

See discussions, stats, and author profiles for this publication at:
<http://www.researchgate.net/publication/237095761>

Psychological Research on Retirement

ARTICLE *in* ANNUAL REVIEW OF PSYCHOLOGY · JUNE 2013

Impact Factor: 21.81 · DOI: 10.1146/annurev-psych-010213-115131 · Source: PubMed

CITATIONS

15

READS

282

2 AUTHORS, INCLUDING:



[Junqi Shi](#)

Sun Yat-Sen University

45 PUBLICATIONS 389 CITATIONS

SEE PROFILE

Psychological Research on Retirement

Mo Wang¹ and Junqi Shi²

¹Department of Management, Warrington College of Business Administration, University of Florida, Gainesville, Florida 32611; email: mo.wang@warrington.ufl.edu

²Department of Management, Lingnan (University) College, Sun Yat-sen University, Guangzhou 510275, China; email: shijq3@mail.sysu.edu.cn

Annu. Rev. Psychol. 2014. 65:209–33

First published online as a Review in Advance on
June 7, 2013

The *Annual Review of Psychology* is online at
<http://psych.annualreviews.org>

This article's doi:
10.1146/annurev-psych-010213-115131

Copyright © 2014 by Annual Reviews.
All rights reserved

Keywords

retirement, retirement planning, retirement decision making, retirement adjustment, bridge employment

Abstract

Retirement as a research topic has become increasingly prominent in the psychology literature. This article provides a review of both theoretical development and empirical findings in this literature in the past two decades. We first discuss psychological conceptualizations of retirement and empirical operationalizations of retirement status. We then review three psychological models for understanding the retirement process and associated antecedents and outcomes, including the temporal process model of retirement, the multilevel model of retirement, and the resource-based dynamic model for retirement adjustment. We next survey the empirical findings regarding how various individual attributes, job and organizational factors, family factors, and socioeconomic context are related to the retirement process. We also discuss outcomes associated with retirement in terms of retirees' financial well-being, physical well-being, and psychological well-being.

Contents

INTRODUCTION	210
PSYCHOLOGICAL CONCEPTUALIZATION OF RETIREMENT	211
Retirement as Decision Making	211
Retirement as an Adjustment Process	212
Retirement as a Career Development Stage	213
Empirical Operationalization of Retirement	214
PSYCHOLOGICAL MODELS FOR UNDERSTANDING RETIREMENT	215
The Temporal Process Model of Retirement	215
The Multilevel Model of Retirement	217
The Resource-Based Dynamic Model for Retirement Adjustment	219
ANTECEDENTS OF THE RETIREMENT PROCESS	220
Individual Attributes	221
Job and Organizational Factors	222
Family Factors	223
Socioeconomic Context	224
RETIREMENT OUTCOMES	224
Financial Well-Being	225
Physical Well-Being	225
Psychosocial Well-Being	226
Consequences of Financial, Physical, and Psychological Well-Being in Retirement	227
CONCLUSION	228

INTRODUCTION

Given the rapid aging of the population and labor force, employee retirement has been an important element in political, socioeconomic, and human resource areas. As a result, there is a vast and diverse body of literature on retirement, both within academic circles and in the popular press. In fact, a Google Scholar search in January 2013, using the key word retirement yielded 1,220,000 hits. Within the psychology literature, using the same key word in the PsycINFO database yielded 6,857 hits, whereas limiting the search to only peer-reviewed journal articles still yielded 4,580 hits. In the 1970s there were only 207 peer-reviewed articles for the key word retirement, according to PsycINFO. In the 1980s the count rose to 535, in the 1990s to 687, and then in the 2000s it ballooned to 2,019. Thus, it is clear that retirement is a popular topic for researchers both within and outside psychology and that it is becoming more prominent in the psychology literature.

Due to the breadth and depth of psychological research on retirement, we must place several bounds on this review. First, as is the tradition of the *Annual Review of Psychology*, we purposely orient our review with a recency bias, where we consider newer and current topics to a greater degree than older ones. This is particularly important because as socioeconomic phenomena, the forms and processes of retirement evolve as the societal structures (e.g., labor force structure, population structure, societal culture, and economic structure) change over time (Szinovacz 2013). Second, although most of our citations are relatively recent, we attempt to strike a balance by linking traditional contributions of retirement research, especially theoretical perspectives, to the

current literature. Finally, our bibliography is selective rather than exhaustive, and we orient our review to provide a critical discussion of the current status of research that aims to inspire future research.

In organizing this review, we first discuss various psychological conceptualizations of retirement, including both process-oriented conceptualizations and status-oriented empirical operationalizations. We then discuss three recent psychological models for understanding the retirement process and its antecedents and outcomes, including the temporal process model of retirement, the multilevel model of retirement, and the resource-based dynamic model for retirement adjustment. We next examine how various individual attributes, job and organizational factors, family factors, and socioeconomic context are related to the retirement process. We also review research on retirement outcomes in terms of retirees' financial well-being, physical well-being, and psychological well-being.

PSYCHOLOGICAL CONCEPTUALIZATION OF RETIREMENT

As noted by Denton & Spencer (2009), retirement has been defined in various ways by different researchers, largely depending on the research questions being addressed and the researcher's disciplinary background. In this review, following the psychological perspective laid out by Shultz & Wang (2011), we define retirement as an individual's exit from the workforce, which accompanies decreased psychological commitment to and behavioral withdrawal from work. This definition allows us to emphasize retirement as both a psychological process in conceptualization and a life status in empirical operationalization. This definition is also consistent with the argument made by life-stage developmental theorists (e.g., Levinson & Levinson 1996) that retirement is a life stage that not only corresponds to decreased levels of physical activities and productivities but also involves lowered stress and less responsibility to others in day-to-day life.

Retirement as Decision Making

In psychological research, retirement has often been conceptualized as a decision-making process, which emphasizes that when workers decide to retire, they make a motivated choice to decrease their psychological commitment to work and behaviorally withdraw from work-related activities (Adams et al. 2002, Feldman 1994, Shultz & Wang 2007, Wang et al. 2008). Essentially, this conceptualization hypothesizes that after workers make the decision to retire, their work activities should monotonically decline over time, and other life activities, such as family- and community-related activities, would increase (e.g., Wang & Shultz 2010). This conceptualization also highlights the importance of the retirement decision as a major life event and illustrates some normative motivations for people to retire, such as health issues; family care needs; attitudes toward one's job, employer, and career; and desires for leisure pursuits (e.g., Chevalier et al. 2013, Shultz et al. 1998).

When conceptualizing retirement as decision making, researchers have typically relied on the informed decision-making approach to conduct their investigations. This approach assumes that older workers make their retirement decisions based on information they have regarding their own characteristics and their work and nonwork environment. In other words, older workers are expected to search and weigh the relevant information and evaluate the overall utility of retirement before they reach the decision about retirement. Following this general approach, theoretical mechanisms that have been applied to study the retirement decision-making process include rational choice theory, image and role theory, theory of planned behavior, and expectancy theory. Specifically, rational choice theory has been used to tie older workers' financial status as well as

the external economic environment to their retirement decisions. It views the retirement decision as a result of comparing the financial resources accumulated and financial resources needed in retirement (Laitner & Sonnega 2013). Rationally, workers will retire only when they feel that their accumulated financial resources, as well as the forecast of future economic conditions, would allow them to support their consumption needs in retirement.

Both image theory and role theory have been used to link workers' demographic status, work experience, marital life, type of industries, and productivity to their retirement decision making (e.g., Adams et al. 2002, Mears et al. 2004). In particular, all of these factors are related to how people perceive themselves and their roles in the larger societal context, which creates comparison standards for workers to evaluate whether the action of retirement matches their self-images or roles. If the match is achieved, then the decision will be made to retire (Brougham & Walsh 2007).

The theory of planned behavior has been used to link workers' retirement decision to their attitudes toward their jobs, employers, careers, and retirement, as well as the workplace norms (e.g., Adams & Beehr 1998, Shultz et al. 2003, Zhan et al. 2013). The general premise of this theory highlights the importance of workers' attitudes toward retirement and its alternative—continuing working—in influencing their retirement decisions. It also emphasizes the role of perceived social pressure to retire in influencing an individual's retirement decision.

Finally, expectancy theory has been used to link workers' productivity, job characteristics, health status, and subjective life expectancy to their retirement decisions (e.g., Karpansalo et al. 2004, Shultz & Wang 2007, van Solinge & Henkens 2010). Specifically, this theory argues that when retirees perceive low expectancy for reaching good productivity or receiving rewards from their work (due to their health status, job characteristics, or skills and abilities), they are more likely to retire instead of continuing to work.

As noted by Wang & Shultz (2010), one limitation of the decision-making conceptualization of retirement is that not all retirement decisions are voluntary (e.g., Gallo et al. 2000, Szinovacz & Davey 2005, van Solinge & Henkens 2007). As such, the theoretical utility of this conceptualization depends on the extent to which the retirement decision is indeed a result of motivated choice. Therefore, the voluntariness of the retirement decision could be viewed as a boundary condition for applying the informed decision-making approach to studying the retirement decision-making process.

Retirement as an Adjustment Process

Retirement can also be conceptualized as an adjustment process that incorporates both the retirement transition (i.e., from employment to retirement) and postretirement trajectory (i.e., postretirement development in life) (Wang 2007; Wang et al. 2009, 2011). In particular, this conceptualization emphasizes that it is not the decision to retire but rather the characteristics of the retirement transition process embedded in this decision that are of most importance (van Solinge & Henkens 2008). Therefore, conceptualizing retirement as an adjustment process focuses on investigating the fine-grained nature of retirement (e.g., the timing of the retirement, the previous preparation for the retirement, the resources available in retirement, and the amount of activity change resulting from the retirement) (Szinovacz 2003). Further, this conceptualization recognizes retirement as a longitudinal developmental process characterized by adjustment, which provides a more realistic depiction of retirement (Wang et al. 2011).

