The self-society dynamic: Cognition, emotion, and action* (pp. 189-208). New York, NY, US: Cambridge University Press.
- Burr, J. A., Tavares, J., & Mutchler, J. E. (2011). Volunteering and hypertension risk in later life. *Journal of Aging And Health*, 23(1), 24-51.
- Buss, A. H., & Plomin, R. (1975). *A temperament theory of personality development*. Wiley-Interscience.
- Calasanti, T. M. (1996). Gender and life satisfaction in retirement: An assessment of the male model. *Journal of Gerontology*, 51, 18-29.
- Calvo, E., Haverstick, K., & Sass, S. A. (2009). Gradual retirement, sense of control and retirees happiness. *Research on Aging*, 31, 112-135.
- Carstensen, L. L. (1993, October). Motivation for social contact across the life span: A theory of socioemotional selectivity. In *Nebraska symposium on motivation* (Vol. 40, pp. 209-254).
- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, 79(4), 644-655.
- Carstensen, L. L., Turan, B., Scheibe, S., Ram, N., Ersner-Hershfield, H., Samanez-Larkin, G. R., & Nesselroade, J. R. (2011). Emotional Experience Improves With Age: Evidence Based on Over 10 Years of Experience Sampling. *Psychology & Aging*, 26(1), 21-33.

- Casanova, M. F., Starkstein, S. E., & Jellinger, K. A. (2011). Clinicopathological correlates of behavioral and psychological symptoms of dementia. *Acta Neuropathologica*, 122(2), 117-135.
- Caspi, A., Roberts, B.W., & Shiner, R.L. (2005). Personality development: stability and change. *Annual Review of Psychology*, 56, 453–84.
- Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. (1970). *Handbook for the 16 PF* Champaign, IL: Institute for Personality and Ability Testing
- Cheng, C. (2003). Cognitive and motivational processes underlying coping flexibility: a dual-process model. *Journal of Personality and Social Psychology*, 84(2), 425-438.
- Conwell, Y. & Brent, D. (1995). Suicide and aging: Patterns of psychiatric diagnosis. *International psychogeriatrics*, 7 (2), 149-64.
- Costa Jr, P. T., & McCrae, R. R. (1986). Personality stability and its implications for clinical psychology. *Clinical Psychology Review*, 6(5), 407-423.
- Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people. *Journal of personality and social psychology*, 38(4), 668.
- Costa, P. T., & McCrae, R. R. (1984). Personality as a lifelong determinant of well-being. *Emotion in adult development*, 141-157.
- Costa, P. T., & McCrae, R. R. (1988). Personality in adulthood: a six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. *Journal of personality and social psychology*, 54(5), 853.
- Costa, P. T., & McCrae, R. R. (1992). *Neo PI-R professional manual*.

- Costa, P. T., & McCrae, R. R. (2008). The revised neo personality inventory (neo-pi-r). *The SAGE handbook of personality theory and assessment*, 2, 179-198.
- Crowley, B. J., Hayslip Jr., B., & Hobdy, J. (2003). Psychological hardiness and adjustment to life events in adulthood. *Journal of Adult Development*, 10 (4), 237-248.
- Crowley, J. E. (1986). Longitudinal effects of retirement on men's wellbeing
- Dave, D., Rashad, I., & Spasojevic, J. (2008). The effects of retirement on physical and mental health outcomes. *Southern Economic Journal*, 75, 497–523.
- David, J. & Suls, J. (1999). Coping efforts in daily life: role of Big Five traits and problem appraisal. *J. Personal.* 67:119–4.
- De Ridder, D., Geenen, R., Kuijer, R., & van Middendorp, H. (2008). Psychological adjustment to chronic disease. *The Lancet*, 372 (9634), 246-255.
- De Vaus, D., Wells, Y., Kendig, H., & Quine, S. (2007). Does gradual retirement have better outcomes than abrupt retirement? Results from an Australian panel study. *Ageing and Society*, 27, 667–682.
- DeNeve, K. M. & Cooper, H. (1998). The happy personality: a meta-analysis of 137 personality traits and subjective well-being. *Psychological bulletin*, 124(2), 197.
- Dennison, L., Moss-Morris, R., & Chalder, T. (2009). A review of psychological correlates of adjustment in patients with multiple sclerosis. *Clinical Psychology Review*, 29 (2), 141-153.
- Deutscher, I. (1964). The quality of postparental life: Definitions of the situation. *Journal of Marriage and the Family*, 52-59.
- Dew, M.A., Bromet, E.J., & Penkower, L. (1992). Mental health effects of job loss in women. *Psychological medicine*, 22(03), 751-764.

