

# BEHAVIORAL AND PSYCHOLOGICAL ASPECTS OF THE RETIREMENT DECISION

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*The majority of research on the retirement decision has focused on the health and wealth aspects of retirement. Such research concludes that people in better health and those enjoying a higher socioeconomic status tend to work longer than their less healthy and less wealthy counterparts. While financial and health concerns are a major part of the retirement decision, there are other issues that may affect the decision to retire that are unrelated to an individual's financial and health status. Judgment and decision-making and behavioral-economics research suggests that there may be a number of behavioral factors influencing the retirement decision. The author reviews and highlights such factors and offers a unique perspective on potential determinants of retirement behavior, including anchoring and framing effects, affective forecasting, hyperbolic discounting, and the planning fallacy. The author then describes findings from previous research and draws novel connections between existing decision-making research and the retirement decision.*

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## Introduction

Deciding when to retire may be one of the most important decisions an individual makes during his or her lifetime. Although the retirement decision occurs late in life, it can significantly affect an individual's well-being for many years. The majority of research about the retirement decision has explored the impact of health (for example, NIA (2007)) and economic status (for example, Gustman and Steinmeier (2002)) on individuals' decisions to retire.<sup>1</sup> Not surprisingly, research has indicated that individuals in poor health, or whose loved ones are suffering from negative health conditions, retire earlier than those in better health (McGarry 2002). Additionally, individuals who enjoy a higher socioeconomic status (SES) tend to work longer than lower SES individuals (Li, Hurd, and Loughran 2008).<sup>2</sup>

While financial and health concerns are a major part of the retirement decision, there are other issues that enter into the retirement decision that are unrelated to an individual's financial and health status. Research in the areas of judgment and decision making (JDM) and behavioral economics suggests

that there may be a number of behavioral factors that influence the retirement decision as well. Findings from previous JDM and behavioral-economics research offer a new perspective on the motivations underlying the retirement decision and may help generate strategies for overcoming some cognitive and emotional factors that can lead individuals to make suboptimal retirement decisions. Therefore, it is crucial that, in addition to the financial and health aspects of the retirement decision, policymakers and those in the position to guide the choices of future retirees understand the possible behavioral and psychological features of the retirement decision. In this literature review, I outline findings from JDM and behavioral

### Selected Abbreviations

EEA	earliest eligibility age
FRA	full retirement age
JDM	judgment and decision making
SES	socioeconomic status
SSA	Social Security Administration

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economics research that can inform and broaden one's perspective on why individuals decide to retire when they do.

At age 62, the current earliest eligibility age (EEA) for receiving Social Security retirement benefits, life expectancy for the average man and woman is approximately 21.4 years and 23.8 years, respectively.<sup>3</sup> This means that many individuals will spend more years in retirement than they did in school, clearly a nontrivial amount of time. Retirement trends have indicated that many individuals do, in fact, claim Social Security benefits at the EEA, or at some point before their full retirement age (FRA). An important thread uniting many of the issues discussed in this article, then, is the tendency for individuals to retire early, that is, before their FRA. However, because delaying claiming benefits results in an increased monthly benefit amount for the remainder of one's life (and the remainder of the lives of family members receiving survivor benefits), many researchers have argued that *delaying* claiming is almost always the optimal decision economically (Coile and others 2002).<sup>4</sup> In fact, the National Commission on Fiscal Responsibility and Reform (2010) recently proposed that SSA provide information to the public "with an eye toward encouraging delayed retirement" (47). Further, in a book entitled *Working Longer*, Munnell and Sass (2008) suggested that prolonged workforce participation may be "the solution to the retirement income challenge." Retirement planners have also begun to endorse retiring at later ages (for example, Spiegelman (2009)). I make recommendations throughout this article regarding ways in which policymakers and retirement counselors can encourage future retirees to consider postponing retirement, if doing so proves to be financially feasible and beneficial to the individual and his or her family.

Moving forward, this literature review is organized into five sections. First, I discuss the relationship between leaving the workforce and claiming Social Security benefits, as this interaction may be important for understanding individuals' retirement decisions. In the second section, I describe ways in which the decision context, the factors that make up a particular decision and the way in which the decision is presented or *framed*, may affect the timing of one's retirement. The third section explores how individuals' (in)ability to accurately predict their future happiness may affect their expected and actual retirement decisions. The fourth section involves predictions about the future as well, but focuses specifically on predictions of future behavior and future events. Finally, I discuss the roles

that emotions and information can play in the retirement decision. In the sections where I discuss contributions from JDM and behavioral economics, I review the current literature and then highlight possible policy implications and directions for future research where applicable.

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### ***The Big Issue***

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Before discussing the significance of the possible behavioral underpinnings of retirement, it is important to disentangle the different meanings of the term "retirement." That is, "retiring" may mean different things to different people. First, retiring can mean exiting the workforce; when individuals no longer want to or are no longer able to work, they may decide that it is time to leave the workforce. Second, retiring may refer to claiming Social Security benefits. For many retirees, those two events likely are one and the same, but those events do not always temporally coincide—individuals may claim benefits while continuing to work or they may stop working without claiming benefits.

When individuals decide to stop working, they must have a way to support themselves financially, as their income from work will no longer be available. Thus, the question of how to support oneself in retirement should be an important consideration in the retirement decision. Traditionally, income during retirement is thought to come from three main sources, or what is generally referred to as a "three-legged financial stool": Social Security benefits, pensions, and personal savings. Unfortunately, many individuals fail to consider the issue of financial well-being in retirement until retiring becomes imminent (EBRI 2008), which can mean that the "personal savings" leg of the stool is weaker than it should be. In addition, the number of workers who participate in an employer-sponsored defined benefit pension plan has decreased over the past two-to-three decades (Buessing and Soto 2006).<sup>5</sup> Individuals consequently may be left financially unprepared for retirement, leading them to rely heavily on Social Security benefits.

Indeed, Social Security comprises the majority of retirement income for many individuals (NIA 2007; SSA 2010), and this reliance on Social Security can have a major impact on the timing of one's exit from the workforce. For individuals for whom Social Security is the main or only source of income in retirement, exiting the workforce and claiming Social Security benefits likely occur concomitantly. On the other hand,

retirees who will receive a pension and/or who have personally saved for retirement may not need to claim Social Security benefits immediately upon exiting the workforce because other sources of income can fund their retirement, at least for some time.<sup>6</sup>

Coile and others (2002) highlighted a number of additional factors that may affect the relationship between retiring and benefit claiming, including life expectancy, age at retirement, and marital status. Importantly, however, the authors noted that many people may simply claim benefits immediately at age 62, without taking into account the far-reaching financial effects of this uptake decision. As such, the authors suggested that “claiming behavior should be better understood by those interested in Social Security” (384).

Related to the interaction between leaving the workforce and claiming Social Security benefits is the relationship between a retiree’s claiming age and the resulting benefit amount. This relationship should also be an important consideration in the retirement decision. Briefly, individuals can choose to begin receiving retirement benefits at any age between 62 (that is, the EEA) and 70, and this choice affects the size of the benefit. At FRA, retirees receive 100 percent of their scheduled benefits. If an individual claims benefits before his or her FRA, reduction factors are applied, permanently reducing the monthly benefit amount. If an individual claims between his or her FRA and age 70, delayed retirement credits are applied, permanently increasing the monthly benefit amount. Unfortunately, research has indicated that many future retirees do not fully understand the interplay between claiming age and Social Security benefits (Benítez-Silva, Demiralp, and Liu 2009; Liebman and Luttmmer 2009), and many simply do not know that such an interaction exists between claiming age and benefit amount (EBRI 2007). Such a lack of knowledge or understanding about claiming can lead individuals to claim Social Security benefits early, which may not be in their own best interest or in the best interest of their family members. Although informational constraints can certainly lead to suboptimal claiming decisions, JDM and behavioral economics research suggests that, even with complete knowledge of the claiming rules and their effects on benefit amounts, individuals may nevertheless decide to claim benefits when it is not economically advisable to do so.