When conceptualizing retirement as an adjustment process, researchers most frequently use three theories. In particular, the life course perspective considers retirement as a transition in the course of the lifespan and argues that a person's individual history (e.g., how people dealt with previous transitions, their work and leisure habits, and previous workforce participation patterns;

Appold 2004, Carr & Kail 2013, Orel et al. 2004, von Bonsdorff et al. 2009) and attributes (e.g., demographics, health and financial status, and transition-related abilities and skills; Donaldson et al. 2010, Griffin & Hesketh 2008, Wang 2007) influence the pathways he/she takes to accomplish the transition. The general premise is that if an individual has cultivated a flexible style in dealing with life transitions, is less socially integrated with work, and has the attributes that help facilitate the transition, the person will be more likely to prepare well for the transition, engage in the transition with better timing, and achieve better outcomes from the transition (van Solinge & Henkens 2008, Wang et al. 2011). Further, the life course perspective also highlights that the experience of life transitions and the posttransition development are contingent on the specific contexts in which the transition occurs, such as older workers' job-associated statuses and roles (e.g., preretirement job attitudes, job characteristics, and career standings; Wang 2007, Wang et al. 2008, Zhan et al. 2013), as well as social context (e.g., social network, family structure, and marital life; Reitzes & Mutran 2004, Szinovacz & Davey 2004, Wang 2007). Finally, the life course perspective predicts a positive developmental trajectory in retirees' postretirement life, which is characterized by gradually decreased psychological and physical demands (Pinquart & Schindler 2007, Wang 2007).

Continuity theory emphasizes human beings' general tendency to maintain consistency in life patterns over time and to accommodate changes and transitions without the experience of a stressful disruption (Atchley 1999). Consequently, continuity theory predicts that only severe difficulty in maintaining general life patterns would lead to undesirable transition quality and unsuccessful adjustment to retirement. Empirical studies have shown that such severe difficulty may be associated with declines in health and financial status (e.g., Gallo et al. 2000, Wang 2007) and functional capacity change (e.g., Shultz & Wang 2007) during retirement transition and can be countered with bridge employment (e.g., Kim & Feldman 2000, Zhan et al. 2009), retirement planning (Taylor-Carter et al. 1997), and transferability of skills (Spiegel & Shultz 2003).

Role theory emphasizes retirement as triggering a role transition, which may weaken or eliminate work roles, such as the worker role, the organizational member role, and the career role, while strengthening the family member role and the community member role (Barnes-Farrell 2003). Further, role theory argues that the role transition can lead to either positive or negative adjustment consequences, depending on whether the role transition is desirable or matches the individual's values and goals (e.g., Adams et al. 2002, Wang 2007). Applying role theory, empirical studies have examined the impact of role stressors (e.g., Lin & Hsieh 2001), role identities (e.g., Taylor et al. 2007), and values and goals (e.g., Shultz et al. 1998) on retirement transition and adjustment.

Retirement as a Career Development Stage

In the past 20 years, accompanying technology development and pension system reform, there has been a continuous trend for workers to move away from the traditional linear career progression (Wang et al. 2013). As such, instead of viewing retirement as a career exit, it can be conceptualized as a late-career development stage that recognizes the continued potential for growth and renewal of careers in people's retirement life (Wang et al. 2013, Wang & Shultz 2010). This conceptualization is consistent with the protean career model, which argues that careers are controlled by workers themselves and focus on the worker's personal values and goals (e.g., Kim & Hall 2013). Specifically, this conceptualization pays great attention to how retirees may align their career goals with their work and leisure activities in retirement life and emphasizes examining unique factors that are associated with retirees' career potential and career pursuit, which may inform retirees' workforce participation activities and patterns after they retire. Thus,

the research question considered by conceptualizing retirement as a career development stage centers on retirees' agency efficacy in career pursuit (e.g., Jex et al. 2007, Post et al. 2013).

Applying this conceptualization, empirical studies have shown that at the individual level, factors that influence one's career capacity, such as physical aging (e.g., Gobeski & Beehr 2008, Wang et al. 2008), cognitive aging (e.g., Wang & Chen 2006), and experience and expertise (e.g., Kim & Feldman 2000), may impact retirees' further career engagement and development. At the job level, issues such as keeping up with technology demands at work (Spiegel & Shultz 2003), searching for desirable job characteristics (Adams & Rau 2004, Rau & Adams 2005), and coping with job stressors (Elovainio et al. 2005, Shultz et al. 2010) have been shown to influence retirees' career pursuit. Finally, at the organizational level, factors such as organizational climate related to age bias and discrimination (Posthuma & Campion 2009), organizational downsizings (Gallo et al. 2000), and age-related managerial accommodations (Zappala et al. 2008) have also been associated with retirees' career pursuit. It is important to recognize that factors that may influence younger workers' career pursuits are not necessarily the same as those that may influence older workers' and retirees' career pursuits (Kim & Hall 2013, Wang et al. 2013). For example, to retirees, job security is often a minor concern when they choose to continue work part time (Morrow-Howell & Leon 1988).

Empirical Operationalization of Retirement

In the psychology literature, although retirement has often been conceptualized as one of three psychological processes we reviewed above, empirical studies have operationalized retirement status in multiple different ways. In fact, Ekerdt (2010, p. 70) has noted, "The designation of retirement status is famously ambiguous because there are multiple overlapping criteria by which someone might be called retired, including career cessation, reduced work effort, pension receipt, or self-report." Recently, Denton & Spencer (2009) identified eight different common ways that researchers from across the globe measured retirement status: (a) nonparticipation in the labor force, (b) reduction in hours worked and/or earnings, (c) hours worked or earnings below some minimum cutoff, (d) receipt of retirement/pension income, (e) exit from one's main employer, (f) change of career or employment later in life, (g) self-assessed retirement, and (h) some combination of the previous seven. Not surprisingly, psychologists, who are more likely to study individual-level phenomena, are most likely to choose to operationalize retirement status via self-report and self-assessment (Shultz & Wang 2011). Nevertheless, it is important for researchers to realize that operationalizing retirement in different ways may yield dramatically different findings, and it is possible to have mismatch between the conceptualization of retirement and the operationalization of retirement, rendering difficulty in interpreting research findings.

For example, if a researcher conceptualizes retirement as a decision made with the intention to withdraw from the workforce, it may be best to measure retirement via self-assessment but not via receipt of retirement/pension income. This is because a person may be eligible to receive retirement/pension income but still be engaged in some form of employment and have no intention of exiting the workforce. Similarly, it may not be ideal to use nonparticipation in the labor force or hours worked as indicators of retirement status because older workers may cease their participation in the workforce or cut down their work hours involuntarily. As such, these indices may not sufficiently capture the active withdrawal intention from the workforce that the researcher aims to operationalize. However, if a researcher wishes to study changes in retirees' financial statuses as a result of decision making and how these changes may be associated with changes in their health statuses, then using receipt of retirement/pension income as a measure of retirement status may provide a more accurate and relevant operationalization that could generate policy implications.

Further, if a researcher wishes to study how retirement-related human resource management practices influence retirees' career-related choices (e.g., conceptualizing retirement as a career development stage), then the exit from one's organization may be used as the more relevant operationalization of retirement status. Finally, following Wang et al. (2013), we recommend that researchers accommodate the specific features of the person's retirement (e.g., paid work hours, nature of the employment, and amount of pension/social security received) in their inquiries to better capture the heterogeneity of retirement in their operationalization.

PSYCHOLOGICAL MODELS FOR UNDERSTANDING RETIREMENT

In this section, we focus our review on three psychological models that clarify the retirement process and its antecedents and outcomes. They are the temporal process model of retirement, the multilevel model of retirement, and the resource-based dynamic model for retirement adjustment. In particular, the temporal process model of retirement provides a heuristic description of the retirement process itself, characterizing the retirement process as including three different phases that gradually unfold. The multilevel model of retirement provides a systematic and structural approach for searching and examining potential antecedents that can be used to understand and predict the retirement process. Finally, the resource-based dynamic model for retirement adjustment offers a coherent theoretical framework for understanding outcomes of the retirement process.

The Temporal Process Model of Retirement

The temporal process model of retirement argues that the retirement process usually consists of three broad and sequential phases: retirement planning, retirement decision making, and retirement transition and adjustment (Shultz & Wang 2011, Wang & Shultz 2010). In particular, the process typically starts with a somewhat distal preretirement preparation and planning phase (i.e., retirement planning), as individuals begin to envision what their retirement might entail and begin discussing those plans with friends, family members, and colleagues. Through this process, retirement planning helps in generating more accurate expectations for retirement life as well as mobilizing and organizing resources to serve the needs of the individual in the coming retirement. In particular, Taylor-Carter et al. (1997) categorize retirement planning into financial and cognitive planning. The goal of financial planning is to find a balance between revenue income and revenue expenditure that allows the individual to maintain a desired lifestyle in retirement (Hershey et al. 2013).

Although there often are social security and employer-provided pension funds for retirees to some degree, the focus of financial planning for retirement is on private savings. McCarthy (1996) argues that there are six steps in financial planning for retirement: collecting personal financial data, defining goals, identifying problems, planning, implementing the plan, and monitoring and revising the plan. Many challenges exist for the individual during financial planning because of varying levels of motivation to save for retirement across the lifespan and a fluctuating economic environment for investing (Hershey et al. 2013). Regarding cognitive planning for retirement, according to Adams & Rau (2011), the goal is to address four key questions: What will I do? How will I afford it? Where will I live? Who will I share it with? Answering these questions requires the individual to gather large amounts of information about the current situation (e.g., amount of current funds or current state of health) as well as to use cognitive skills to make predictions about possible futures (e.g., community involvement or working state of a spouse; Leung & Earl 2012, Wang 2007). Previous research has demonstrated that retirement planning in both financial and

cognitive ways is crucial for structure, social interaction, and maintaining a standard of living into retirement (Hershey et al. 2013).

Next, as retirement becomes more proximal, one enters the retirement decision-making phase. Consistent with the informed decision-making approach we reviewed previously, during this phase, one has to weigh the values of work and leisure over time against individual circumstances to make the retirement decision. Some researchers have attempted to further specify the retirement decision-making phase into smaller stages. For example, Feldman & Beehr (2011) focused on capturing the thought-change process concerning retirement decision making and categorized the retirement decision-making phase into three stages: imagining the possibility, assessing when it is time to let go of the job, and putting concrete plans into action at present. These three stages characterize a cognitive process that first brainstorms possible futures, then considers the past experiences at work, and finally uses the compiled information to take steps toward retirement in the present (Feldman & Beehr 2011).