- Donaldson, T., Earl, J. K., & Muratore, A. M. (2010). Extending the integrated model of retirement adjustment: Incorporating mastery and retirement planning. *Journal of Vocational Behavior*, 77, 279–289.
- Donnellan, M.B., Larsen-Rife, D., & Conger, R.D. (2005). Personality, family history, and competence in early adult romantic relationships. *J. Personal. Soc. Psychol.* 88:562–76
- Dorfman, L. T. & Kolarik, D. (2005). Leisure and the retired professor: Occupation matters. *Educational Gerontology*, 31, 343–361.
- Dorfman, L. T. (1992). Academics and the transition to retirement. *Educational Gerontology*, 18, 343–363.
- Dulin, P. L., Gavala, J., Stephens, C., Kostick, M., & McDonald, J. (2012). Volunteering predicts happiness among older Māori and non-Māori in the New Zealand health, work, and retirement longitudinal study. *Aging & Mental Health*, 16(5), 617-624
- Dweck, C. (2006). *Mindset: The new psychology of success*. Random House LLC.
- Ekerdt, D. J. (2010). Frontiers of research on work and retirement. *Journals of Gerontology*, 65, 69–8.
- Elder, G. H. & Johnson, M. K. (2003). The life course and aging. Challenges, lessons and new directions. In R. A. Settersten (Ed.), *Invitations to the life course: Towards new understandings of later life*. (pp. 49–81)New York: Baywood.
- Elder, G. H. (1995). The life course paradigm: Social change and individual development. In P. Moen, G. H. Elder, & K. Luscher (Eds.), *Examining lives in contexts: Perspectives on the ecology of human development* (pp. 101–139). Washington, DC: American Psychological Association.

- Eysenck, H. J. & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire*  
London Hodder & Stroughton.
- Eysenck, H. J. (1947). *Dimensions of personality* London Routledge & Kegan Paul
- Eysenck, H. J. (1952). *The scientific study of personality* London Routledge & Kegan Paul
- Eysenck, H. J. (1987). The role of heredity, environment and "preparedness" in the genesis of  
neurosis In H J Eysenck & I Martin (Eds ), *Theoretical foundations of behavior therapy*  
(pp 379-402) New York Plenum Press.
- Eysenck, H. J. (1990). Genetic and environmental contributions to individual differences: The  
three major dimensions of personality. *Journal of Personality*, 58(1), 245-261.
- Fauth, E. B., Gerstorf, D., Ram, N., & Malmberg, B. (2012). Changes in depressive symptoms in  
the context of disablement processes: Role of demographic characteristics, cognitive  
function, health, and social support. *The Journals of Gerontology Series B: Psychological  
Sciences and Social Sciences*, 67(2), 167-177.
- Fenichel, O. (1945). *The psychoanalytic theory of neurosis*. New York: Norton.
- Fillenbaum, G. G., George, L. K., & Palmore, E. B. (1985). Determinants and consequences of  
retirement among men of different races and economic levels. *Journal of Gerontology*,  
40(1), 85-94.
- Fisher, G. G., Stachowski, A., Infurna, F., Faul, J. D., Grosch, J., & Tetrick, L. (2014). Mental  
work demands, retirement, and longitudinal trajectories of cognitive functioning. *Journal  
of Occupational Health Psychology*, 19(2), 231-242.
- Freud, S. (1923). *The ego and the id*. New York: W. W. Morton.
- Fryer, D. (1985). Stages in the psychological response to unemployment A (dis)integrative  
review. *Current Psychological Research & Review*, Fall, 257-273.