While delaying claiming allows for permanently increased monthly Social Security benefits, more

than half of retirees nevertheless claim benefits at the EEA (for example, Song and Manchester (2007)). That behavior may have multiple determinants. For example, there is, of course, a subgroup of retirement-age individuals who must leave the workforce at the EEA for health reasons. However, the Employee Benefit Research Institute (EBRI 2006) estimated that only about 15 percent of survey respondents reported retiring early because of health problems. Therefore, the number of retirees citing a health-induced exit from the workforce is not so large that it can explain all, or even the majority, of early retirement behavior. Likewise, some individuals may start to receive benefits as soon as possible because they have been “forced” into retirement, either as a result of a layoff or a buyout offer from their employer. While the number of individuals who retire as a result of a job cut has likely risen in recent years, these retirees represent only a small subset of the retirement population; EBRI (2006) found that approximately 11 percent of those retiring early reported doing so as a result of downsizing or closure.

The claiming decision for individuals who must leave the workforce early citing poor health or a layoff very likely depends entirely on their financial condition. For those retirees, choosing the option to delay claiming may not be possible if they do not have sufficient savings or an employee pension. In addition to those *needing* or *forced* to leave the workforce, a substantial number of retirees *choose* to stop working before reaching their FRA. According to EBRI’s (2006) report, 38 percent of individuals reported retiring early; although 39 percent of early retirees surveyed said they did so because they could afford to, 24 percent reported that they wanted to do something else and 22 percent indicated that they retired early for family reasons. If individuals in those latter two groups have little personal retirement savings and no pension, they will quite likely claim Social Security benefits upon retiring.

Regardless of the specific financial needs of a potential retiree, if individuals work longer, they are less likely to claim benefits whether they have sources of retirement funding outside of Social Security or not (Gustman and Steinmeier 2002). That is, individuals who continue to earn wages through working are less likely to claim benefits, regardless of their personal savings or pensions.<sup>7</sup> Therefore, when encouraging individuals to delay claiming Social Security so that they receive a higher monthly benefit for the rest of their lives, it may behoove policymakers to shift their

focus from delaying claiming to encouraging prolonged labor force participation.<sup>8</sup> With this in mind, many of the issues raised later focus on behavioral and psychological impediments to working longer, and many of the suggested interventions focus on working longer and claiming later.

### ***The Decision Context***

As mentioned earlier, delaying the claiming of Social Security benefits is a widely publicized and popular strategy that financial planners, retirement counselors, policymakers, and the media suggest is critical for financial well-being in retirement (for example, Spiegelman (2009)). Individuals who claim at age 62 will receive reduced benefits (about a 25–30 percent reduction depending on their FRA) for the remainder of their lives, as will spouses eligible to receive survivor benefits (SSA 2009b). Why, then, is 62 the most popular age at which to start receiving benefits (Song and Manchester 2007)? As alluded to earlier, perhaps the more important question is why 62 is such a popular age at which to exit the workforce? One reason, which will underlie many of the JDM topics discussed herein, is that workers are simply “burnt out” or dissatisfied with their jobs. Indeed, previous research suggests that being tired of working is a main determinant of the preference for early retirement. Bidewell, Griffin, and Hesketh (2006) and Beehr and others (2000) found that being “tired of work” bore the strongest (negative) relationship to preferred retirement age in models including both work and nonwork predictors of retirement.<sup>9</sup> In addition, a July 2008 report from EBRI showed that respondents who reported retiring at earlier ages were more likely to indicate that they were dissatisfied with their jobs (Helman and others 2008).

It seems implausible that at exactly 62 years of age, the majority of individuals are fatigued or dissatisfied with their jobs to the point where they cannot bring themselves to work any longer in order to receive a significantly higher monthly benefit from Social Security. When factoring in that the EEA is 62 as well, it becomes apparent that the retirement spike at 62 (Song and Manchester 2007; Behagel and Blau 2010) is not just a coincidence. In addition to the retirement spike at age 62, another wave of individuals tends to retire at age 65 (Song and Manchester 2007; Behagel and Blau 2010), which was the FRA until it was phased upward in the 1983 Social Security Amendments (SSA 2009a).<sup>10</sup> These retirement spikes, centered on ages relating to Social Security policy, are an example

of how the decision context, or the way a decision is framed or presented, can affect individuals’ preferences and behaviors. In this case, retirees appear to *anchor* (Tversky and Kahneman 1974) on ages that have some retirement significance, however arbitrary. That is, retirees tend to be influenced by particular numbers (ages) associated with specific aspects of Social Security policy. Brown (2006) studied a particular set of questions asked in the Health and Retirement Study and found that 62 and 65 are the ages most frequently reported as being the “usual retirement ages” (URAs). In fact, only about 13 percent of participants reported an age other than 62 or 65 as being the URA, or the age at which people “who work with you or have the same kind of job” retire.

In addition to the anchoring effect that appears to take place in the consideration of one’s retirement age, there is also evidence that the ages on which people anchor serve as *reference points* (Kahneman and Tversky 1979b). Rather than considering options absolutely, people tend to evaluate options relatively, that is, as *gains* or *losses* from a specified reference point. JDM research dealing with the impact of expectations on individuals’ judgments and decisions (for example, Lee, Frederick, and Ariely (2006)) may suggest that individuals’ expectations about retirement can have important consequences for their retirement decisions (Lusardi 1999); among other things, expectations can lead to the establishment of reference points, or starting points, which may affect the decision of when to retire. If people are used to hearing that 62 is “the retirement age,” as opposed to it being the “early retirement age,” convincing them to wait past age 62 to claim benefits may be difficult, because 62 has come to serve as the expected retirement age—the reference point.

The following is an example of how the reference point might impact the retirement decision. Individuals are unlikely to evaluate the prospect of retiring at 64 by simply evaluating how it would feel to retire at this age. Instead, individuals may compare retiring at 64 with retiring at various older or younger ages. The significance of reference points in individuals’ valuations of available options makes future retirees’ perceptions of a *usual retirement age* important. If age 62 serves as a reference point, as previous research suggests it does (for example, Brown (2006)), individuals may view retiring at 64, for example, as a “loss.” A loss, in this sense, is simply an outcome the decision maker perceives as negative in relation to the reference point (for example, “I could have had 2 more years of

‘freedom’ had I retired at age 62”). In the context of the retirement decision, the additional monthly income from Social Security one would receive if he or she postpones retirement is quite likely perceived as a “gain” associated with delaying benefit claiming. The monetary gain resulting from delaying retirement may be evaluated with respect to a reference point of age 62 as well. Waiting to retire until age 64, for example, would result in a monthly monetary gain as compared with the benefit that would be received at age 62. However, *loss aversion* (Tversky and Kahneman 1974), or the empirical finding that individuals weigh losses more heavily than they do equivalent gains, suggests that obtaining an increased monthly benefit may not be enough to compensate for the strong reluctance to work longer. Even though the gains and losses associated with the retirement decision are in different metrics (that is, losses are in terms of extra work and gains are in terms of extra monthly Social Security income), this scenario represents a potentially common trade-off individuals considering retirement may make. In essence, prospective retirees may envision the retirement decision as simply a question of whether working an extra year is worth an extra \$50 a month in benefits.<sup>11</sup>

Over a decade ago, Fetherstonhaugh and Ross (1999) conducted one of the few experiments demonstrating the effects of reference points and loss aversion on the retirement decision.<sup>12</sup> Using the notion that individuals consider 65 to be the “default” retirement age, the authors suggested that individuals who expect to retire earlier or later than age 65 will view their resulting Social Security benefits as either a loss or a gain from this reference point. The authors further argued that simply altering the frame in which Social Security benefits are presented to future retirees may, in turn, alter their retirement preferences and behaviors. Such a result would be an example of a *framing effect* (Tversky and Kahneman 1981), which occurs when a change in the surface features of a decision problem leads individuals to make different judgments and decisions. Through experimentally manipulating the default retirement age to be 68 or 65, and framing retirement options as gains or losses from those different reference points, Fetherstonhaugh and Ross (1999) were able to demonstrate powerful framing effects. Specifically, the authors found that when the option to claim benefits at age 68 was framed as resulting in a monetary gain from an age-65 reference point, only 38 percent of survey respondents chose 68 as the preferred retirement age; on the other hand, 57 percent

of respondents chose 68 as the preferred age when receiving benefits at age 65 was framed as resulting in a monetary loss from the age-68 reference point. This result is consistent with previous research on loss aversion, which suggests that losses hurt more than equivalent gains feel good. Behaviorally, loss aversion leads individuals to choose the option that allows them to avoid a loss—a later retirement date in this case.