Sometimes the individual may also face the decision of whether to retire early. Early retirement has been defined as exiting the workforce before an individual is eligible for receiving social security benefits and/or pension (Damman et al. 2011, Feldman 1994, Kim & Feldman 1998). As such, in the United States, early retirement is usually operationalized as retiring before age 62 (i.e., the earliest one can start receiving social security benefits). Recently, Feldman (2013) argued that one's status of **early retirement is at least partly subjective as well. In other words, whether a person retires early also depends on whether retirement happens at an age that is younger than one's expected retirement age** (Potocnik et al. 2010). This subjective component for defining early retirement has become more and more prominent, given that continuous technology advancement and health care improvement have allowed people to work longer, even after they take early retirement incentives (e.g., Kim & Feldman 2000). This subjective definition also emphasizes the role of perceived person-environment fit in making early retirement decisions, as people who perceive poor person-environment fit with their work are more likely to exit the workforce early (Armstrong-Stassen et al. 2012, Feldman 2013, Herrbach et al. 2009).

Finally, as individuals make the transition from full-time worker to retiree, they enter the phase of retirement transition and adjustment. The most prominent component of this adjustment process involves changes in daily activity. Retirees have many options for how to spend their time after entering retirement, including leisure activities, volunteer work, and various forms of paid work (Adams & Rau 2011). Leisure activities are characterized by enjoyment, novelty, relaxation, companionship, aesthetic appreciation, and intimacy, including talking to or visiting friends and family, involvement in clubs and organizations, religious activity, physical activity such as exercise and sports, and hobby activity such as gardening and arts and crafts (Nimrod et al. 2009). Volunteer work can involve caring for one's family members as well as formally volunteering outside the home in business and civic organizations (Dosman et al. 2006, Kaskie et al. 2008).

Paid work following retirement is commonly referred to as bridge employment, which is defined as the pattern of labor force participation exhibited by older workers as they leave their career jobs and move toward complete labor force withdrawal (Feldman 1994, Wang et al. 2009). Recent studies have documented the high prevalence of engagement in bridge employment among retirees. For example, Brown and colleagues (2010) showed that over 20% of workers age 50 and older who reported themselves as being retired were also working for pay at the same time, which suggests a much higher prevalence rate for retirees to take bridge jobs. They also found that 75% of workers aged 50 and older expect to have a paid job during retirement. Similarly, Giandrea et al. (2009), using the Health and Retirement Study data from 1998 through 2006, found that among those aged 51 to 56 in 1998, 64% moved to a bridge job prior to exiting the labor force completely. Many financial factors could motivate an individual to seek further work after retirement, such

as an increasing age to qualify for social security benefits, a decline of traditional defined benefit plans in favor of defined contribution plans (such as 401k plans), and improved labor market earnings (Cahill et al. 2013). Individuals may also try to mitigate and adapt to the lifestyle change in retirement by continuing workforce participation (Wang & Shultz 2010).

Bridge employment can take many different forms. **When the work hours in bridge employment are reduced, compared to the preretirement job, the bridge job operates in the form of phased retirement, which has been shown to help retirees ease into their retirement** (Wang et al. 2009). From the organizational perspective, one can continue working for one's preretirement employer or for a different employer full time or part time when entering retirement (Zhan et al. 2013). This organization-based bridge employment decision has received increasing research attention because more and more organizations are facing the pressure of a labor force shortage as baby boomers start to enter their retirement (Wang & Shultz 2010). As such, retaining retired workers through bridge jobs may help organizations to maintain flexible access to a skilled and experienced workforce. From the career perspective, bridge employment can also take two forms: career bridge employment, in which the individual works in the same industry or field as the individual's career job, and bridge employment in a different field (Wang et al. 2008). Previous research (e.g., Wang et al. 2008) suggests that a psychological attachment to the career and incentives given by companies to retain their skilled labor force make it likely that an individual will keep working in the form of career bridge employment, whereas a need to change working conditions contributes to bridge employment in a different field. Both forms of bridge employment can also be the result of a lack of retirement planning (Wang et al. 2008).

Summary. Using the temporal process model to describe and understand the retirement process allows researchers to investigate retirement as it unfolds over time from one phase to another. The general unfolding sequence established by this model helps researchers to further examine the interdependence among these retirement phases (e.g., how these stages influence one another and how they together influence the long-term adjustment outcomes of retirement; Shultz & Wang 2011). However, it is important to note that this temporal process is not homogeneous across individuals. Within the broad phases are smaller and shorter segments that individuals go through as they approach retirement, transition through the retirement decision-making process, and begin life as a self-designated retiree. Thus, researchers often focus on a specific phase of the retirement process in a given study, all the while realizing that they are studying just one piece of the larger retirement puzzle. In addition, this process is unlikely to go smoothly for all retirees. Some older individuals enter retirement experiencing ambivalence, anxiety, fear, depression, and a deep feeling of loss. As research summarized by Brown and colleagues (1996) and O'Rand (2003) shows, disabled individuals, individuals from traditionally disadvantaged race and ethnic groups, those from lower social classes, undocumented immigrants, the economically needy, individuals who have never worked, and the chronically unemployed will approach retirement planning, decision making, and transition and adjustment processes with vastly different experiences and perspectives. Thus, this temporal process model of retirement reinforces the need to examine the unique psychological dynamics that individuals face as they transition through their own retirement process.

The Multilevel Model of Retirement

The multilevel model of retirement originated from the sociological perspective that views retirement as a multilevel phenomenon (Szinovacz 2013). Specifically, at the societal or macrolevel, retirement can be conceived as an institution, reflecting cultural norms and societal values and

their manifestation in diverse support systems for retirees. The mesolevel consists of retirement policies and cultures reinforced at the organizational level, manifested in the explicit forms of specific organizational policies relating to benefits, retirement age, and other supports for older workers and retirees, as well as in the implicit forms of retirement images and expectations that are propagated by the organization or in the work environment. At the microlevel, retirement manifests as an individual's own pathway for exiting the workforce, emphasizing retirement plans, decisions, and postretirement activities and behaviors, largely as we reviewed previously in the temporal process model of retirement.

Applying this multilevel model of retirement to psychological research points to the importance of considering variables from various levels to understand the individual retirement process. In particular, this multilevel model of retirement reveals that one's behaviors and actions throughout the retirement process are not only influenced by the individual-level variables (i.e., the microlevel variables) but also shaped by the larger context of their retirement (i.e., the macro- and mesolevel variables). Therefore, the multilevel model of retirement can serve as a general theoretical framework for searching and examining potential antecedents that can be used to understand and predict the retirement process. In the sections that follow, we rely on this model to guide our review of empirical findings on antecedents of the retirement process.

According to Szinovacz (2013), at the **macrolevel the contexts that may impact the individual retirement process include characteristics of retirement support systems, cultural values and social norms about retirement, and economic and labor market conditions.** For example, the eligible age for receiving social security has profound impact on retirement planning and retirement decision making because it provides a concrete timeline for workers to evaluate their proximity to entering retirement life (Ekerdt et al. 2001). Further, cultural values that encourage retirement and view it as a voluntary and desirable transition are likely to shape positive attitudes toward retirement, facilitating retirement planning and early retirement decisions (Hershey et al. 2007). Similarly, social norms for retirement timing could impact retirement decision making across different work environments and cohorts (Mermin et al. 2007). It is also important to note that the gender and family norms embedded in social security benefits (e.g., spouse allowance, length-of-marriage requirements for divorces, and not recognizing homosexual partnerships) have direct consequences for retirement-related behaviors in certain populations (e.g., older minority women; Angel et al. 2007). Finally, older workers' economic context can play an important role in the retirement process. Specifically, a poor economy and high unemployment rates are likely to discourage older workers from remaining in the labor market, whereas a robust economy and low unemployment rates may be positively related to retirees' likelihood of returning to work after retirement (Munnell et al. 2008).

At the mesolevel, the contexts that may influence individual retirement processes include the work context (i.e., organizational and job factors) and the nonwork life context (i.e., family and social network factors). In particular, the relevant organizational and job factors may include age- and retirement-related human resource practices, workplace ageism, job characteristics, and job- and career-related attitudes. For example, following the rational choice approach, the availability and the form of the pension plan offered by the organization (i.e., defined benefit versus defined distribution) are expected to shape people's retirement decision making through influencing their financial resources (Laitner & Sonnega 2013, Szinovacz 2013). Further, human resource policies that accommodate older workers' needs (e.g., flexible work schedule) and counter workplace ageism may both serve to retain older workers and attract them to bridge employment in the same organization (Wang & Shultz 2010). Undesirable work conditions, such as high physical and cognitive demands, are likely to push older workers to retire (Shultz et al.

1998), whereas positive attitudes toward one's job, organization, and career are likely to keep older workers from completely exiting the workforce (Zhan et al. 2013).

The family and social network factors that may influence the individual retirement process include social support, marital and dependent-care situations, and spouse's working situations. Following the life course perspective, the life transition processes of individuals (e.g., retirement) are closely linked to their significant others (Wang & Shultz 2010). Specifically, family members and friends may influence one's retirement planning, retirement decision, and postretirement activities through lending their material and immaterial support, offering anchoring points and role modeling opportunities, and providing a desirable social context that can substitute for the relations at work (Szinovacz 2013). Further, some individuals may postpone retirement until their children are no longer dependent on them, whereas others may retire early to take care of grandchildren or dependents with illness (Brown & Warner 2008). Finally, the spouse's working situation may influence an individual's retirement planning and decision making because people typically would like to time their retirement together to ease leisure-activity planning and social adjustment (Curl & Townsend 2008).

At the microlevel, variables that may influence the individual retirement process include individual attributes (e.g., demographics, health and financial conditions, knowledge and skills, personality, and needs and values), employment history, and attitudes toward retirement. Following the life course perspective, individual attributes and employment history form the immediate personal context of the life transition process. For example, the cumulative advantage/disadvantage theory (O'Rand 2003) indicates that individuals from lower-socioeconomic-status groups not only accumulate less human capital (e.g., knowledge and skills) early in life but also are more subject to health problems. These early disadvantages tend to increase financial and health-risk exposure in adulthood, whereas advantage opens expanded opportunities. Therefore, a person's retirement process is likely influenced by the cumulative life experiences stemming from his/her individual attributes and consequent employment history (Szinovacz & Davey 2005, van Solinge & Henkens 2007). Further, an individual's attitudes toward retirement are probably the most proximal predictors of retirement-related behaviors. According to the theory of planned behavior, positive attitudes toward retirement will be associated with engagement in retirement planning and will facilitate one's decision to retire (Shultz et al. 2003).