- Gall, T. L., Evans, D. R., & Howard, J. (1997). The retirement adjustment process: Changes in the well-being of male retirees across time. *Journal of Gerontology: Psychological Sciences*, 52B, 110–117.
- Gameiro, S., Moura-Ramos, M., Canavarro, M., & Soares, I. (2011). Network support and parenting in mothers and fathers who conceived spontaneously or through assisted reproduction. *Journal of Reproductive and Infant Psychology*, 29(2), 170-182.
- George, L. K. (1993). Sociological perspectives on life transitions. *Annual Review of Sociology*, 19, 353–373.
- George, L. K., & Maddox, G. L. (1977). Subjective adaptation to loss of the work role: A longitudinal study. *Journal of Gerontology*, 32, 456–462.
- Goodman, J., Schlossberg, N. K., & Anderson, M. L. (2006). *Counseling adults in transition*. New York: Springer.
- Gourounti, K., Anagnostopoulos, F., & Vaslamatzis, G. (2010). Psychosocial Predictors of Infertility Related Stress: A Review. *Current Women's Health Reviews*, 6(4), 318-331.
- Halford, W., Petch, J., & Creedy, D. K. (2010). Promoting a positive transition to parenthood: A randomized clinical trial of couple relationship education. *Prevention Science*, 11(1), 89-10.
- Hall, S. S., & Adams, R. (2011). Newlyweds' unexpected adjustments to marriage. *Family and Consumer Sciences Research Journal*, 39(4), 375-387.
- Hank, K., & Erlinghagen, M. (2010). Dynamics of volunteering in older Europeans. *The Gerontologist*, 50(2), 170-178.

- Hawamdeh, Z. M., Othman, Y. S., & Ibrahim, A. (2008). Assessment of anxiety and depression after lower limb amputation in Jordanian patients. *Neuropsychiatric Disease and Treatment*, 4(3), 627-633.
- Henkens, K., van Solinge, H., & Gallo, W. T. (2008). Effects of retirement voluntariness on changes in smoking, drinking and physical activity among Dutch older workers. *European Journal of Public Health*, 18, 644–649. doi:1.1093/eurpub/ckn095
- Herzog, A. R. & Wallace, R. B. (1997). Measures of cognitive functioning in the AHEAD study. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 52, 37–48. doi:1.1093/geronb/52B.Special\_Issue.37
- Hooker, K. & McAdams, D. (2003). Personality reconsidered: A new agenda for aging research. *The Journals of Gerontology*, 58 (6), 296-304.
- Horgan, O. & MacLachlan, M. (2004). Psychosocial adjustment to lower-limb amputation: A review. *Disability and Rehabilitation: An International, Multidisciplinary Journal*, 26(14-15), 837-85.
- Howard, J. H., Rechnitzer, P. A., Cunningham, D. A., & Donner, A. P. (1986). Change in Type a behavior a year after retirement. *The Gerontologist*, 26(6), 643-649.
- Hulbert-Williams, N., Neal, R., Morrison, V., Hood, K., & Wilkinson, C. (2012). Anxiety, depression and quality of life after cancer diagnosis: What psychosocial variables best predict how patients adjust? *Psycho-Oncology*, 21 (8), 857-867.
- Infurna, F. J., Gerstorf, D., & Zarit, S. H. (2013). Substantial changes in mastery perceptions of dementia caregivers with the placement of a care recipient. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 68(2), 202-214.

- Isaksson, K. & Johansson, G. (2000). Adaptation to continued work and early retirement following downsizing: Long-term effects and gender differences. *Journal of Occupational & Organizational Psychology*, 73(2), 241-256.
- Jacobsen, L.A., Mather, M., Kee, M., & Kent, M. (2011). America's aging population. *Population Bulletin*, 66, (1), 1-18.
- Jensen-Campbell, L.A., Adams, R., Perry, D.G., Workman, K.A., Furdella, J.Q., Egan, S.K. (2002). Agreeableness, extraversion, and peer relations in early adolescence: winning friends and deflecting aggression. *J. Res. Personal.* 36:224–51.
- Jung, T. & Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass*, 2(1), 302-317.
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., & Snoek, J.D. (1964). *Organizational stress*. New York: Wiley.
- Kanai, R. & Rees, G. (2011). The structural basis of inter-individual differences in human behaviour and cognition. *Nature Reviews Neuroscience*, 12(4), 231-242.
- Kanfer, R., Wanberg, C. R., & Kantrowitz, T. M. (2001). Job search and employment: A personality–motivational analysis and meta-analytic review. *Journal of Applied Psychology*, 86(5), 837.
- Karney, B.R. & Bradbury, T.N. (1995). The longitudinal course of marital quality and stability: a review of theory, method, and research. *Psychol. Bull.* 118:3–34
- Kenford, S.L., Smith, S.S., Wetter, D.W., Jorenby, D.E., Fiore, M.C., & Baker, T.B. (2002). Predicting relapse back to smoking: contrasting affective and physical models of dependence. *J. Consult. Clin. Psychol.* 70:216–27