Interestingly, Fetherstonhaugh and Ross (1999) found no similar framing effects when the options were presented with age-62 and age-65 as the reference points. The authors suggested that this null result may stem from the specific trade-off between enjoying an early retirement, along with the leisure opportunities that early retirement affords, and the slightly greater Social Security benefit that later retirement provides. This trade-off, the authors argued, is not as pronounced at later ages (that is, between ages 65 and 68) because retiring at either of those ages is not considered to be “retiring young.” Taken together, these results underscore the significance of the decision context in the presentation of retirement-related information.

SSA’s change in policy—from use of the “break-even age” in claims representatives’ (CRs’) discussions with prospective retirees<sup>13</sup>—is a clear example of the vast policy implications of JDM research regarding the decision context. Prior to 2008, when discussing claiming options with clients, CRs were instructed to use a break-even framework, which identifies the age at which the cumulative monetary value of claiming retirement benefits later will exceed the cumulative monetary value of claiming benefits earlier. By identifying a specific month in which an individual would “breakeven,” potential retirees were able to decide if they wanted to claim early and be “ahead” *before* the break-even age, or claim later and be “ahead” *after* the break-even age. The notion of the break-even age highlights the fact that an individual will not make up the amount forfeited by delaying claiming unless they live at least as long as the break-even age (Brown, Kapteyn, and Mitchell 2010). While SSA is moving away from using break-even analyses, calculating the break-even age remains common practice in the private sector (for example, MetLife (2010)). However, recent decision-making research suggests that explaining the break-even age to prospective retirees may actually push them toward a preference for early benefit claiming. For example, Liebman and Luttmer (2009) found that presenting claiming information using a break-even frame led substantially more

respondents to favor retiring at an earlier age than did alternative frames not emphasizing the break-even age. Brown, Kapteyn, and Mitchell (2010) observed that presenting participants with break-even information led to preferred retirement ages that were approximately 1 year earlier than they were with other frames.

JDM and behavioral-economics researchers recognize the significance of the decision context on the choices individuals ultimately make, and the retirement decision is no different. Creating decision environments that lead individuals to make the best choices possible is the goal of careful *choice architecture*, which can be used to “nudge” (Thaler and Sunstein 2008) potential retirees toward retirement decisions that are more advantageous for them. As such, behavioral decision-making research can serve to guide the ways in which policymakers and retirement counselors communicate with potential retirees. For example, along with the annual Social Security Statement, in the summer of 2008 SSA began sending out a revised insert entitled “Thinking of Retiring?” to individuals aged 55 or older (SSA 2009b).<sup>14</sup> This insert contains a bar graph that shows how benefits increase as an individual’s benefit-start age increases from 62 to 70. Because graphs typically are read from left to right, age 62 may serve as an implicit reference point, prompting individuals to think in terms of increases in benefits associated with delayed claiming rather than decreases in benefits associated with early claiming.<sup>15</sup> The aforementioned study by Fetherstonhaugh and Ross (1999) suggested that this presentation of benefits may actually impact prospective retirees’ retirement decisions.

In addition to expounding on communication efforts, findings from behavioral decision-making research can also generate novel ways to approach issues surrounding the retirement decision. For example, Fetherstonhaugh and Ross (1999) suggested that providing prospective retirees with the option to receive a one-time, lump-sum retirement benefit could encourage delayed retirement. Citing a number of reasons, most grounded in behavioral economics and behavioral psychology, the authors hypothesized and found through survey research that a large majority of respondents think a one-time, lump-sum payment would provide a greater incentive to delay retirement than the standard Social Security annuity increase. As another example, previous research on a decision-making process called *query theory* (Johnson, Häubl, and Keinan 2007; Weber and others 2007) suggested that

the order in which individuals entertain thoughts about different aspects of a particular decision can affect the ultimate choice those individuals make. Following this notion, urging individuals to first think about delaying retirement and *then* think about retiring early could shift claiming behavior to later ages.

Altering the decision context provides countless opportunities for policymakers, financial planners, retirement counselors, and prospective retirees themselves to improve retirement decision making. The research highlighted in this section demonstrates why it is important for policymakers to pay careful attention to the way choices are framed or presented, as these aspects of the decision are not inconsequential.

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### ***Predicting Future Happiness***

In the previous sections, I described some potential trade-offs that individuals may make when thinking about the retirement decision—more leisure now, less money later; working longer now, a larger retirement benefit later. If those trade-offs do indeed approximate aspects of the retirement decision, this suggests that, when deciding when to retire, potential retirees actively compare what their lives would be like under different possible scenarios. That is, individuals deciding when to retire very likely compare what they imagine life would be like if they retired now with what they imagine life would be like if retirement was delayed. A necessary prerequisite of the retirement decision, then, is the accurate prediction of one’s future emotions. Unfortunately, previous JDM research has demonstrated that individuals do not make accurate *affective forecasts* (see Wilson and Gilbert (2003) for a review of the literature). There are a number of strategies individuals use to help them make accurate predictions of their future well-being, but often cognitive biases lead to erroneous predictions (Hsee and Hastie 2006). For example, prediction errors can result from the *impact bias* (Wilson and Gilbert 2003), which broadly describes individuals’ tendency to overestimate the intensity and duration of their emotions in reaction to positive and negative future events. Football fans tend to not be as happy for as long as they would expect after their favorite team wins a big game, nor do they tend to be as unhappy for as long as they would expect following their team’s loss. Similarly, teachers who obtain or fail to obtain tenure report being equally as happy, even though both groups imagine that outcome will affect their happiness for years to come (Gilbert and others 1998).

## **Affective Forecasting**

As mentioned earlier, being tired of work (Beehr and others 2000; Bidewell, Griffin, and Hesketh 2006) or dissatisfied with work (Helman and others 2008) are important determinants of preferred retirement age, suggesting that many potential retirees would quite likely consider additional years of working to be unpleasant. Put another way, many prospective retirees may think they would be happier if they left the workforce. Previous research has demonstrated that predictions of future happiness, referred to as *affective forecasting* (for example, Wilson and Gilbert (2003)), often lead individuals to imagine that the event in question would be better or worse (that is, more extreme) than it actually turns out to be. Affective forecasting is a crucial aspect of decision making because it allows individuals to anticipate how they would feel if they engage in one course of action or another. In turn, those anticipated emotions serve as information regarding which alternative from a variety of options to choose (Gilbert and Wilson 2007). As such, inaccurate affective forecasts can lead to suboptimal decisions.

Gilbert and Wilson (2007) suggested that inaccurate predictions of future happiness stem from imprecise mental simulations of future events. The authors argued that humans have the distinctive ability to “pre-experience” future events through mental simulation, and those *prospections* enable humans to make predictions about what choices would make them happy or unhappy. For example, when considering whether to make a doctor’s appointment for a colonoscopy or mammogram, patients are likely to mentally simulate that event, resulting in a feeling of uneasiness about the procedure. This example highlights the importance of affective forecasting in the decision-making process because negative feelings generated from the mental simulation can cause some individuals to avoid getting those potentially life-saving examinations. The particularly troubling aspect of affective forecasting is that individuals’ *prospections* are often inaccurate, but they drive behavior nonetheless. A colonoscopy or mammogram can produce stronger negative feelings in *prospection* than would the experience itself. Positive experiences are susceptible to the same forecasting errors. Imagining obtaining tenure (Gilbert and others 1998) or witnessing your favorite sports team win an important game (Wilson and others 2000) most likely produces stronger positive feelings than do the events themselves. Again, these exaggerated expectations can lead

to certain behaviors, like skipping a child’s recital to watch a football game, which the decision maker may later regret.

Recognizing the role that affective forecasting can play in the retirement decision may be important for understanding why individuals retire when they do. Just as potential patients mentally simulate the experience of getting a colonoscopy or mammogram before deciding whether to make an appointment, potential retirees very likely mentally simulate what retirement would be like before deciding to retire or not. Gilbert and Wilson (2007) described four characteristics typical of affective forecasts and explained why those features often lead to a mismatch between mental simulations and actual experiences. The authors argued that mental simulations are *unrepresentative*, *essentialized*, *abbreviated*, and *decontextualized*. Although previous research has not directly applied affective forecasting to the retirement decision, I suggest that the characteristics of affective forecasts may contribute to the decision by leading individuals to prefer retiring earlier rather than later.