The Resource-Based Dynamic Model for Retirement Adjustment

The resource-based dynamic model for retirement adjustment focuses on explaining retirement adjustment as a longitudinal process during which retirees' levels of adjustment may fluctuate as a function of individual resources and changes in these resources (Wang et al. 2011). Therefore, this model directs research attention to the underlying mechanism through which retirement has its impact on retirees' well-being rather than focusing on the absolute good or bad impact of retirement on retirees. As such, this model can be used as a unified theoretical framework to study various outcomes of retirement (e.g., retirees' financial, physical, and psychological well-being) as well as the factors that drive those outcomes.

Specifically, resources can be broadly defined as the total capability an individual has to fulfill his or her centrally valued needs. In a review of different types of resources studied in previous retirement research, Wang (2007) suggested that this total capability may include one's physical resources (e.g., muscle strength; Jex et al. 2007), cognitive resources (e.g., processing speed and working memory; Wang & Chen 2006), motivational resources (e.g., self-efficacy; Dendinger et al. 2005), financial resources (e.g., salary and pension; Damman et al. 2011), social resources

(e.g., social network and social support; Kim & Feldman 2000), and emotional resources (e.g., emotional stability and affectivity; Blekesaune & Skirbekk 2012). It is expected that the ease of retirement adjustment is the direct result of the individual's access to these resources. On the one hand, when people have more resources to fulfill the needs they value in retirement, they will experience less difficulty in adjusting to retirement. On the other hand, decreases in retirees' resources will have adverse effects on retirement adjustment.

Following this resource perspective, variation in well-being along the retirement adjustment process can be viewed as a result of resource changes. In other words, if compared to the reference point (e.g., the beginning of the retirement adjustment), a retiree's total resources do not change significantly (e.g., due to successfully maintaining prior lifestyles and activities), he or she may not experience significant change in well-being. If a retiree's total resources significantly decrease compared to the reference point (e.g., due to losing a major income source), he or she may experience negative change in well-being. Further, compared to the reference point, if an individual's retirement enables him or her to invest significantly more resources (e.g., due to gaining cognitive resources that were previously occupied by a stressful job) in fulfilling centrally valued needs, he or she may experience a positive change in well-being. As such, this theoretical framework has the flexibility to accommodate a variety of longitudinal patterns for retirement adjustment, which significantly enriches the understanding of individual differences in the longitudinal process of retirement adjustment (Wang 2007, Wang et al. 2013).

Moreover, using resource change as the mechanism to explain variation in retirement adjustment, this theoretical framework can also be applied to consider the factors that may influence retirement adjustment quality (e.g., Carr & Kail 2013, Kubicek et al. 2011, Wang et al. 2011). In particular, researchers may focus on examining antecedents that have a direct impact on different types of resources. This theorizing offers a large scope of antecedents that could influence various retirees' resources in the adjustment process, including variables from the macrolevel (e.g., societal norms and government policies), organizational level (e.g., organizational climate and human resource practices), job level (e.g., job conditions), household level (e.g., marital quality), and individual level (e.g., health behaviors and psychological resilience). As such, adopting the resource-based dynamic perspective may lead to a more comprehensive and fruitful examination of different factors that influence retirement adjustment.

Finally, compared to traditional theories for retirement adjustment (e.g., life course perspective, continuity theory, and role theory), this resource-based dynamic model also provides new opportunities to understand the turning point that connects two different trends in the retirement adjustment process. For example, following this model, one may hypothesize that certain individual differences (e.g., openness to change, goal orientation in retirement, and need for structure) may impact retirees' motivational resources, and certain environmental factors (e.g., family support, community cohesiveness, and unemployment rate in the local labor market) may impact retirees' financial and social resources. In turn, these resources may predict how fast the turning points will be reached for retirees who experience negative change first but positive change in their well-being later. This is because these individual differences and environment factors all facilitate retirees obtaining more resources, which makes them more likely to switch from the downward trend to the upward trend. Therefore, in future studies, applying this resource-based dynamic perspective may further improve our understanding of the form and nature of the retirement process.

ANTECEDENTS OF THE RETIREMENT PROCESS

In this section, we review empirical findings regarding antecedents of the retirement process. Based on the temporal process model reviewed previously, we focus on antecedents related to

retirement planning, retirement decision making, and postretirement activities. In particular, we follow the multilevel model of retirement and organize our review of antecedents into categories of individual attributes, job and organizational factors, family factors, and socioeconomic contexts.

Individual Attributes

Among individual attributes, various demographics have been associated with the retirement process. For example, regarding gender effect on the retirement process, Glass & Kilpatrick (1998) showed that men were more likely not only to save more for retirement, but also to invest in more aggressive financial mechanisms. Hershey et al. (2002) found that men were more likely to have specific concrete retirement goals (e.g., buy a motor home and travel to Alaska), whereas women reported more general and abstract goals (e.g., be happy). Davis (2003) found that male retirees were more likely than female retirees to engage in career bridge employment than full retirement.

Regarding the age effect on the retirement process, a recent study by Phua & McNally (2008) showed that younger and older men's attitudes toward retirement planning were somewhat different. Younger men were much less likely to be saving for retirement, and they also made a much stronger distinction between preretirement planning and financial planning for retirement, whereas older men saw these two forms of planning as more closely aligned. Further, Ekerdt et al. (2001) found that the closer the perceived proximity of retirement was, the more motivated workers were to engage in both formal and informal retirement planning activities. Age has also been repeatedly demonstrated to be one of the strongest predictors of individuals' decisions to retire: The older the individual is, the more likely it is that the individual will retire (e.g., Adams & Rau 2004, Kim & Feldman 2000, Wang et al. 2008). Davis (2003) and Wang et al. (2008) further found that younger retirees were more likely than older retirees to engage in bridge employment in a different field than in full retirement. On the other hand, Loi & Shultz (2007) found that younger retirees were more motivated to seek bridge employment opportunities than older retirees for financial reasons, whereas older retirees were more motivated than younger retirees to seek jobs with more flexible schedules.

Education is related to postretirement activities. Highly educated people typically have more capacity and options in maintaining their life patterns because of their professional knowledge and/or skills. For example, Kim & DeVaney (2005) found that retirees who had college degrees were more likely to engage in bridge employment than were those who did not have college degrees. Similarly, Wang et al. (2008) found that retirees who received more years of education were more likely to engage in bridge employment than in full retirement.

Previous studies have examined the predictive effect of health on retirement decision making and consistently found that employees who are healthy are likely to continue to stay employed, whereas those employees with health problems are more likely to retire (e.g., Shultz & Wang 2007, Szubert & Sobala 2005). Health problems also prompt perceptions of untimely and involuntary retirement (Szinovacz & Davey 2005, van Solinge & Henkens 2007). Kim & Feldman (2000) and Wang et al. (2008) also found that retirees who had better health were more likely to engage in bridge employment than in full retirement.

Citing a 2004 AARP report, Taylor & Geldhauser (2007) note that older workers from lower income brackets (household income lower than \$40,000) are less likely than those from higher income brackets (household income higher than \$100,000) to engage in informal and formal retirement planning. Financial status consistently predicts retirement decisions as well. Specifically, those with more accumulated financial resources and higher perceptions of their adequacy are more likely to retire (Gruber & Wise 1999). However, when it comes to bridge employment,

the relationship is rather complicated. For example, Wang et al. (2008) found that retirees' total wealth did not predict the likelihood that retirees would engage in career bridge employment versus full retirement. This suggests that financial motivation may not be a primary driving force for people to engage in career bridge employment versus full retirement. However, Wang et al. (2008) did find that retirees who had better financial conditions were less likely to engage in bridge employment in a different field than to pursue full retirement. This is consistent with Kim & Feldman's (2000) finding that an individual's salary at retirement was negatively related to the amount of work a retiree did in bridge employment.

Regarding the effect of personal needs and values, Shultz et al. (1998) found that retirees who valued leisure activities (e.g., travel and hobbies) and spending time with family were more likely to voluntarily retire. Further, Adams & Rau (2004) found that that retirees' work ethic was negatively related to their pursuit of bridge employment opportunities. Perhaps people with greater work ethic might be more prepared for retirement and might feel it to be their "just reward" for their years of hard work. It has been shown that retirees who had generative motives (i.e., working for teaching and sharing knowledge with the younger generation) were more likely to take bridge employment than full retirement (Dendinger et al. 2005). Davis (2003) also found that retirees who had higher entrepreneurial orientations were more likely to engage in career bridge employment than in full retirement, whereas retirees who had more desire to pursue a new career were more likely to engage in bridge employment in a different field than in full retirement.

Regarding the effect of personality on the retirement process, Lockenhoff and colleagues (2009) found that individuals low in conscientiousness retired earlier than those who were high in conscientiousness. Robinson et al. (2010) found that neuroticism was related to a negative view of retirement circumstances, whereas conscientiousness was related to a more positive perception of the retirement decision. A recent study by Blekesaune & Skirbekk (2012) demonstrated some interesting interaction effects between personality and gender in predicting disability-related retirement. Specifically, they found that neuroticism increased the risk for women to take disability-related retirement, whereas openness increased such risk for men. Further, agreeableness and extraversion decreased the risk for disability-related retirement for men. The mechanisms behind these interaction effects were still unclear.

Older workers' attitudes toward retirement also play important roles in shaping the retirement process. Kim & Moen (2001) reported that in the preretirement stage, unfavorable attitudes toward retirement were associated with the absence of retirement planning and failure to seek information about retirement. Ekerdt et al. (2001) also found that ambivalent attitudes about the timing and form of retirement were related to uncertainty in making retirement decisions. Finally, Adams & Rau (2004) found that retirees' negative attitude toward retirement was positively related to their search for bridge employment opportunities.

Job and Organizational Factors

Numerous studies have shown that the characteristics of one's preretirement job have important implications for the retirement process. For example, both Lin & Hsieh (2001) and Elovainio et al. (2005) reported that those who perceived their jobs as being stressful and having higher workloads intended to retire early. Similarly, research on blue-collar workers in Poland (Szubert & Sobala 2005) indicated that demanding work conditions (e.g., heavy lifting at work) were related to increased risks for leaving the workforce before the nationally mandated age of retirement. Further, Wang et al. (2008) and Gobeski & Beehr (2008) found that workers in stressful jobs (e.g., jobs with greater physical and psychological demands) were more likely to take bridge employment in a different field than to take career bridge employment or full retirement.