- Kilmann, P., Laval, R., & Wanlass, R. (1978). Locus of control and perceived adjustment to life events. *Journal of Clinical Psychology*, 34 (2), 512-513.
- Kim, J. E. & Moen, P. (2001). Is Retirement Good or Bad for Subjective Well-Being? *Current Directions in Psychological Science* (Wiley-Blackwell), 10(3), 83-86.
- Kim, J. E. & Moen, P. (2002). Retirement transitions, gender and psychological well-being: A life-course, ecological model. *Journal of Gerontology*, 57 (3), 212–222.
- Kim, S. & Feldman, D. C. (2000). Working in retirement: The antecedents of bridge employment and its consequences for quality of life in retirement. *Academy of Management Journal*, 43, 1195–121.
- Kling, K. C., Ryff, C. D., Love, G., & Essex, M. (2003). Exploring the influence of personality on depressive symptoms and self-esteem across a significant life transition. *Journal of personality and social psychology*, 85(5), 922.
- Klinge, K., Chamberlain, D. J., Redden, M., & King, L. (2009). Psychological adjustments made by postburn injury patients: An integrative literature review. *Journal of Advanced Nursing*, 65 (11), 2274-2292.
- Kubicek, B., Korunka, C., Raymo, J. M., & Hoonakker, P. (2011). Psychological well-being in retirement: The effects of personal and gendered contextual resources. *Journal of Occupational Health Psychology*, 16, 230–46
- Kutner, B., Fanshel, D. T., & Togo, A. M. (1956). A.; and Langner, T. Five Hundred. Over Sixty.
- Lachman, M. E. & Weaver, S. L. (1997). Midlife Development Inventory (MIDI) personality scales: Scale construction and scoring. Unpublished Technical Report. Brandeis University. (<http://www.brandeis.edu/projects/lifespan/scales.html>)

- Lautenschlager, N. T. & Förstl, H. (2007). Personality change in old age. *Current Opinion in Psychiatry*, 20(1), 62-66.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Leana, C. R. & Feldman, D. C. (1991). Gender differences in responses to unemployment. *Journal of Vocational Behavior*, 38(1), 65-77.
- Leibowitz, Z. B. & Schlossberg, N. K. (1982). Critical career transitions: A model for designing career services. *Training & Development Journal*, 36(2), 12-19.
- Levy-Shiff, R. (1994). Individual and contextual correlates of marital change across the transition to parenthood. *Developmental psychology*, 30(4), 591.
- Löckenhoff, C. E., Terracciano, A., & Costa, P. T., Jr. (2009). Five-factor model personality traits and the retirement transition: Longitudinal and cross-sectional associations. *Psychology and Aging*, 24, 722–728.
- Lounsbury, J. W., Loveland, J. M., Sundstrom, E. D., Gibson, L. W., Drost, A. W., & Hamrick, F. L. (2003). An investigation of personality traits in relation to career satisfaction. *Journal of Career Assessment*, 11(3), 287-307.
- Luppa, M., Sikorski, C., Luck, T., et al. (2011). Prevalence and risk factors of depressive symptoms in latest life-results of the Leipzig longitudinal study of the aged (LEILA 75+). *International Journal of Geriatric Psychiatry* 27(3): 286–295. Available from: ISI: 000299552000008.
- McArdle, J. J., Fisher, G. G., & Kadlec, K. M. (2007). Latent variable analyses of age trends of cognition in the Health and Retirement Study, 1992-2004. *Psychology and aging*, 22(3), 525.