First, mental simulations are *unrepresentative*, which means they are constructed from memories of past events that do not necessarily reflect how future events will unfold. Specifically, individuals tend to remember most vividly the best and worst aspects of an event (as well as the final moments of it), neglecting the instances that were simply average (for example, Kahneman, Wakker, and Sarin (1997)). As a result, when thinking about working additional years in order to secure a larger monthly Social Security benefit, individuals may construct mental simulations of future work experiences using their best and worst work-related memories. However, individuals typically display a *negativity bias* (see for example, Rozin and Royzman (2001)), whereby individuals are more sensitive to negative events than to positive events. When deciding whether to work extra years, then, mental simulations of such a future are likely to be negatively skewed, potentially leading individuals to leave the workforce sooner rather than later.

In addition to being unrepresentative, mental simulations are *essentialized*, which means that they only contain the main features of the event, but not the more minor details. Essentializing mental simulations of working longer may mean thinking about fundamental aspects of one’s job, such as feeling undervalued by a boss, while omitting smaller details, such as interacting with coworkers. Although feeling undervalued is a valid reason for a lack of job satisfaction,

omitting more minor details of daily work activities from mental simulations means that individuals' prospectives will not accurately reflect what it might be like to *actually* work longer. An individual's overall experience with an event takes into account major and minor factors that are both positive and negative, but mental simulations of future events take into account mostly the major events (Gilbert and Wilson 2007). Therefore, the major, sometimes negative, events that factor into individuals' mental simulations of future work will not be tempered by smaller, potentially positive factors that could make the actual experience of working longer not so bad. In addition, essentialized mental simulations of *retirement* may lead individuals to focus on the major aspects of leaving the workforce, such as large amounts of leisure time, to the exclusion of the seemingly smaller details, such as possibly having few retired friends with which to spend this newly acquired leisure time.

Mental simulations of future events are also *abbreviated*, that is, they are necessarily shorter than the actual event being simulated. Furthermore, abbreviated prospectives generally contain representations of only the earliest moments of the event in question. Therefore, when mentally simulating how retirement might be, a potential retiree is quite likely to consider only the early stages of retirement. For example, an individual may imagine the first holiday season during which he or she will not have to work on Christmas Eve, or the first Memorial Day after which he or she will not have to return to the job. Particularly in the realm of the retirement decision, those early events tend to be mostly positive aspects of retiring. The notion that mental simulations are abbreviated suggests that retirees consider less, if at all, the lasting impacts of retiring early, namely reduced benefits for themselves and their surviving spouse. The abbreviated nature of mental simulations, then, may be extremely important for the retirement decision; if retirees do not consider what the state of their retirement and finances will be in their 80s and 90s (when perhaps their retirement savings accounts have been exhausted), they will not fully realize the importance of delaying benefit claiming as long as possible. Some retirees may also find themselves bored and disengaged from society (Nuttman-Shwartz 2007), conditions that normally present themselves further into retirement. These delayed effects of early retirement most likely are underrepresented in the mental simulations of retirement, even though they are experienced in actual retirement.

Finally, mental simulations are *decontextualized*, which means that the contextual factors that are present at the time an individual mentally simulates a future event may not be present at the time the event actually occurs. When the contexts in which prospectives are generated and events are experienced are not equal, mental simulations are likely to differ from actual experiences. The notion that simulations are decontextualized may be important for the retirement decision for two reasons. First, when prospective retirees are deciding whether to leave the workforce, they do not have as much leisure time as they would in retirement. Potential retirees do not have a great deal of free time that they must fill with some sort of activity, so the context in which they mentally simulate retirement will lack the possible feelings of boredom some encounter in retirement. Second, when potential retirees decide that they want to retire, they are earning an income that will not exist once they leave the workforce. That is, potential retirees are not feeling the strain of limited income, and the context in which they mentally simulate retirement will not include the negative feelings associated with having inadequate funds. When individuals have the advantage of a bi-monthly paycheck that covers their living expenses, they may not consider what it would be like to receive only one monthly check that is less than their pre-retirement income. Unfortunately, a financially suffering 85-year-old retiree cannot make up for the inaccurate affective forecast of his or her 62-year-old, relatively wealthier self.

All of the aforementioned characteristics of mental simulations may contribute to potentially inaccurate affective forecasts of retirement. Individuals may choose to retire early both because they think working longer will be worse than it is and because they think life in retirement will be better than it is. While that notion is speculative at this point, it is easily testable. For example, a researcher could ask prospective retirees how they would feel if they delayed retirement past their expected retirement date and compare their responses to those of retirees who *did* postpone their retirement. Previous research employing this methodology in other domains has typically demonstrated that individuals who are asked to predict their future happiness make forecasts that are too extreme in the predicted direction (see for example, Gilbert and others (1998)). By using a "think-aloud" or "type-aloud" procedure, researchers could also assess the kinds of thoughts individuals consider when making those predictions about future happiness. For

example, consistent with the notion that prospectives are essentialized, do prospective retirees overemphasize the fundamental (sometimes negative) aspects of their jobs and omit more minor details that make each workday manageable? Do they focus on events and emotions that might occur only shortly after retiring, consistent with the abbreviated nature of prospectives? How do these types of thoughts compare with those of individuals who are actually working longer than they expected?

Demonstrating that affective forecasting errors occur when individuals are thinking about why they should retire at a given time could be useful in developing interventions for overcoming, or debiasing, such prediction errors. Previous research has provided examples of successful debiasing techniques aimed at making individuals' affective forecasts more accurate. In one experiment, Wilson and others (2000) asked participants to write down in a prospective "diary" how much time they might spend performing a number of everyday activities on a specific date in the future. Simply performing this task helped participants make more accurate affective forecasts of how they might feel after their team won or lost a football game that was to take place on a future date. In that case, the diary helped participants recognize that their attention would not be entirely focused on the outcome of the game, and their emotions following the game would therefore be less extreme than they would have otherwise predicted; effectively, the diary helped participants recognize that life would go on after the game, win or lose. A similar procedure may be useful in helping individuals generate retirement-related prospectives that are less essentialized. Specifically, individuals considering retirement could be asked to write down what events might take place during a typical workday. This activity would likely lead prospective retirees to paint a more complete and accurate picture of what it would be like to work longer—without omitting the minor details of their job that may make each day somewhat enjoyable.

### ***Impact Bias, the Psychological Immune System, and Immune Neglect***

When attempting to predict future happiness, it is important to accurately predict both *how* one would feel (for example, happy, sad, angry, excited), as well as *how long* the predicted emotions would persist. *Impact bias* broadly describes individuals' tendency to overestimate both the intensity and the duration of emotions that may result from a particular future event

(Wilson and Gilbert 2003). Impact bias is helpful in explaining how inaccurate affective forecasts may lead potential retirees to exit the workforce early. Specifically, when individuals consider the benefits of leaving the workforce, unrealistic expectations of the positive impact that retiring would have on their future happiness, as well as incorrect estimates of how long this enjoyment would be expected to last, may sway potential retirees toward early retirement. Of course, when considering when to leave the workforce, individuals quite likely focus not only on the advantages of retiring, but also on the disadvantages of continuing to work. An overemphasis on negative aspects of working longer might lead prospective retirees to convince themselves that they could not endure even 1 more year on the job. What individuals fail to realize, however, is that humans possess a remarkable ability to adapt to negative situations. As a result of what can be thought of as a *psychological immune system* (Gilbert and others 1998; Wilson and Gilbert 2003), humans are able to recover relatively quickly from events that threaten their happiness.

Importantly, individuals exhibit *immune neglect* (Gilbert and others 1998; Wilson and Gilbert 2003), which means that they do not appreciate the ability of their psychological immune systems to help them recuperate from negative events, nor do they appreciate that ability in others. Immune neglect becomes evident when friends are shocked to find that a recently divorced peer has started dating so quickly after the split. Often others look upon such behavior as insensitive or callous, but to the individual experiencing the situation, such actions are simply a result of the psychological immune system. The psychological immune system, and more importantly, immune neglect, are crucial aspects of the decision-making process. For example, an unhappy spouse may remain in a loveless marriage because he or she cannot imagine being able to recover after a divorce. Similarly, a potential retiree may leave the workforce earlier than necessary because he or she cannot imagine being able to get through each day feeling underappreciated. In either case, immune neglect impacts decision making because an individual may engage (or fail to engage) in a particular behavior for fear that the repercussions will be not only extremely negative, but exaggeratedly prolonged as well.