Job and career attitudes have also been shown to be critical for the retirement process. For example, researchers reported that those who report simply “being tired of work” were more likely to decide to retire (e.g., Bidwell et al. 2006). **On the other hand, Adams and his colleagues (e.g., Adams & Beehr 1998, Adams et al. 2002) showed that one’s organizational commitment and career attachment were negatively related to the decision to retire.** Wang et al. (2008) found that retirees who had higher job satisfaction at preretirement jobs were more likely to engage in career bridge employment than in bridge employment in a different field or in full retirement, whereas Kim & Feldman (2000) showed that retirees with longer job tenure were more likely to engage in bridge employment than in full retirement.

Organizational policies and workplace norms with regard to older workers and retirement are important to the retirement process as well. In particular, the retirement benefit packages offered by the employer, such as pension and health insurance, have profound influence on the retirement process. For example, Kim & Feldman (1998) found that both lower salary and higher pension benefits were significantly related to early retirement decisions. Munnell and colleagues (2004) also found that pension coverage increased the probability of actual retirement, and this effect was more pronounced for individuals with defined benefit plans than for those with defined contribution plans. Regarding the effect of health insurance coverage, Mermin et al. (2007) showed that individuals whose employers provided health insurance coverage after retirement expected to retire earlier and also did in fact retire earlier than those whose employers covered only current workers.

Further, Settersten & Hagestad (1996) reported that workplace norms regarding appropriate retirement ages produce pressures on older workers with regard to their retirement preferences and plans. Specifically, they found that individuals who were behind schedule with regard to their career advancement or who had plateaued in their careers or jobs were more likely to feel pressure from the organization to retire. On the other hand, Rau & Adams (2005) found that human resource practices such as scheduling flexibility and equal employment opportunity targeted to older workers increased the desirability of potential bridge employment opportunities for retirees.

Family Factors

Several family factors may influence the retirement process. First, family members can play an important part in retirement planning, either through involvement in or influence on each other’s retirement plans. Such involvement in planning activities is evident from studies showing that spouses often influence each other’s retirement decisions as well as each other’s financial preparation for retirement (e.g., Henkens & van Solinge 2002). For example, risk aversion in the allocations in defined contribution plans is related to risk aversion of the spouse (Bernasek & Shwiff 2001). There is also evidence that spouses coordinate their pension decisions and opt for similar rather than diversified investments (Shuey 2004).

Second, events in families’ lives may serve as anchor points for individuals’ retirement decision making. For example, spouses may time their retirement in relation to that of their partner (Curl & Townsend 2008, Henkens 1999), and one spouse’s retirement may accelerate the retirement transition of the other spouse (Pienta 2003). Nevertheless, the impact of marital status on the retirement process is less straightforward. Although some studies showed that older workers who were married were more likely to retire than those who were not married (Henkens 1999, Henkens & van Solinge 2002), other studies showed that marital status and marital quality were not related to retirement decisions (e.g., Wang et al. 2008). Further, Davis (2003) found that married retirees were less likely to engage in bridge employment than those who were not married. The effect of marital status may partly depend on the spouse’s working status. Specifically, retirees who had working spouses were less likely to take early retirement (Kim & Feldman 1998) but were more

likely to spend longer hours working on their bridge employment (Kim & Feldman 2000). Given that there have been relatively fewer studies investigating this type of antecedent on retirement decision making and bridge employment, it is too early to draw conclusions about these effects.

Third, the care needs of family members may also influence the retirement process. Studies have shown that some parents may postpone retirement until their children are no longer dependent on them, whereas others may retire early to care for dependent children or grandchildren (e.g., Brown & Warner 2008). Kim & Feldman (2000) also found that having dependent children was positively related to retirees' engagement in bridge employment. Further, illness of spouses or care needs of parents may prompt individuals to retire earlier than planned and to perceive such retirements as forced rather than wanted (Szinovacz & Davey 2004, 2005).

Socioeconomic Context

Different countries often endorse different social institutions for retirement support. Therefore, across different societies, older workers may exhibit different retirement planning behaviors. For example, Hershey et al. (2007) examined the psychological and cross-cultural precursors to financial planning for older workers in the United States and the Netherlands. They found that Dutch workers were less involved in retirement planning activities and had lower levels of goal clarity for retirement planning than did US workers. This is not surprising given that the majority of older Dutch workers are still covered by guaranteed defined benefit pension plans, whereas the vast majority of US organizations now offer more volatile and uncertain defined contributions plans.

Another important component of the social institution for retirement support is health care coverage for older adults. Research has shown that raises in Medicare eligibility age would lead employees without employer health insurance beyond retirement to further delay their retirement transition (French & Jones 2004). A similar impact on retirement decision making is expected for any increases in the social security eligibility age (Mermin et al. 2007).

Although Munnell et al. (2008) found that a robust local economy and low unemployment levels were positively related to retirees' likelihood of returning to work after retirement, there is very little research on socioeconomic infrastructures that may affect retirement behaviors or postretirement lifestyles. Given that some older workers have care responsibilities either for frail spouses or for parents (Szinovacz & Davey 2004, 2005), it would be important to investigate whether the local availability of care agencies, day care centers for the elderly, or even nursing homes influence retirement behaviors. As far as postretirement lifestyles are concerned, local infrastructures can constrain retirees' leisure pursuits or their involvement in volunteer activities, and such constraints may in turn influence retirees' decisions on whether to remain in the area or move to another location (Adams & Rau 2011).

RETIREMENT OUTCOMES

In this section, we review psychological research on the major outcomes associated with retirement. These outcomes include financial well-being, physical well-being, and psychological well-being in retirement. They are often studied as indicators of adjustment to retirement life (Wang 2012). However, it is important to recognize that retirement as a single life event is rarely the cause of these outcomes. Rather, as suggested by the resource-based dynamic model for retirement adjustment reviewed previously, the resource-related factors or changes associated with the retirement process are driving these outcomes (Wang et al. 2011). As such, our review focuses on identifying various factors embedded in the retirement process (e.g., individual attributes, preretirement job and organizational factors, family factors, retirement transition factors, and postretirement activities) that may influence these outcomes.

Financial Well-Being

A retiree's financial well-being can be defined as the extent to which the person feels satisfied with his/her financial status and is able to maintain effective financial functioning (e.g., receive stable income that will fully cover his/her expenses; Wang 2012). Among various individual attributes that influence financial well-being in retirement, financial literacy is the one that receives the most attention. The dozens of investigations that have been carried out on financial literacy during the past two decades have revealed that the extent and veracity of one's domain-specific knowledge in finance is related to financial well-being after retirement (for a review, see Lusardi 2011). Another important individual attribute that influences financial well-being in retirement is how clear a person is regarding his/her financial goals after retirement. A recent investigation of nearly 1,500 New Zealanders revealed that the clarity of one's financial goals was moderately correlated with perceived financial preparedness (Noone et al. 2010). Similarly, Stawski and colleagues (2007) found financial goal clarity regarding retirement life to be predictive of perceived financial well-being.

Not surprisingly, engagement in preretirement financial planning has been repeatedly documented to lead to better financial well-being in retirement. Specifically, financial planning is associated with increased saving for retirement, improved budgeting, and established long-term investment plans (Hershey et al. 2007). Further, people who receive additional financial incentives to retire (e.g., taking early retirement incentives or redundancy packages) are often more likely to be financially better off when entering retirement (Quick & Moen 1998).

People's preretirement job experience is related to their financial well-being in retirement as well. Specifically, people who have more disrupted preretirement career paths (e.g., changing jobs multiple times, having periods of unemployment) are less likely to receive as much social security or pensions as those who have more stable career paths, which in turn undermines their financial well-being in retirement (Glass & Kilpatrick 1998, O'Rand 2003). In fact, this is one of the reasons why women and people with lower levels of education are often financially worse off in retirement (Wang & Shultz 2010). In addition, unemployment right before retirement also poses a risk to retirees' financial well-being because it is often harder for older adults to find jobs that offer the amount of salary that is comparable to what they had before they were laid off (Pinquart & Schindler 2007). Therefore, they may have to dip into their savings before entering retirement, which creates financial pressure later in retirement.

The number of dependents and costs related to dependent care often jeopardize people's financial well-being in retirement. The more dependents the retiree has and the more cost incurred due to the dependent(s), the more likely financial well-being in retirement will suffer (Marshall et al. 2001). Further, for retirees who are in poor financial situations, working after retirement often provides additional income for their retirement, thus easing their financial difficulty (Quinn 2010). However, it is also known that retirees often seek bridge employment opportunities because of financial hardship (Cahill et al. 2013). Therefore, the causal relationship between bridge employment and financial well-being is still unclear.

Physical Well-Being

Following the contemporary wellness perspective adopted by the public health literature, a retiree's physical well-being can be defined as the extent to which there is absence of physical diseases (e.g., heart disease and cancer) and functional limitations (e.g., the lack of capability to handle daily life and engage in social activities; Jex et al. 2007, Zhan et al. 2009). It is not surprising that retirees' preretirement health status is most predictive of their physical well-being in retirement (Zhan et al. 2009). This is consistent with the notion that genetic and allostatic factors (i.e., the accumulated

cost for our body to adapt to the changing social and physical environments in which we live) are the dominant causes of major diseases (Wang & Shultz 2010). Further, healthy behaviors and habits, such as exercise, healthy diet, absence of drug and alcohol dependence, and hygiene, are important for maintaining physical well-being in retirement (Wang 2012).

Job-related physical demands have been documented as a factor related to physical well-being in retirement. People who retire from highly demanding physical jobs are more likely to experience worse cardiovascular health when they enter retirement, although over time it may improve (Tuomi et al. 1991). Health insurance in retirement is also related to physical well-being. Retirees typically enjoy better physical well-being when their health insurance offers more extensive service coverage and they incur lower out-of-pocket costs (Stanton 2006). In addition, retirees with better quality and consistency of health care are also more likely to have better physical well-being in retirement (Singh 2006).

Among postretirement activities, research has unequivocally shown that retirees who engaged in bridge employment and voluntary work had fewer major diseases and functional limitations than retirees who chose full retirement (Cahill et al. 2013, Dave et al. 2008). In fact, it has been found that engaging in bridge employment showed no differential effects on individuals' physical well-being as compared to continuing work without official retirement (Zhan et al. 2009). This suggests that physical and/or cognitive activities in working help to maintain retirees' physical health.