- McCrae, R.R., & Costa, P.T. (1986). Personality, coping, and coping effectiveness in an adult sample. *Journal of personality*, 54(2), 385-404.
- McCrae, R.R., Costa, P.T., Ostendorf, F., Angleitner, A., Hrebickova, M., Avia, M.D., et al. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, 78, 173–186.
- McMunn, A., Nazroo, J., Wahrendorf, M., Breeze, E., & Zaninotto, P. (2009). Participation in socially productive activities, reciprocity and wellbeing in later life: Baseline results in England. *Ageing & Society*, 29 (5), 765-782.
- Mein, G., Martikainen, P., Hemingway, H., Stansfeld, S. A., & Marmot, M. G. (2003). Is retirement good or bad for mental and physical health functioning? Whitehall II longitudinal study of civil servants. *Journal of Epidemiology and Community Health*, 57, 46–49.
- Meredith, W. & Tisak, J. (1990). Latent curve analysis. *Psychometrika*, 55(1), 107-122.
- Midanik, L. T., Soghikian, K., Ransom, L. J., & Tekawa, I. S. (1995). The effect of retirement on mental health and health behaviors: The Kaiser Permanente Retirement Study. *Journal of Gerontology: Social Sciences*, 50B, S59–S61.
- Miller, M. A. & Rahe, R. H. (1997). Life changes scaling for the 1990s. *Journal of psychosomatic research*, 43(3), 279-292.
- Miller, T.Q., Smith, T.W., Turner, C.W., Guijarro, M.L., Hallet, A.J. (1996). A meta-analytic review of research on hostility and physical health. *Psychol. Bull.* 119:322–48
- Mirowsky, J. & Ross, C. E. (1992). Age and depression. *Journal of Health and Social Behavior*, 187-205.

- Moen, P. (1996). A life course perspective on retirement, gender, and wellbeing. *Journal of Occupational Health Psychology*, 1, 131–144.
- Moen, P. (2012). Retirement dilemmas and decisions. In J. W. Hedge, W. C. Borman (Eds.) , *The Oxford handbook of work and aging* (pp. 549-569). New York: Oxford University Press.
- Mroczek, D. K. & Spiro, A. (2003). Modeling intraindividual change in personality traits: Findings from the Normative Aging Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(3), P153-P165.
- Muthén, L.K. & Muthén, B.O. (2012). *Mplus user's guide*. Los Angeles: Muthén & Muthén
- Myers, S.M. & Booth, A. (1996). Men's retirement and marital quality. *Journal of Family Issues*, 17, 336–357.
- Ofstedal, M. B., Fisher, G. G., & Herzog, A. R. (2005). Documentation of cognitive functioning measures in the Health and Retirement Study. Ann Arbor, MI: University of Michigan.
- Ozer, D. J. & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology*, 57, 401-421.
- Page, J., Bruch, M. A., & Haase, R. F. (2008). Role of perfectionism and five-factor model traits in career indecision. *Personality and Individual Differences*, 45(8), 811-815.
- Palmore, E. & Luikart, C. (1972). Health and social factors related to life satisfaction. *Journal of Health and Social Behavior*, 68-8.
- Paunonen, S. V. & Ashton, M. C. (2001). Big five factors and facets and the prediction of behavior. *Journal of personality and social psychology*, 81(3), 524.
- Perreira, K.M. & Sloan, F.A. (2001). Life events and alcohol consumption among mature adults: a longitudinal analysis. *J. Stud. Alcohol* 62:501–8

- Philips, B. (1957). A role theory approach to adjustment in old age. *American Sociological Review*, 22, 212-217.
- Phillips, S. M., Wójcicki, T. R., & McAuley, E. (2013). Physical activity and quality of life in older adults: an 18-month panel analysis. *Quality of Life Research*, 22(7), 1647-1654.
- Pienta, A.M. (2003). Partners in marriage: an analysis of husbands' and wives' retirement behavior. *J. Appl. Gerontology*. 22:340–58
- Pinquart, M. & Schindler, I. (2007). Changes of life satisfaction in the transition to retirement: A latent-class approach. *Psychology and Aging*, 22, 442–455.
- Portnoi, V. A. (1983). Postretirement depression: myth or reality. *Comprehensive therapy*, 9(7), 31-37.
- Potočnik, K. & Sonnentag, S. (2013). A longitudinal study of well-being in older workers and retirees: The role of engaging in different types of activities. *Journal of Occupational and Organizational Psychology*, 86 (4), 497-521.
- Potočnik, K., Tordera, N., Peiro, J.M. (2010). The influence of the early retirement process on satisfaction with early retirement and psychological well-being. *Int. J. Aging Hum. Dev.* 70:251–73
- Potter, G. G., Helms, M. J., & Plassman, B. L. (2008). Associations of job demands and intelligence with cognitive performance among men in late life. *Neurology*, 70, 1803–1808.
- Preacher, K. J., Wichman, A. L., MacCallum, R. C., & Briggs, N. E. (2008). *Latent Growth Curve Modeling. Quantitative Applications in the Social Sciences.*