Once an individual turns age 62, receiving Social Security retirement benefits becomes an option that was not available before reaching that age.<sup>16</sup> Not only does this provide a temptation of sorts (that is,

receiving an income without having to work), but it also provides a “way out” of the workforce that did not exist prior to that point. A 60-year-old worker may think it unwise to leave an unpleasant job, as there is no guarantee of finding another job, and therefore no guarantee of an income. A 62-year-old worker, on the other hand, can leave an unpleasant job and still receive an income from Social Security.<sup>17</sup> Having little choice in the matter, the 60-year-old worker is more likely to try to adapt to a negative work situation than is the 62-year-old worker. Previous research suggests that the psychological immune system becomes activated only when there is no other *way out* (Wilson and Gilbert 2003). Furthermore, having the option to revoke one’s decision (for example, to reverse the decision to continue working and instead retire at any point after reaching age 62), impedes the psychological immune system from restoring one’s well-being. In a study exploring the effects of “keeping one’s options open” on subsequent happiness, Gilbert and Ebert (2002) found that participants who were given a month to swap a poster they had chosen were less happy with their choices than were participants who were not given the option to switch their posters. Participants who were not given the option of changing their minds “made the best” (Wilson and Gilbert 2003, 387) of the choice they made, whereas those who had the option to change their minds were less satisfied with their choice. A similar effect could occur for individuals who continue working after age 62. For those workers, the option to stop working may hinder the psychological immune system from “making the best” of the situation, effectively confirming the workers’ prediction that working longer would be highly unfavorable.<sup>18</sup>

### ***Predicting Future Behavior and Future Events***

I presented research in the previous section that dealt with individuals’ propensity to inaccurately predict their future happiness. In addition to making erroneous predictions of happiness, individuals tend to be poor prognosticators of their future behavior as well. A recent report from EBRI (2009) highlights the discrepancy between *expected* and *actual* retirement behavior. For example, EBRI found that 28 percent of workers in the 2009 Retirement Confidence Survey (RCS) changed their expected retirement age within the past year (89 percent of those respondents said their expected retirement age increased); the median reported age of expected retirement was 65. Despite

those lofty expectations, the median retirement age was actually 62, with 47 percent of respondents indicating that they retired sooner than they had planned. Additionally, about two-thirds of future retirees in the 2009 RCS expected to work for pay in retirement, while only about one-third of those who were actually retired reported working for pay.

Adding to the fact that individuals do not accurately predict their retirement behavior is the finding that future retirees do not consider the retirement decision for very long before deciding to retire. A 2008 report from EBRI (Helman and others 2008) shows that 22 percent of survey respondents indicated that they first began to think about the retirement decision a mere 6 months before they actually left their jobs. Another 22 percent spent only a year contemplating the retirement decision. These findings are somewhat disconcerting when considering the importance of the retirement decision for future financial well-being.

### ***Hyperbolic Discounting***

Although there is no *correct* amount of time that individuals should ponder the retirement decision, research in JDM and behavioral economics suggests that the amount of time individuals spend contemplating when to retire may actually affect the decision itself. This is because people tend to be *hyperbolic discounters*, meaning that they tend to overweight the value of rewards they can receive right away. Unlike more traditional models of discounting, which assume that individuals discount the future at a constant rate (Fishburn and Rubenstein 1982), hyperbolic discounting allows for impulsivity in the present (Kirby and Herrnstein 1995). EBRI’s (2008) finding that just under half of retiree respondents spent less than a year considering the retirement decision indicates that individuals may be making this decision somewhat impulsively. Interestingly, that report also indicated that those who were “not at all satisfied” with their jobs were especially likely to have reported having only thought about the retirement decision for 6 months. After working for 30 years, for example, the prospect of leaving the workforce within a year is likely to be extremely tempting—especially if one’s job is not satisfying.

Hyperbolic discounting helps to describe individuals’ behavior in a variety of decision contexts in which a larger, later reward is pitted against a smaller, sooner reward. Research typically shows that when the opportunity to receive a reward (for example, money, a prize, improved health) is relatively far in

the future, people state their intentions to choose a larger, later reward (for example, weight loss) over a smaller, sooner reward (for example, a gooey brownie). However, as the reward opportunity moves closer to the present, individuals' preferences tend to reverse so that they prefer the smaller, sooner reward (Kirby and Herrnstein 1995). Hyperbolic discounting helps explain why it is often difficult for people to choose alternatives that foster long-term goals rather than opt for alternatives that simply satisfy in the short term. It seems possible that hyperbolic discounting can help to explain individuals' retirement preferences. When retirement is far in the future, workers may intend to retire later; but, as the time to retire approaches and the opportunity to stop working and obtain benefits immediately overwhelms the prospect of long-term financial well-being, those workers may end up opting to retire sooner. Indeed, 38 percent of respondents in an EBRI (2006) survey reported retiring earlier than planned, while only 5 percent reported retiring later than planned.

Bidewell, Griffin, and Hesketh (2006) found evidence supporting the notion that the closer individuals are to their preferred retirement age, the more future income they are willing to sacrifice in order to retire sooner. In other words, they become more impulsive as they approach retirement. The authors asked experiment participants to identify their preferred retirement age and subjected the participants to a "bargaining" task to determine the minimum benefit amount each participant would accept to retire early. Results showed that individual differences in discounting explained a significant amount of variability in participants' preferred retirement ages. Furthermore, consistent with hyperbolic discounting, participants with less time before their preferred retirement age were willing to sacrifice more future money to retire early. Additional results from that study (2006) demonstrated experimentally a potential problem with the way future retirees tend to consider retirement age: If individuals only consider the retirement decision shortly before they retire, they are quite likely to fall prey to impulsivity and sacrifice future financial well-being for immediate relief.

If individuals do, in fact, become more impulsive as retirement draws near, one obvious remedy to future retirees' potentially impulsive behavior is to urge them to start thinking about the retirement decision earlier. When retirement is sufficiently far in the future, individuals may be able to focus on critical aspects of the retirement decision without the influence of

impulsivity. This is the crux of precommitment strategies so often used in situations requiring self-control. Dieters may purchase annual gym memberships, for example, as a way to obligate themselves to a year's worth of exercise. Although it is unrealistic to force individuals to precommit to a specific retirement age, the previous discussion about reference points suggests that simply having a retirement age in mind may affect retirement behavior. As hyperbolic discounting suggests, the farther in the future the retirement decision is when one begins to have a retirement age in mind, the more likely it is that this age will be older rather than younger.

SSA has attempted to address the issue of future retirees considering the retirement decision insufficiently far in the future. Specifically, the "Thinking of Retiring" insert described earlier contains, among other things, information on program rules regarding early and delayed retirement and working while receiving benefits. Receiving this insert each year for 7 years before the EEA may urge individuals to think more clearly about the most important aspects of retirement (for example, having enough money to live comfortably in one's older years), without allowing the fleeting excitement of retirement to cloud their judgment. Furthermore, as mentioned earlier, thinking about retirement for a relatively long period of time before it occurs may encourage individuals to envision a later retirement age, which could serve as an anchor in future considerations of retirement.

### ***The Planning Fallacy***

If individuals are indeed hyperbolic discounters and forfeit larger future benefits in the interest of instant gratification, retirees may find themselves without adequate money in their older years. Numerous reasons for such behavior have been delineated earlier, including prediction errors of both future happiness and future behavior. One more prediction error may prove important in explaining potential retirees' myopic retirement decisions: the miscalculation of future events. Previous research on the *planning fallacy* (Buehler, Griffin, and Ross 1994) indicates that individuals often underestimate how long it will take them to complete projects, even if the time frame of similar projects has proven unrealistic in the past. Underestimates of project completion times have been shown to result from the mental construction of unrealistic scenarios people generate to foresee how a project will unfold. Those mentally constructed scenarios are often optimistic, "best-case" scenarios

(Newby-Clark and others 2000), which fail to include any unexpected problems that may arise during the project. Even when individuals are induced to consider the unexpected events that could potentially occur, they tend to disregard those possibilities as unlikely to happen to *them*.