Psychosocial Well-Being

A retiree's psychological well-being can be defined as the extent to which the person is generally content with his/her psychological states and enjoys effective psychological functioning (Wang 2012). Using nationally representative longitudinal data from the US Health and Retirement Study and the growth mixture modeling technique, Wang (2007) showed that over an eight-year period of retirement transition and adjustment, about 70% of retirees experienced minimum psychological well-being changes, about 25% of retirees experienced negative changes in psychological well-being during the initial transition stage but showed improvements afterward, and about 5% of retirees experienced positive changes in psychological well-being. These findings were further corroborated by Pinquart & Schindler (2007), who used a nationally representative sample of German retirees from the German Socioeconomic Panel Study. Specifically, Pinquart & Schindler (2007) found that during retirement transition and adjustment, about 75% of German retirees experienced trivial changes in life satisfaction, about 9% of German retirees experienced a significant decrease in their life satisfaction during the initial transition stage but showed stable or increasing life satisfaction thereafter, and about 15% of German retirees experienced a significant increase in their life satisfaction. Although the proportion estimates for subpopulations were not entirely the same across American and German retirees, both studies support the multiple-pathway nature of retirement transition and adjustment, suggesting that retirees' psychological well-being does not follow a uniform pattern of transition and adjustment.

Retirees' work role identity has been shown to be negatively related to retirees' psychological well-being (e.g., Quick & Moen 1998, Reitzes & Mutran 2004). In particular, retirees who strongly identify themselves with their work roles are often more likely to experience decreases in psychological well-being when entering retirement. Further, people who retire from jobs that involve high levels of work stress, psychological and physical demands, job challenges, and job dissatisfaction are more likely to enter retirement with low levels of psychological well-being (Quick & Moen 1998, van Solinge & Henkens 2008, Wang 2007). Finally, people who experienced unemployment right before retirement are also more likely to enter retirement with low levels of psychological well-being (Marshall et al. 2001, Pinquart & Schindler 2007).

Married retirees usually enjoy better psychological well-being than single or widowed retirees (Pinquart & Schindler 2007), but this beneficial effect disappears when their spouses are still working (Wang 2007). Retirees with happier marriages (Szinovacz & Davey 2004, Wang 2007) and fewer dependents to support (Kim & Feldman 2000, Marshall et al. 2001) are more likely to achieve better psychological well-being as well. Finally, and not surprisingly, losing a partner during the retirement transition had a negative impact on psychological well-being (van Solinge & Henkens 2008).

Among retirement transition-related factors, the voluntariness of the retirement (Reitzes & Mutran, 2004; Shultz et al. 1998; van Solinge & Henkens 2007, 2008) and retirement planning (Petkoska & Earl 2009, Reitzes & Mutran 2004, Wang 2007) have been shown to be positively related to retirees' psychological well-being. People who retire earlier than expected or planned are more likely to experience decreased psychological well-being entering retirement (Quick & Moen 1998, Wang 2007). Further, people who retire for health reasons are more likely to experience decreased psychological well-being, whereas those who retire to become engaged in leisure or other non-work-related activities and those who receive financial incentives or redundancy payouts are more likely to experience better psychological well-being in retirement (Quick & Moen 1998).

Among postretirement activities, bridge employment (Kim & Feldman 2000, Wang 2007, Zhan et al. 2009), volunteer work (Dorfman & Douglas 2005, Kim & Feldman 2000), and leisure activities (Dorfman & Douglas 2005) are all beneficial to retirees' psychological well-being. Further, when retirees work for generative reasons (i.e., working for teaching and sharing knowledge with the younger generation), they are more likely to experience improved psychological well-being (Dendinger et al. 2005). Finally, retirees' anxiety associated with maintaining their social status and contacts via social activities was negatively related to retirement satisfaction (van Solinge & Henkens 2007, 2008).

Consequences of Financial, Physical, and Psychological Well-Being in Retirement

In reviewing the literature regarding the consequences of physical, financial, and psychological well-being in retirement, it is important to note that these wellness states influence each other to a significant extent. For example, retirees' health problems have important implications for their financial well-being because they are likely to lead to higher levels of health care costs and to limit retirees' ability to work to achieve an additional source of income (Shultz & Wang 2007). Further, problems in physical health and daily functions are likely to limit retirees' social activity and exchange with the environment, which in turn negatively impacts their psychological well-being (Pinquart & Schindler 2007, Quick & Moen 1998, van Solinge & Henkens 2008, Wang 2007).

Similarly, retirees' financial well-being could influence their physical health as well as psychological well-being. Specifically, financial well-being is closely related to retirees' life quality, such as nutrition intake, living conditions, choice of leisure activities, and health care quality (Taylor & Geldhauser 2007). Further, lack of financial well-being often manifests as a source of chronic stress, leading to anxiety and feelings of helplessness for retirees (Pinquart & Schindler 2007, Reitzes & Mutran 2004), which may increase the risk of cardiovascular episodes (Li et al. 2007).

Retirees' lack of psychological well-being often manifests as a risk factor for them to engage in maladaptive coping behaviors. For example, a lower level of adjustment to retirement is associated with increased alcohol use (e.g., Perreira & Sloan 2001). Therefore, retirees' psychological well-being has important implications for their physical health. In addition, a lower level of adjustment to retirement often decreases retirees' self-efficacy regarding managing their retirement, which in turn compromises effective goal setting for maintaining and improving financial well-being (Kim et al. 2005).

Finally, retirees' financial, physical, and psychological well-being have important influences on their longevity and mortality (Tsai et al. 2005). They also influence retirees' work-related behaviors. For example, Wang et al. (2008) found that (a) retirees who had better physical health and experienced less psychological stress were more likely to engage in career bridge employment than in full retirement, (b) retirees who had better physical health and financial conditions were more likely to engage in bridge employment in a different field than in full retirement, and (c) retirees who had better financial conditions and experienced less psychological stress were more likely to engage in career bridge employment than in bridge employment in a different field.

CONCLUSION

As this review has shown, psychological research on retirement has already established viable conceptualizations for studying the psychological nature of retirement. In addition, recent theoretical models have provided comprehensive frameworks for understanding the retirement process as well as its antecedents and outcomes. Nevertheless, empirical investigations have just started to operationalize these theoretical models, and more thorough examinations of components of the retirement process are warranted. Moving forward, we expect psychological research on retirement to take a more interdisciplinary approach, accumulate more knowledge about causal relationships, and provide more careful consideration about the research context at macro-, meso-, and microlevels.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

LITERATURE CITED

- Adams GA, Beehr TA. 1998. Turnover and retirement: a comparison of their similarities and differences. *Pers. Psychol.* 51:643–65
- Adams GA, Prescher J, Beehr TA, Lepisto L. 2002. Applying work-role attachment theory to retirement decision-making. *Int. J. Aging Hum. Dev.* 54:125–37
- Adams GA, Rau BL. 2004. Job seeking among retirees seeking bridge employment. *Pers. Psychol.* 57:719–44
- Adams GA, Rau BL. 2011. Putting off tomorrow to do what you want today: planning for retirement. *Am. Psychol.* 66:180–92
- Angel JL, Jimenénez MA, Angel RJ. 2007. The economic consequences of widowhood for older minority women. *Gerontologist* 47:224–34
- Appold SJ. 2004. How much longer would men work if there were no employment dislocation? Estimates from cause-elimination work life tables. *Soc. Sci. Res.* 33:660–80
- Armstrong-Stassen M, Schlosser F, Zinni D. 2012. Seeking resources: predicting retirees' return to their workplace. *J. Manag. Psychol.* 27:615–35
- Atchley RC. 1999. Continuity theory, self, and social structure. In *Families and Retirement*, ed. CD Ryff, VW Marshall, pp. 145–58. Newbury Park, CA: Sage
- Barnes-Farrell JL. 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
- Bernasek A, Shwiff S. 2001. Gender, risk, and retirement. *J. Econ. Issues* 35:345–56
- Bidwell J, Griffin B, Hesketh B. 2006. Timing of retirement: including delay discounting perspective in retirement model. *J. Vocat. Behav.* 68:368–87

- Blekesaune M, Skirbekk V. 2012. Can personality predict retirement behavior? A longitudinal analysis combining survey and register data from Norway. *Eur. J. Aging* 9:199–206
- Brougham RR, Walsh DA. 2007. Image theory, goal incompatibility, and retirement intent. *Int. J. Aging Hum. Dev.* 63:203–29
- Brown M, Aumann K, Pitt-Catsoupes M, Galinsky E, Bond JT. 2010. *Working in Retirement: A 21st Century Phenomenon*. Boston, MA: Fam. Work Inst., Sloan Cent. Aging Work Boston Coll.
- Brown MT, Fukunaga C, Umemoto D, Wicker L. 1996. Annual review, 1990–1996: social class, work, and retirement behavior. *J. Vocat. Behav.* 49:159–89
- Brown TH, Warner DF. 2008. Divergent pathways? Racial/ethnic differences in older women's labor force withdrawal. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 63B:S122–34
- Cahill KE, Giandrea MD, Quinn JE. 2013. Bridge employment. See Wang 2013, pp. 293–310
- Carr DC, Kail BL. 2013. The influence of unpaid work on the transition out of full-time paid work. *Gerontologist* 53:92–101
- Chevalier S, Fouquereau E, Gillet N, Demulier V. 2013. Development of the Reasons for Entrepreneurs' Retirement Decision Inventory (RERDI) and preliminary evidence of its psychometric properties in a French sample. *J. Career Assess.* 21:572–86
- Curl AL, Townsend AL. 2008. Retirement transitions among married couples. *J. Workplace Behav. Health* 23:89–107
- Damman M, Henkens K, Kalmijn M. 2011. The impact of midlife educational, work, health, and family experiences on men's early retirement. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 66:617–27
- Dave D, Rashad I, Spasojevic J. 2008. The effects of retirement on physical and mental health outcomes. *South. Econ. J.* 75:497–523
- Davis MA. 2003. Factors related to bridge employment participation among private sector early retirees. *J. Vocat. Behav.* 63:55–71
- Dendinger VM, Adams GA, Jacobson JD. 2005. Reasons for working and their relationship to retirement attitudes, job satisfaction and occupational self-efficacy of bridge employees. *Int. J. Aging Hum. Dev.* 61:21–35
- Denton F, Spencer B. 2009. What is retirement? A review and assessment of alternative concepts and measures. *Can. J. Aging* 28:63–76
- Donaldson T, Earl JK, Muratore AM. 2010. Extending the integrated model of retirement adjustment: incorporating mastery and retirement planning. *J. Vocat. Behav.* 77:279–89
- Dorfinan LT, Douglas K. 2005. Leisure and the retired professor: occupation matters. *Educ. Gerontol.* 31:343–61
- Dosman D, Fast J, Chapman S, Keating N. 2006. Retirement and productive activity in later life. *J. Fam. Econ. Issues* 27:401–19
- Ekerdt DJ. 2010. Frontiers of research on work and retirement. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 65:69–80
- Ekerdt DJ, Hackney J, Kosloski K, DeViney S. 2001. Eddies in the stream: the prevalence of uncertain plans for retirement. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 56:S162–70
- Elovainio M, Forma P, Kivimäki M, Sinervo T, Sutinen R, Laine M. 2005. Job demands and job control as correlates of early retirement thoughts in Finnish social and health care employees. *Work Stress* 19:84–92
- Feldman DC. 1994. The decision to retire early: a review and conceptualization. *Acad. Manag. Rev.* 19:285–311
- Feldman DC. 2013. Feeling like it's time to retire: a fit perspective on early retirement decisions. See Wang 2013, pp. 280–92
- Feldman DC, Beehr TA. 2011. A three-phase model of retirement decision making. *Am. Psychol.* 66:193–203
- French E, Jones JB. 2004. *The effects of health insurance and self-insurance on retirement behavior*. Work. Pap. WP2004-12. Chestnut Hill, MA: Cent. Retire. Res. Boston Coll.
- Gallo WT, Bradley EH, Siegel M, Kasl S. 2000. Health effects of involuntary job loss among older workers: findings from the Health and Retirement Survey. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 55:S131–40
- Giandrea MD, Cahill KE, Quinn JF. 2009. Bridge jobs: a comparison across cohorts. *Res. Aging* 31:549–76
- Glass JC, Kilpatrick BB. 1998. Gender comparisons of baby boomers and financial preparation for retirement. *Educ. Gerontol.* 24:719–45
- Gobeski KT, Beehr TA. 2008. How retirees work: predictors of different types of bridge employment. *J. Organ. Behav.* 37:401–25