- Quick, H.E. & Moen, P. (1998). Gender, employment and retirement quality: A life course approach to the differential experiences of men and women. *Journal of Occupational Health Psychology*, 3, 44–64.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.
- Ram, N. & Grimm, K. J. (2009). Methods and measures: Growth mixture modeling: A method for identifying differences in longitudinal change among unobserved groups. *International Journal of Behavioral Development*, 33(6), 565-576.
- Ramjeet, J., Smith, J. & Adams, M. (2008). The relationship between coping and psychological and physical adjustment in rheumatoid arthritis: a literature review. *Journal of Clinical Nursing*, 17, 418–428.
- Reitzes, D.C. & Mutran, E.J. (2004). The transition into retirement: Stages and factors that influence retirement adjustment. *International Journal of Aging and Human Development*, 59, 63–84.
- Richardson, V. & Kilty, K.M. (1991). Adjustment to retirement: Continuity vs. discontinuity. *International Journal of Aging and Human Development*, 33, 151–169.
- Roberts, B. & Caspi, A. (2003). The cumulative continuity model of personality development: Striking a balance between continuity and change in personality traits across the life course. In U.M. Staudinger & U. Lindenberger (Eds.), *Understanding human development: Dialogs with lifespan psychology* (pp. 183–214). New York: Kluwer.
- Robins, R.W., Caspi, A., Moffitt, T.E. (2002). It's not just who you're with, it's who you are: personality and relationship experiences across multiple relationships. *J. Personal.* 70:925–64

- Robinson, O., Demetre, J., & Corney, R. (2010). Personality and retirement: exploring the links between the Big Five personality traits, reasons for retirement and the experience of being retired. *Personal. Individual. Differ.* 48:792–97
- Robins-Wahlin, T. & Byrne, G.J. (2011). Personality changes in Alzheimer's disease: A systematic review. *International Journal of Geriatric Psychiatry*, 26(10), 1019-1029.  
doi:1.1002/gps.2655
- Rodin, J. (1990). Control by any other name: Definitions, concepts, and processes. In J. Rodin, C. Schooler, K. Schaie (Eds.), *Self-directedness: Cause and effects throughout the life course* (pp. 1-17). Hillsdale, NJ England: Lawrence Erlbaum Associates.
- Roesch, S., Adams, L., Hines, A., Palmores, A., Vyas, P., Tran, C., & Vaughn, A. (2005). Coping with prostate cancer: A meta-analytic review. *Journal of Behavioral Medicine*, 28(3), 281-293.
- Rosenkoetter, M. M. & Garris, J. M. (1998). Psychosocial changes following retirement. *Journal of Advanced Nursing*, 27 (5), 0309-2402.
- Sapir, E. (1934). Personality. *Encyclopedia of the Social Sciences*, 12, 85–88.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6), 1063-1078.
- Scheier, M.F. & Carver, C.S. (1993). On the power of positive thinking. *Current Dir. Psychol. Sci.* 2:26–30
- Schlossberg, N. K. & Leibowitz, Z. B. (1980). Organizational support systems as buffers to job loss. *Journal of Vocational Behavior*, 18, 204-217.

- Schlossberg, N. K. & Robinson, S. P. (1996). *Going to plan B: How you can cope, regroup, and start your life on a new path*. New York: Simon and Schuster.
- Schlossberg, N. K. (1981). A model for analyzing human adaptation to transition. *The Counseling Psychologist*, 9, 2-18.
- Schlossberg, N. K. (1991). *Overwhelmed: Coping with life's ups and downs*. Lexington, MA: Lexington Books.
- Schlossberg, N. K. (2004). *Retire smart retire happy: Finding your true path in life*
- Schlossberg, N. K. (2009). *Revitalizing retirement: Reshaping your Identity, relationships, and purpose*, Washington, DC: American Psychological Association
- Schlossberg, N. K. (2011). The challenge of change: The transition model and its applications. *Journal of Employment Counseling*, 48(4), 159-162.
- Schulz, R., Beach, S., Lind, B., Martire, L., Zdaniuk, B., Hirsch, C., & Burton, L. (2001). Involvement in caregiving and adjustment to death of a spouse: findings from the caregiver health effects study. *JAMA: The Journal of the American Medical Association*, 285(24), 3123-3129.
- Secombe, K. & Lee, G. R. (1986). Gender differences in retirement satisfaction and its antecedents. *Research on Aging*, 8 (3), 426-44.
- Seiden, R. (1981). Mellowing with age: factors influencing the nonwhite suicide rate. *International Journal of Aging & Human Development*, 13 (4), 265-284.
- Seligman, M. P. (2006). *Learned optimism: How to change your mind and your life*. New York: Vintage.