While the planning fallacy traditionally has been studied in the context of task-completion times, it seems likely that it would generalize to the financial domain<sup>19</sup> and to the finances involved in the retirement decision in particular. In deciding when to retire, it is crucial that individuals understand the implications of having lower monthly benefits in their older years and essential for them to consider what unforeseen costs could potentially arise during retirement. It seems likely that, similar to what occurs with the traditional planning fallacy, individuals only envision the “best-case scenario” for retirement, where no major account-draining events take place (for example, an illness, a child’s wedding, the need for long-term care, and so forth). If future retirees do not consider what costly events could take place in retirement, they may be more likely to decide that accepting reduced benefits in order to retire early is a sound idea.

Simply asking individuals to think about everything that could go wrong has not proven effective in debiasing the planning fallacy (see for example, Byram (1997); Newby-Clark and others (2000); Sanna and Schwarz (2004)); while people can identify possible setbacks, they nevertheless dismiss those potential catastrophes as being unlikely to happen to them. Often referred to as *optimistic bias* (Armor and Taylor 2002; Weinstein 1980), individuals’ tendency to be overly optimistic about the outcome of future events can lead to poor choices, such as failing to engage in preventative health behaviors (Weinstein 1987). With regard to the retirement decision, undue optimism about what events are likely to take place in retirement may lead individuals to underestimate the importance of a larger monthly Social Security benefit.

Wilson and others (2000) suggested that urging individuals to think about events that are not “focal” to the event in question could help debias the planning fallacy. In the case of the retirement decision, retiring would be considered the focal event, and other events, such as the death of a spouse or the wedding of a child, would likely be nonfocal to the retirement decision. However, those nonfocal events are still important to consider when deciding when to retire because the retirement decision affects one’s finances in retirement, and such events could require large

amounts of money. As mentioned earlier, the planning fallacy is thought to result from individuals imagining *best-case scenarios* and failing to take into account unexpected events that could occur. Wilson and others (2000) argued that urging individuals to think about these nonfocal, unexpected events could help correct the planning fallacy.

Newby-Clark and others (2000), however, found that imagining a “worst-case scenario” has been an unsuccessful debiasing strategy for the planning fallacy. Instead, taking an *outside view* rather than an *inside view* (Kahneman and Tversky 1979a) when predicting one’s task-completion times has been shown to help individuals make more realistic predictions (Buehler, Griffin, and Ross 1994). An inside view refers to the evaluation of a situation or project by taking into account aspects that are unique to the specific project under consideration. By contrast, taking an outside view means that the person considers other, similar projects, without taking into account the specific features of the particular project under consideration. Adopting an outside view eliminates the aforementioned optimistic bias thought to underlie the planning fallacy because it precludes individuals from thinking about why a particular project is bound to work better than others have in the past. However, the retirement decision *is*, in fact, unique. There are no examples of other decisions that are similar to retiring that an individual can use to assume an outside view, although potential retirees may have been in the position to observe the retirement of other people (for example, their parents, friends, or coworkers). Indeed, Buehler, Griffin, and Ross (1994) demonstrated that observers tend to take an outside view when predicting others’ task-completion times. As such, future retirees may benefit from considering the experiences others have had in retirement and using these second-hand experiences as predictors of what events may occur in their own retirement.<sup>20</sup>

Along these lines, retirement advisors, and even SSA, may consider using testimonials or narratives, perhaps in the form of Web-based videos, from individuals who have already retired. Hearing what unexpected events others have encountered during retirement may urge prospective retirees to consider the possibility that similar events could happen during *their* own retirement. The use of testimonials and narratives could be one way to combat affective forecasting errors as well. Indeed, narratives have proven successful in the medical arena as a way to help individuals envision more realistically the impact of future

health-related procedures (Dillard and others 2010). In the case of the retirement decision, watching videos and hearing testimonials from individuals who have “made the best” of working longer may give potential retirees confidence that spending a few extra years in the workforce is a manageable undertaking. However, it should be noted that recent research exploring the use of narratives in medical decision making suggests that narratives sometimes may bias the decision process; that is, narratives may sway individuals to take one course of action over another, rather than simply provide individuals with more information to help them make better decisions (Winterbottom and others 2008). Therefore, providing individuals with testimonials of others whose postponement of retirement was generally positive (or at least not negative) could bias them toward delaying retirement, whether this is the best decision or not.

### ***Emotions and Informational Concerns***

Unlike traditional economic explanations of the retirement decision, research in JDM and behavioral economics points to the role emotions may play in the decision of when to retire. Thinking about one’s retirement is likely bittersweet. While future retirees may be excited about life without work and the leisure opportunities retirement affords, contemplating retirement can introduce negative emotions as well. For example, potential retirees may fear that they will be bored after they retire, that they will miss the mentally stimulating discussions in which they often partook at work, or that they will slowly become less engaged in society (Nuttman-Shwartz 2007). As mentioned in the previous section, it is also crucial that individuals try to anticipate what events may occur during retirement; but often such events, like an illness or the death of a loved one, can be distressing. Individuals may try to avoid entertaining the idea that a spouse will develop a terminal disease or that a tragic accident might occur because such thoughts are likely to produce negative emotions. However, it is precisely this type of contingency planning in which individuals must engage in order to make the best retirement decision for themselves and their families. Along those lines, not discussing the relationship between a spouse’s claiming age and what would happen if the spouse dies allows future retirees to avoid the negative emotions that could be associated with such a discussion. As such, many future retirees may never consider how their retirement age will affect their spouses’ and other survivors’ financial well-being after the retiree passes away.<sup>21</sup>

Previous research in the area of advance directive (that is, living will) completion suggests that individuals are willing to have discussions related to negative health events, especially once others, such as physicians, initiate those discussions (see for example, Gamble, McDonald, and Lichstein (1991); Johnston, Pfeifer, and McNutt (1995); Reilly and others (1994)). This research suggests that while discussing end-of-life scenarios may be emotionally painful, individuals recognize that plans must be arranged in the event a negative health state arises. Taken together, the tendency to want to avoid negative emotions, but the willingness to confront those emotions when encouraged to do so, suggests an opportunity for intervention. While prospective retirees may not take it upon themselves to consider future scenarios that could produce negative emotions, they are liable to be willing to consider such scenarios if prompted. As such, SSA, as well as financial advisers and retirement planners, is well-placed to provide information to future retirees about the effects of claiming age on the benefits their survivors will receive.

Some previous research has explicitly examined the effects of information on individuals’ claiming behavior. For example, research exploring the claiming behavior of married men (Sass, Sun, and Webb 2007) has demonstrated not only that married men tend to claim benefits at age 62 or 63, but that such claiming behavior is related to levels of education. Specifically, married men who have obtained a college education, which the authors suggested may be a proxy for greater financial awareness, tend to claim Social Security benefits later than those with less education. The authors argued that the relationship between education and the early claiming behavior of married men may indicate that an increase in financial awareness could lead to more optimal claiming behavior.<sup>22</sup> As such, they suggested that SSA should consider increasing awareness of the effects of early claiming on survivors’ benefits by specifically targeting this relationship. That is, in addition to presenting information about the increases and decreases in one’s own benefits as a result of claiming at different ages, the authors proposed that SSA’s informational inserts should explicitly include information about how survivors’ benefits would be affected by the claimant’s age.<sup>23</sup>

In addition, Sass, Sun, and Webb (2007) offered another suggestion for retirement policy based on their research: Perhaps spouses should be required to give consent for claims prior to the worker’s FRA, similar to the spousal consent required for individuals

to waive a Qualified Joint and Survivor Annuity or a Qualified Pre-Retirement Survivor Annuity in defined contribution retirement plans (Internal Revenue Service 1997). The authors also noted that requiring spousal consent would force a discussion about future financial well-being for all parties involved in the claiming decision. The added benefit of a consent requirement could therefore help to combat individuals' tendency to want to avoid potentially important, but emotionally taxing, conversations about the aforementioned unexpected, negative events that could occur in retirement.