- Griffin B, Hesketh B. 2008. Post-retirement work: the individual determinants of paid and volunteer work. *J. Occup. Organ. Psychol.* 81:101–21
- Gruber J, Wise DA. 1999. Social security and retirement around the world. *Res. Labor Econ.* 18:1–40
- Henkens K. 1999. Retirement intentions and spousal support: a multiactor approach. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 54:S63–73
- Henkens K, van Solinge H. 2002. Spousal influences on the decision to retire. *Int. J. Sociol.* 32:55–74
- Herrbach O, Mignonac K, Vandenberghe C, Negrini A. 2009. Perceived HRM practices, organizational commitment, and voluntary early retirement among late-career managers. *Hum. Resour. Manage.* 48:895–915
- Hershey DA, Henkens K, Van Dalen HP. 2007. Mapping the minds of retirement planners. *J. Cross-Cult. Psychol.* 38:361–82
- Hershey DA, Jacobs-Lawson JM, Austin JT. 2013. Effective financial planning for retirement. See Wang 2013, pp. 402–30
- Hershey DA, Jacobs-Lawson JM, Neukam KA. 2002. The influence of aging and gender on workers goals for retirement. *Int. J. Aging Hum. Dev.* 55:163–79
- Jex S, Wang M, Zarubin A. 2007. Aging and occupational health. See Shultz & Adams 2007, pp. 199–224
- Karpansalo M, Manninen P, Kauhanen J, Lakka T, Salonen J. 2004. Perceived health as a predictor of early retirement. *Scand. J. Work Environ. Health* 30:287–292
- Kaskie B, Imhof S, Cavanaugh J, Culp K. 2008. Civic engagement as a retirement role for aging Americans. *Gerontologist* 48:368–77
- Kim H, DeVaney SA. 2005. The selection of partial or full retirement by older workers. *J. Fam. Econ. Issues* 26:371–94
- Kim J, Kwon J, Anderson EA. 2005. Factors related to retirement confidence: retirement preparation and workplace financial education. *Financ. Couns. Plann. Educ.* 16:77–89
- Kim JE, Moen P. 2001. Is retirement good or bad for subjective well-being? *Curr. Dir. Psychol. Sci.* 10:83–86
- Kim N, Hall DT. 2013. Protean career model and retirement. See Wang 2013, pp. 102–16
- Kim S, Feldman DC. 1998. Healthy, wealthy, or wise: predicting actual acceptances of early retirement incentives at three points in time. *Pers. Psychol.* 51:623–42
- Kim S, Feldman DC. 2000. Working in retirement: the antecedents of bridge employment and its consequences for quality of life in retirement. *Acad. Manag. J.* 43:1195–210
- Kubicek B, Korunka C, Raymo JM, Hoonakker P. 2011. Psychological well-being in retirement: the effects of personal and gendered contextual resources. *J. Occup. Health Psychol.* 16:230–46
- Laitner J, Sonnega A. 2013. Economic theories of retirement. See Wang 2013, pp. 136–51
- Leung CSY, Earl JK. 2012. Retirement Resources Inventory: construction, factor structure and psychometric properties. *J. Vocat. Behav.* 81:171–82
- Levinson DJ, Levinson JD. 1996. *The Seasons of a Woman's Life*. New York: Knopf
- Li Y, Aranda M, Chi I. 2007. Health and life satisfaction of ethnic minority older adults in mainland China: effects of financial strain. *Int. J. Aging Hum. Dev.* 64:361–79
- Lin T, Hsieh A. 2001. Impact of job stress on early retirement intention. *Int. J. Stress Manag.* 8:243–47
- Lockenhoff CE, Terracciano A, Costa PT Jr. 2009. Five-factor model personality traits and the retirement transition: longitudinal and cross-sectional associations. *Psychol. Aging* 24:722–28
- Loi J, Shultz K. 2007. Why older adults seek employment: differing motivations among subgroups. *J. Appl. Gerontol.* 26:274–89
- Lusardi A. 2011. *Americans' financial capability*. Pension Res. Coun. Work. Pap. 2011–02, Natl. Bur. Econ. Res., Cambridge, MA
- Marshall VW, Clarke PJ, Ballantyne PJ. 2001. Instability in the retirement transition: effects on health and well-being in a Canadian study. *Res. Aging* 23:379–409
- McCarthy JT. 1996. *Financial Planning for a Secure Retirement*. Brookfield, WI: Int. Found. Empl. Benefit Plans. 2nd ed.
- Mears A, Kendall T, Katona C, Pashley C, Pajak S. 2004. Retirement intentions of older consultant psychiatrists. *Psychiatr. Bull.* 28:130–32
- Mermin GBT, Johnson RW, Murphy D. 2007. Why do boomers plan to work longer? *J. Gerontol. B Psychol. Sci. Soc. Sci.* 62:S286–94

- Morrow-Howell N, Leon J. 1988. Life-span determinants of work in retirement years. *Int. J. Aging Hum. Dev.* 27:125–40
- Munnell AH, Soto M, Triest RK, Zhivan NA. 2008. *Do state economics or individual characteristics determine whether older men work?* IB #8-13. Cent. Retire. Res. Boston Coll., Chestnut Hill, MA
- Munnell AH, Triest RK, Jivan NA. 2004. *How do pensions affect expected and actual retirement ages?* Work. Pap. 2004-270. Cent. Retire. Res. Boston Coll., Chestnut Hill, MA
- Nimrod G, Janke M, Kleiber D. 2009. Expanding, reducing, concentrating and diffusing: activity patterns of recent retirees in the United States. *Leis. Sci.* 31:37–52
- Noone JH, Stephens C, Alpass F. 2010. The Process of Retirement Planning Scale (PRePS): development and validation. *Psychol. Assess.* 22:520–31
- O’Rand A. 2003. Cumulative advantage and gerontological theory. *Annu. Rev. Gerontol. Geriatr.* 22:14–30
- Orel NA, Ford RA, Brock C. 2004. Women’s financial planning for retirement: the impact of disruptive life events. *J. Women Aging* 16:39–53
- Perreira KM, Sloan FA. 2001. Life events and alcohol consumption among mature adults: a longitudinal analysis. *J. Stud. Alcohol* 62:501–8
- Petkoska J, Earl JK. 2009. Understanding the influence of demographic and psychological variables on retirement planning. *Psychol. Aging* 24:245–51
- Pienta AM. 2003. Partners in marriage: an analysis of husbands’ and wives’ retirement behavior. *J. Appl. Gerontol.* 22:340–58
- Pinquart M, Schindler I. 2007. Changes of life satisfaction in the transition to retirement: a latent-class approach. *Psychol. Aging* 22:442–55
- Post C, Schneer JA, Reitman F, Ogilvie D. 2013. Pathways to retirement: a career stage analysis of retirement age expectations. *Hum. Relat.* 66:87–112
- Posthuma RA, Campion MA. 2009. Age stereotypes in the workplace: common stereotypes, moderators, and future research directions. *J. Manag.* 35:158–88
- Potocnik K, Tordera N, Peiro JM. 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
- Phua VC, McNally JW. 2008. Men planning for retirement: changing meaning of preretirement planning. *J. Appl. Gerontol.* 27:588–608
- Quick HE, Moen P. 1998. Gender, employment, and retirement quality: a life course approach to the differential experiences of men and women. *J. Occup. Health Psychol.* 1:44–64
- Quinn JF. 2010. Work, retirement, and the encore career: elders and the future of the American workforce. *Generations* 34:45–55
- Rau BL, Adams GA. 2005. Attracting retirees to apply: desired organizational characteristics of bridge employment. *J. Organ. Behav.* 26:649–60
- Reitzes DC, Mutran EJ. 2004. The transition into retirement: stages and factors that influence retirement adjustment. *Int. J. Aging Hum. Dev.* 59:63–84
- 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. Individ. Differ.* 48:792–97
- Settersten RA Jr, Hagestad G. 1996. What’s the latest: cultural age deadlines for educational and work transitions. *Gerontologist* 36:602–13
- Shuey KM. 2004. Worker preferences, spousal coordination, and participation in an employer-sponsored pension plan. *Res. Aging* 26:287–316
- Shultz KS, Adams GA, eds. 2007. *Aging and Work in the 21st Century*. Mahwah, NJ: Erlbaum
- Shultz KS, Morton KR, Weckerle JR. 1998. The influence of push and pull factors on voluntary and involuntary early retirees’ retirement decision and adjustment. *J. Vocat. Behav.* 53:45–57
- Shultz KS, Taylor MA, Morrison RF. 2003. Work related attitudes of Naval officers before and after retirement. *Int. J. Aging Hum. Dev.* 57:259–74
- Shultz KS, Wang M. 2007. The influence of specific health conditions on retirement decisions. *Int. J. Aging Hum. Dev.* 65:149–61
- Shultz KS, Wang M. 2011. Psychological perspectives on the changing nature of retirement. *Am. Psychol.* 66:170–79