- Sherman, K. A., Kasparian, N. A., & Mireskandari, S. (2010). Psychological adjustment among male partners in response to women's breast/ovarian cancer risk: A theoretical review of the literature. *Psycho-Oncology*, 19(1), 1-11.
- Shultz, K. S. & Wang, M. (2011). Psychological perspectives on the changing nature of retirement. *American Psychologist*, 66, 170–79.
- Slevin, K. F. & Wingrove, C. R. (1995). Women in retirement: A review and critique of empirical research since 1976. *Sociological Inquiry*, 65, 1-21.
- Sliwinski, M. J. (2008), Measurement-Burst Designs for Social Health Research. *Social and Personality Psychology Compass*, 2: 245–261.
- Sneed, R. & Cohen, S. (2013). A prospective study of volunteerism and hypertension risk in older adults. *Psychology and Aging*, 28 (2), 578-586.
- Stanley, S. M., Ragan, E. P., Rhoades, G. K., & Markman, H. J. (2012). Examining changes in relationship adjustment and life satisfaction in marriage. *Journal of Family Psychology*, 26(1), 165-17.
- Stanton, A.L., Revenson, T. A., & Tennen, H. (2007). Health psychology: Psychological adjustment to chronic disease. *Annual Review of Psychology*, 58, 565–92.
- Staudinger, U. M., & Kunzmann, U. (2005). Positive adult personality development: Adjustment and/or growth? *European Psychologist*, 10(4), 32.
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological bulletin*, 134(1), 138.
- Strelau, J. (1983). *Temperament, personality, activity* London Academic Press
- Strieb, G. & Schneider, C. (1971). *Retirement in American society: Impact and process*. Ithaca: Cornell University Press.

- Szinovacz, M. E. & Davey, A. (2004). Honeymoons and joint lunches: Effects of retirement and spouse's employment on depressive symptoms. *Journal of Gerontology: Psychological Sciences*, 59 B, 233-245.
- Szinovacz, M., & Washo, C. (1992). Gender differences in exposure to life events and adaptation to retirement. *Journals of Gerontology*, 47, S191-S196.
- Thoits, P. A. (1992). Social support functions and network structures. A supplemental view. In H. F. Veiel & U. Baurmann (Eds.), *The meaning and measurement of social support* (pp. 57-62). New York: Hemisphere.
- Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next?. *Journal of health and social behavior*, 53-79.
- Thoresen, C.J., Kaplan, S.A., Barsky, A.P., Warren, C.R., de Chermont, K. (2003). The affective underpinnings of job perceptions and attitudes: a meta-analytic review and integration. *Psychol. Bull.* 129: 914-45
- Togliatti, M., Lavadera, A., & Benedetto, R. (2011). How couples re-organized themselves following divorce: Adjustment, co-parenting and family alliance. *Life Span and Disability*, 14(1), 55-74.
- Trull, T.J. & Durrett, C.A. (2005). Categorical and dimensional models of personality disorder. *Annual Review of Clinical Psychol.* 1:355-80
- Trull, T.J. & Sher, K.J. (1994). Relationship between the Five Factor model of personality and Axis I disorders in a nonclinical sample. *J. Abnormal. Psychol.* 103:350-60
- Tsai, S. P., Wendt, J. K., Donnelly, R. P., de Jong, G., & Ahmed, F. S. (2005). Age at retirement and long-term survival of an industrial population: Prospective cohort study. *British Medical Journal*, 331, 995-98.