## Conclusion

The question of when to retire is one laden with emotions, predictions, and ambiguous financial considerations. Leaving the workforce can be an exciting time in an individual's life, but the decision to do so does not come without consequences. Most notably, the decision to stop working is accompanied by the loss of a worker's preretirement income, leaving the retiree to garner funds from other sources. Some individuals have saved large sums of money by the time they retire, and others have workplace pensions from which to draw funds; some retirees have both sources of income, but some retirees have neither. Savings and pensions are but two legs of the *three-legged financial stool* on which individuals are expected to rely for income in retirement. For many Americans, those two legs are far too weak or are altogether nonexistent. The third leg of the stool, Social Security, therefore comprises the majority of retirement income for many retirees (NIA 2007).

Previous research has focused on the interplay between wealth and retirement behavior (see for example, Gustman and Steinmeier (2002)), as these matters are inextricably linked. Researchers have also acknowledged the impact of health-related concerns on retirement behavior (see for example, NIA (2007)). Throughout this article, I have identified a number of findings in the JDM and behavioral-economics literatures that can provide additional insight into what underlies individuals' retirement decisions. The JDM and behavioral-economics literatures not only shed light on some myopic retirement behaviors, but can also help to identify opportunities for improving individuals' retirement decisions. Much of the previous interaction between JDM research and the retirement literature has dealt with retirement savings (see for example, Madrian and Shea (2001); Thaler and Benartzi (2004); Knoll (2010)), but there are important implications of JDM findings for the

retirement decision as well (that is, *when* to retire). I have outlined many of these findings throughout this literature review, but there are numerous applications of behavioral-economics and JDM research to the retirement decision that remain to be explored.

## Notes

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<sup>1</sup> However, see Burtless (2006), Behaghel and Blau (2010), Fetherstonhaugh and Ross (1999), and Loewenstein, Prelec, and Weber (1999) for discussions of behavioral dimensions of retirement.

<sup>2</sup> Higher SES individuals often work in less physically demanding jobs (Li, Hurd, and Loughran 2008) and may therefore have the ability to remain in the workforce longer. In addition, work stress and a lack of personal control on the job are more common among lower SES individuals (Christie and Barling 2009), and those factors can contribute to health problems over time.

<sup>3</sup> Life expectancies were calculated for individuals turning age 62 in April of 2011 (that is, born in April 1959) using the Social Security Administration's (SSA's) Life Expectancy Calculator, <http://www.socialsecurity.gov/OACT/population/longevity.html>.

<sup>4</sup> This argument is primarily founded on the specific rules defined by the Social Security law for determining retirees' monthly benefits at different ages and the fact that delayed claiming, in effect, purchases a form of longevity insurance. The adjustments to Social Security for delayed claiming of retirement benefits do not reduce the lifetime present value of benefits, and delayed claiming provides protection against low levels of consumption late in life, should other retirement resources be exhausted. This protective feature of delayed claiming has been found to be important in traditional economic models.

<sup>5</sup> See Dushi and Iams (2008) for a discussion of factors contributing to the decrease in defined benefit plans and how the shift may affect income security in retirement.

<sup>6</sup> If their employers allow it, individuals may also consider leaving their full-time status in the workforce, while continuing to retain part-time employment. This type of "phasing out" of the workforce has become increasingly popular in recent years (Chen and Scott 2006) and may allow individuals to delay claiming Social Security benefits while reducing, but not fully eliminating, labor force participation.

<sup>7</sup> An additional motivation for individuals to delay benefit claiming is the retirement earnings test (RET), if they are working between age 62 and their FRA. The RET requires that \$1 in benefits be withheld for every \$2 a beneficiary earns over the annual earnings limit. For an

in-depth explanation of the RET, see <http://www.socialsecurity.gov/OACT/COLA/rtea.html>.

<sup>8</sup> Prolonging labor force participation can increase an individual's monthly Social Security benefit in several ways. For example, an individual's monthly benefit is higher the longer he or she delays claiming benefits because of the specific rules defined by SSA for determining retirees' monthly benefits at different ages (see note 4). Further, an individual who works is less likely to collect Social Security benefits than an individual who has stopped working (Gustman and Steinmeier 2002). In addition, because one's Social Security benefit is based on his or her 35 highest-earning years, the additional years of work, which may include high-earning years, could increase the benefit amount. For additional reasons how prolonged workforce participation can improve retirement security, see Munnell and others (2006).

<sup>9</sup> While Bidewell, Griffin, and Hesketh (2006) and Beehr and others (2000) found that being tired of work was the strongest predictor of preferred retirement age, results from the 2007 Health and Retirement Study (HRS) showed that only about 10 percent of respondents indicated that not liking work was a "very important" motivator in their decision to retire. The discrepancy in those findings may be attributed to self-presentational concerns (see for example, Baumeister 1982) regarding appropriate reasons for retirement; such concerns may have existed in the HRS, but not in the other two studies. In the Bidewell, Griffin, and Hesketh (2006) study, for example, individuals were not asked why they did retire (they were still working when they participated in the study). Instead, participants were asked to report their preferred retirement age and separately answered a question regarding whether or not they were tired of work. It seems likely that individuals would not feel ashamed to admit that they are tired of working, but they may not want to admit that they actually retired because they were tired of working. This latter admission may be more socially unacceptable than the former.

<sup>10</sup> Pursuant to the 1983 Social Security Amendments, the FRA has increased based on birth cohort. See SSA's website for the FRA specific to each birth cohort, <http://www.socialsecurity.gov/retire2/retirechart.htm>.

<sup>11</sup> The actual additional amount a particular individual would receive in monthly benefits is a function of past earnings, date of retirement, and the Social Security benefit formula. For an explanation of how benefits are calculated, refer to SSA's website, <http://www.socialsecurity.gov/OACT/COLA/Benefits.html>.

<sup>12</sup> See also Behagel and Blau (2010) for a natural experiment.

<sup>13</sup> Claims representatives continue to calculate the break-even age if a claimant asks for a break-even calculation. For the entire Program Operations Manual System (POMS) description for explaining month of election options, see <https://secure.ssa.gov/apps10/poms.nsf/lnx/0200204039>.

<sup>14</sup> Only individuals in this age group who were not currently receiving Social Security benefits got this insert with their Social Security Statements. However, the annual statements have been suspended temporarily to conserve funds.

<sup>15</sup> Of course, as all of the ages and corresponding benefit amounts are displayed at once, individuals can read the graph however they choose.

<sup>16</sup> Widows are eligible to receive survivor benefits at age 60 based on the earnings record of a deceased spouse. For more information on survivor benefits, see <http://www.socialsecurity.gov/pubs/10084.pdf>.

<sup>17</sup> An individual must have worked in a job covered by Social Security for at least 10 years (40 quarters) to be eligible for reduced retirement benefits at age 62. For more information on Social Security retirement benefits, see <http://www.socialsecurity.gov/pubs/10035.pdf>.

<sup>18</sup> While this hypothesis has not been tested in the retirement domain, the fact that over 95 percent of individuals claim retirement benefits at or before their FRA (Song and Manchester 2007) may support the notion that it is psychologically difficult for individuals to remain in the workforce when there is a way out.

<sup>19</sup> See Peetz and Buehler (2009) for an example of the budget fallacy.

<sup>20</sup> Of course, such a strategy still does not prevent prospective retirees from optimistically believing that the unforeseen events that others have faced will not occur to them as well. Furthermore, potential retirees are likely only privy to the retirement experiences of those close to them. Therefore, future retirees who take an observer's perspective may actually have more inside information than the observers in Buehler, Griffin, and Ross' (1994) study. In that sense, prospective retirees may still take an inside view when thinking about the unexpected events that may occur during retirement.

<sup>21</sup> For information on the relationship of survivor benefits to retired-worker benefits, see <http://www.socialsecurity.gov/pubs/10084.html> and <http://www.socialsecurity.gov/policy/docs/ssb/v70n3/v70n3p89.html>.

<sup>22</sup> It is possible that there is a third factor driving the relationship between higher education and delayed claiming, namely SES. That is, those who have attained higher levels of education are likely to enjoy a higher SES, thereby making them more likely to be able to afford delaying claiming of Social Security benefits.

<sup>23</sup> Since the publication of Sass, Sun, and Web's (2007) paper, SSA began sending out "Thinking of Retiring"—a special insert that accompanied annual Social Security Statements to individuals aged 55 or older who were not yet receiving benefits (SSA 2009b). This insert does contain a brief explanation of "Rules that may affect your survivor." However, the annual statements have been suspended temporarily to conserve funds.