- Shultz KS, Wang M, Crimmins E, Fisher G. 2010. Age differences in the demand-control model of work stress: an examination of data from 15 European countries. *J. Appl. Gerontol.* 29:21–47
- Singh S. 2006. Perceived health among women retirees. *Psychol. Stud.* 51:166–70
- Spiegel PE, Shultz KS. 2003. The influence of preretirement planning and transferability of skills on Naval officers' retirement satisfaction and adjustment. *Mil. Psychol.* 15:285–307
- Stanton MW. 2006. *The High Concentration of U.S. Health Care Expenditures*. Research in Action, Issue 19. AHRQ Publ. No. 06–0060. Agency Healthc. Res. Qual., Rockville, MD. <http://www.ahrq.gov/research/findings/factsheets/costs/expriach/index.html>
- Stawski RS, Hershey DA, Jacobs-Lawson JM. 2007. Goal clarity and financial planning activities as determinants of retirement savings contributions. *Int. J. Aging Hum. Dev.* 64:13–32
- Szinovacz ME. 2003. Contexts and pathways: retirement as institution, process, and experience. In *Retirement: Reasons, Processes, and Results*, ed. GA Adams, TA Beehr, pp. 6–52. New York: Springer
- Szinovacz ME. 2013. A multilevel perspective for retirement research. See Wang 2013, pp. 152–73
- Szinovacz ME, Davey A. 2004. Honeymoons and joint lunches: effects of retirement and spouse's employment on depressive symptoms. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 59:P233–45
- Szinovacz ME, Davey A. 2005. Predictors of perceptions of involuntary retirement. *Gerontologist* 45:36–47
- Szubert Z, Sobala W. 2005. Current determinants of early retirement among blue collar workers in Poland. *Int. J. Occup. Med. Environ. Health* 18:177–84
- Taylor MA, Geldhauser HA. 2007. Low-income older workers. See Shultz & Adams 2007, pp. 25–50
- Taylor MA, Shultz KS, Morrison RF, Spiegel PE, Greene J. 2007. Occupational attachment and met expectations as predictors of retirement adjustment of naval officers. *J. Appl. Soc. Psychol.* 37:1697–725
- Taylor-Carter MA, Cook K, Weinberg C. 1997. Planning and expectations of the retirement experience. *Educ. Gerontol.* 23:273–88
- Tsai SP, Wendt JK, Donnelly RP, de Jong G, Ahmed FS. 2005. Age at retirement and long term survival of an industrial population: prospective cohort study. *Br. Med. J.* 331:995–98
- Tuomi K, Järvinen E, Eskelinen L, Ilmarinen J, Klockars M. 1991. Effect of retirement on health and work ability among municipal employees. *Scand. J. Work Environ. Health* 17(Suppl. 1):75–81
- van Solinge H, Henkens K. 2007. Involuntary retirement: the role of restrictive circumstances, timing, and social embeddedness. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 62:S295–303
- van Solinge H, Henkens K. 2008. Adjustment to and satisfaction with retirement: two of a kind? *Psychol. Aging* 23:422–34
- van Solinge H, Henkens K. 2010. Living longer, working longer? The impact of subjective life expectancy on retirement intentions and behavior. *Eur. J. Public Health* 20:47–51
- von Bonsdorff ME, Shultz KS, 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
- Wang M. 2007. Profiling retirees in the retirement transition and adjustment process: examining the longitudinal change patterns of retirees' psychological well-being. *J. Appl. Psychol.* 92:455–74
- Wang M. 2012. Health, fiscal, and psychological well-being in retirement. In *The Oxford Handbook of Work and Aging*, ed. J Hedge, W Borman, pp. 570–84. New York: Oxford Univ. Press
- Wang M. 2013. *The Oxford Handbook of Retirement*. New York: Oxford Univ. Press
- Wang M, Adams GA, Beehr TA, Shultz KS. 2009. Career issues at the end of one's career: bridge employment and retirement. In *Maintaining Focus, Energy, and Options Through the Life Span*, ed. SG Baugh, SE Sullivan, pp. 135–62. Charlotte, NC: Inf. Age Publ.
- Wang M, Chen Y. 2006. Age differences in attitude change: influences of cognitive resources and motivation on responses to argument quantity. *Psychol. Aging* 21:581–89
- Wang M, Henkens K, van Solinge H. 2011. Retirement adjustment: a review of theoretical and empirical advancements. *Am. Psychol.* 66:204–13
- Wang M, Olson D, Shultz K. 2013. *Mid and Late Career Issues: An Integrative Perspective*. New York: Psychol. Press
- Wang M, Shultz K. 2010. Employee retirement: a review and recommendations for future investigation. *J. Manag.* 36:172–206
- Wang M, Zhan Y, Liu S, Shultz K. 2008. Antecedents of bridge employment: a longitudinal investigation. *J. Appl. Psychol.* 93:818–30

- Zappalá S, Depolo M, Fraccaroli F, Guglielmi D, Sarchielli G. 2008. Postponing job retirement? Psychosocial influences on the preference for early or late retirement. *Career Dev. Int.* 13:150–67
- Zhan Y, Wang M, Liu S, Shultz KS. 2009. Bridge employment and retirees' health: a longitudinal investigation. *J. Occup. Health Psychol.* 14:374–89
- Zhan Y, Wang M, Yao X. 2013. Domain specific effects of commitment on bridge employment decisions: the moderating role of economic stress. *Eur. J. Work Organ. Psychol.* 22:362–75



Contents

Prefatory

- I Study What I Stink At: Lessons Learned from a Career in Psychology
Robert J. Sternberg 1

Stress and Neuroendocrinology

- Oxytocin Pathways and the Evolution of Human Behavior
C. Sue Carter 17

Genetics of Behavior

- Gene-Environment Interaction
Stephen B. Manuck and Jeanne M. McCaffery 41

Cognitive Neuroscience

- The Cognitive Neuroscience of Insight
John Kounios and Mark Beeman 71

Color Perception

- Color Psychology: Effects of Perceiving Color on Psychological
Functioning in Humans
Andrew J. Elliot and Markus A. Maier 95

Infancy

- Human Infancy... and the Rest of the Lifespan
Marc H. Bornstein 121

Adolescence and Emerging Adulthood

- Bullying in Schools: The Power of Bullies and the Plight of Victims
Jaana Juvonen and Sandra Graham 159
- Is Adolescence a Sensitive Period for Sociocultural Processing?
Sarah-Jayne Blakemore and Kathryn L. Mills 187

Adulthood and Aging

- Psychological Research on Retirement
Mo Wang and Junqi Shi 209

Development in the Family

- Adoption: Biological and Social Processes Linked to Adaptation
Harold D. Grotevant and Jennifer M. McDermott 235

Individual Treatment

Combination Psychotherapy and Antidepressant Medication Treatment for Depression: For Whom, When, and How <i>W. Edward Craighead and Boadie W. Dunlop</i>	267
---	-----

Adult Clinical Neuropsychology

Sport and Nonsport Etiologies of Mild Traumatic Brain Injury: Similarities and Differences <i>Amanda R. Rabinowitz, Xiaoli Li, and Harvey S. Levin</i>	301
--	-----

Self and Identity

The Psychology of Change: Self-Affirmation and Social Psychological Intervention <i>Geoffrey L. Cohen and David K. Sherman</i>	333
--	-----

Gender

Gender Similarities and Differences <i>Janet Shibley Hyde</i>	373
--	-----

Altruism and Aggression

Dehumanization and Infrhumanization <i>Nick Haslam and Steve Loughnan</i>	399
The Sociocultural Appraisals, Values, and Emotions (SAVE) Framework of Prosociality: Core Processes from Gene to Meme <i>Dacher Keltner, Aleksandr Kogan, Paul K. Piff, and Sarina R. Saturn</i>	425

Small Groups

Deviance and Dissent in Groups <i>Jolanda Jetten and Matthew J. Hornsey</i>	461
--	-----

Social Neuroscience

Cultural Neuroscience: Biology of the Mind in Cultural Contexts <i>Heejung S. Kim and Joni Y. Sasaki</i>	487
---	-----

Genes and Personality

A Phenotypic Null Hypothesis for the Genetics of Personality <i>Eric Turkheimer, Erik Pettersson, and Erin E. Horn</i>	515
---	-----

Environmental Psychology

Environmental Psychology Matters <i>Robert Gifford</i>	541
---	-----

Community Psychology

Socioecological Psychology <i>Shigehiro Oishi</i>	581
--	-----

Subcultures Within Countries

Social Class Culture Cycles: How Three Gateway Contexts Shape Selves and Fuel Inequality <i>Nicole M. Stephens Hazel Rose Markus, and L. Taylor Phillips</i>	611
--	-----

Organizational Climate/Culture

(Un)Ethical Behavior in Organizations <i>Linda Klebe Treviño, Niki A. den Nieuwenboer, and Jennifer J. Kish-Gephart</i>	635
--	-----

Job/Work Design

Beyond Motivation: Job and Work Design for Development, Health, Ambidexterity, and More <i>Sharon K. Parker</i>	661
---	-----

Selection and Placement

A Century of Selection <i>Ann Marie Ryan and Robert E. Ployhart</i>	693
--	-----

Personality and Coping Styles

Personality, Well-Being, and Health <i>Howard S. Friedman and Margaret L. Kern</i>	719
---	-----

Timely Topics

Properties of the Internal Clock: First- and Second-Order Principles of Subjective Time <i>Melissa J. Allman, Sundeep Teki, Timothy D. Griffiths, and Warren H. Meck</i>	743
--	-----

Indexes

Cumulative Index of Contributing Authors, Volumes 55–65	773
Cumulative Index of Article Titles, Volumes 55–65	778

Errata

An online log of corrections to *Annual Review of Psychology* articles may be found at
<http://psych.AnnualReviews.org/errata.shtml>