- Turner, R.J., Wheaton, B., & Lloyd, D.A. (1995). The epidemiology of social stress. *American Sociological Review*, 104-125.
- Vaillant, G. E. (1976). Natural history of male psychological health: The relation of choice of ego mechanisms of defense to adult adjustment. *Archives of General Psychiatry*, 33, 535–545.
- Van der Heide, I., van Rijn, R.M., Robroek, S.W., Burdorf, A., & Proper, K.I. (2013). Is retirement good for your health? A systematic review of longitudinal studies. *BMC Public Health*, 13(1), 1-22.
- Van Solinge, H. & Henkens, K. (2005). Couples' adjustment to retirement: A multi-actor panel study. *Journal of Gerontology: Social Sciences*, 60B, 11-2.
- Van Solinge, H. & Henkens, K. (2008). Adjustment to and satisfaction with retirement: Two of a kind? *Psychology and Aging*, 23, 422–434.
- Van Solinge, H. (2013). *The Oxford Handbook of Retirement Adjustment*
- Vandewater, E.A., Ostrove, J.M., & Stewart, A.J. (1997). Predicting women's well-being in midlife: The importance of personality development and social role involvements. *Journal of Personality and Social Psychology*, 72, 1147–1116.
- Von Bonsdorff, M.E., Shultz, K.S., Leskinen, E., Tansky, J. (2009). The choice between retirement and bridge employment: a continuity theory and life course perspective. *Int. J. Aging Hum. Dev.* 69:79–100
- Von Bonsdorff, M.E. & Ilmarinen, (2013). *The Oxford Handbook of Retirement Adjustment*. New York: Oxford Univ. Press.
- Von Hippel, W., Henry, J. D., & Matovic, D. (2008). Aging and social satisfaction: offsetting positive and negative effects. *Psychology and Aging*, 23(2), 435–439.

- Wang, M. & Bodner, T.E. (2007). Growth mixture modeling: Identifying and predicting unobserved subpopulations with longitudinal data. *Organizational Research Methods*, 10, 635– 656.
- Wang, M. & Shi, J. (2014). Psychological Research on Retirement. *Annual Review of Psychology*, 65(1), 209-233.
- Wang, M. & Shultz, K.S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management*, 36, 172–206.
- Wang, M. & Takeuchi, R. (2007). The role of goal orientation during expatriation: A cross-sectional and longitudinal investigation. *Journal of Applied Psychology*, 92, 1437–1445.
- Wang, M. (2007). Profiling retirees in the retirement transition and adjustment process: examining the longitudinal change patterns of retirees' psychological well-being. *Journal of Applied Psychology*, 92, 455–474.
- Wang, M. (2012). Health, fiscal, and psychological well-being in retirement. In J. Hedge & W. Borman (Eds.), *The Oxford Handbook of Work and Aging*, (570–84). New York: Oxford University Press.
- Wang, M. (2013). *The Oxford Handbook of Retirement*. New York: Oxford Univ. Press.
- Wang, M., Henkens, K., & van Solinge, H. (2011). Retirement adjustment: A review of theoretical and empirical advancements. *American Psychologist*, 66, 204–213.
- Warr, P. (1992). Age and occupational well-being. *Psychology and Aging*, 7, 37–45.
- Watson, D., & Clark, L.A. (1994). The PANAS-X: Manual for the positive and negative affect schedule – expanded form. Unpublished manuscript. University of Iowa.  
(<http://www.psychology.uiowa.edu/Faculty/Clark/PANAS-X.pdf>)

- Westerlund, H., Kivimaki, M., Singh-Manoux, A., Melchior, M., Ferrie, J. E., Pentti, J., & ...  
Vahtera, J. (2009). Self-rated health before and after retirement in France (GAZEL): A cohort study. *The Lancet*, *374*, 1889–1896.
- Wheaton, B. (1990). Life transitions, role histories, and mental health. *American Sociological Review*, *55* (2), 209-223.
- White, L. & Edwards, J. N. (1990). Emptying the nest and parental well-being: An analysis of national panel data. *American Sociological Review*, 235-242.
- Wong, J. & Earl, J. K. (2009). Towards an integrated model of individual, psychosocial, and organizational predictors of retirement adjustment. *Journal of Vocational Behaviour*, *75*, 1–13.
- Wu, A. M. S., Tang, C. S. K., & Yan, E. C. W. (2005). Post-retirement voluntary work and psychological functioning among older Chinese in Hong Kong. *Journal of Cross-Cultural Gerontology*, *20*, 27–45.
- Yárnoz-Yaben, S. (2010). Attachment style and adjustment to divorce. *The Spanish Journal Of Psychology*, *13* (1), 210-219.
- Zhan, Y., Wang, M., Liu, S., & Shultz, K. (2009). Bridge employment and retirees' health: A longitudinal investigation. *Journal of Occupational Health Psychology*, *14*, 374–389.