## References

- Armor, David A., and Shelley E. Taylor. 2002. "When Predictions Fail: The Dilemma of Unrealistic Optimism." In *Heuristics and Biases: The Psychology of Intuitive Thought*, edited by Thomas Gilovich, Dale Griffin, and Daniel Kahneman, 334–347. New York: Cambridge University Press.
- Baumeister, Roy F. 1982. "A Self-Presentational View of Social Phenomena." *Psychological Bulletin* 91(1): 3–26.
- Beehr, Terry A., Sharon Glazer, Norma L. Nielson, and Suzanne J. Farmer. 2000. "Work and Nonwork Predictors of Employees' Retirement Ages." *Journal of Vocational Behavior* 57(2): 206–225.
- Behaghel, Luc, and David M. Blau. 2010. "Framing Social Security Reform: Behavioral Responses to Changes in the Full Retirement Age." IZA Discussion Paper No. 5310. <http://ssrn.com/abstract=1708756>.
- Benítez-Silva, H., Berna Demiralp, and Zhen Liu. 2009. "Social Security Literacy and Retirement Well-Being." Working Paper No. WP 2009-210. Ann Arbor, MI: University of Michigan Retirement Research Center. <http://www.mrrc.isr.umich.edu/publications/papers/pdf/wp210.pdf>.
- Bidewell, John, Barbara Griffin, and Beryl Hesketh. 2006. "Timing of Retirement: Including a Delay Discounting Perspective in Retirement Models." *Journal of Vocational Behavior* 68(2): 368–387.
- Brown, Charles. 2006. "The Role of Conventional Retirement Age in Retirement Decisions." Working Paper No. WP 2006-120. Ann Arbor, MI: University of Michigan Retirement Research Center. <http://www.mrrc.isr.umich.edu/publications/Papers/pdf/wp120.pdf>.
- Brown, Jeffrey R., Arie Kapteyn, and Olivia S. Mitchell. 2010. "Framing Effects and Expected Social Security Claiming Behavior." Paper presented at the Financial Literacy Research Consortium: Annual Conference, 2010, Washington, DC (November 19). <http://www.financialliteracyfocus.org/files/clpre/a12-3.pdf>.
- Buehler, Roger, Dale Griffin, and Michael Ross. 1994. "Exploring the 'Planning Fallacy': Why People Underestimate Their Task Completion Times." *Journal of Personality and Social Psychology* 67(3): 366–381.
- Buessing, Marric, and Mauricio Soto. 2006. "The State of Private Pensions: Current 5500 Data." An Issue in Brief No. 42. Boston, MA: Center for Retirement Research at Boston College.
- Burtless, Gary. 2006. "Social Norms, Rules of Thumb, and Retirement: Evidence for Rationality in Retirement Planning." In *Social Structures, Aging, and Self-Regulation in the Elderly*, edited by K. Warner Schaie, and Laura Carstensen, 123–160. New York: Springer Publishing Company.
- Byram, Stephanie J. 1997. "Cognitive and Motivational Factors Influencing Time Prediction." *Journal of Experimental Psychology: Applied* 3(3): 216–239.
- Chen, Yung-Ping, and John C. Scott. 2006. *Phased Retirement: Who Opt's for It and Toward What End?* AARP Public Policy Institute Report. [http://assets.aarp.org/rgcenter/econ/2006\\_01\\_retire.pdf](http://assets.aarp.org/rgcenter/econ/2006_01_retire.pdf).
- Christie, Amy M., and Julian Barling. 2009. "Disentangling the Indirect Links Between Socioeconomic Status and Health: The Dynamic Roles of Work Stressors and Personal Control." *Journal of Applied Psychology* 94(6): 1466–1478.
- Coile, Courtney, Peter Diamond, Jonathan Gruber, and Alain Jouten. 2002. "Delays in Claiming Social Security Benefits." *Journal of Public Economics* 84(3): 357–385.
- Dillard, Amanda J., Angela Fagerlin, Sonya Dal Cin, Brian J. Zikmund-Fisher, and Peter A. Ubel. 2010. "Narratives that Address Affective Forecasting Errors Reduce Perceived Barriers to Colorectal Cancer Screening." *Social Science & Medicine* 71(1): 45–52.
- Dushi, Irena, and Howard M. Iams. 2008. "Cohort Differences in Wealth and Pension Participation of Near-Retirees." *Social Security Bulletin* 68(3): 45–66.
- [EBRI] Employee Benefit Research Institute. 2006. "How Many Retire Earlier than Planned? Why?" Fast Facts from EBRI No. 21. <http://www.ebri.org/pdf/publications/facts/fastfacts/fastfact21RetireAge18Apr06.pdf>.
- . 2007. *Attitudes about Social Security and Medicare*. 2007 Minority Retirement Confidence Survey Fact Sheet. [http://www.ebri.org/pdf/surveys/rcs/2007/RCS07\\_FS\\_3\\_SS-Med.pdf](http://www.ebri.org/pdf/surveys/rcs/2007/RCS07_FS_3_SS-Med.pdf).
- . 2008. "How Long do Workers Consider Retirement Decision?" Fast Facts from EBRI No. 91. <http://www.ebri.org/pdf/fastfact07162008.pdf>.
- . 2009. "The 2009 Retirement Confidence Survey: Economy Drives Confidence to Record Lows; Many Looking to Work Longer." Issue Brief No. 328. [http://www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_4-2009\\_RCS2.pdf](http://www.ebri.org/pdf/briefspdf/EBRI_IB_4-2009_RCS2.pdf).
- Fetherstonhaugh, David, and Lee Ross. 1999. "Framing Effects and Income Flow Preferences in Decisions about Social Security." In *Behavioral Dimensions of Retirement Economics*, edited by Henry J. Aaron, 187–209. Washington DC: Brookings Institution Press and Russell Sage Foundation.
- Fishburn, Peter C., and Ariel Rubenstein. 1982. "Time Preference." *International Economic Review* 23(3): 677–694.
- Gamble, Elizabeth R., Penelope J. McDonald, and Peter R. Lichstein. 1991. "Knowledge, Attitudes, and Behavior of Elderly Persons Regarding Living Wills." *Archives of Internal Medicine* 151(2): 277–280.

- Gilbert, Daniel T., and Jane E. J. Ebert. 2002. "Decisions and Revisions: The Affective Forecasting of Changeable Outcomes." *Journal of Personality and Social Psychology* 82(4): 503–514.
- Gilbert, Daniel T., Elizabeth C. Pinel, Timothy D. Wilson, Stephen J. Blumberg, and Thalia P. Wheatley. 1998. "Immune Neglect: A Source of Durability Bias in Affective Forecasting." *Journal of Personality and Social Psychology* 75(3): 617–638.
- Gilbert, Daniel T., and Timothy D. Wilson. 2007. "Prospection: Experiencing the Future." *Science* 317(5843): 1351–1354.
- Gustman, Alan L., and Thomas L. Steinmeier. 2002. "Retirement and Wealth." *Social Security Bulletin* 64(2): 66–91.
- Helman, Ruth, Craig Copeland, Jack VanDerhei, and Dallas Salisbury. 2008. "EBRI 2008 Recent Retirees Survey: Report of Findings." EBRI Issue Brief No. 319. [http://www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_07-2008.pdf](http://www.ebri.org/pdf/briefspdf/EBRI_IB_07-2008.pdf).
- Hsee, Christopher K., and Reid Hastie. 2006. "Decision and Experience: Why Don't We Choose What Makes Us Happy?" *TRENDS in Cognitive Sciences* 10(1): 31–37.
- Internal Revenue Service. 1997. Bulletin No. 1997-2, Notice 97-10. <http://www.irs.gov/pub/irs-irbs/irb97-02.pdf>.
- Johnson, Eric J., Gerald Häubl, and Anat Keinan. 2007. "Aspects of Endowment: A Query Theory of Value Construction." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 33(3): 461–474.
- Johnston, Sarah Coate, Mark P. Pfeifer, and Robert McNutt. 1995. "The Discussion about Advance Directives: Patient and Physician Opinions Regarding When and How It Should be Conducted." *Archives of Internal Medicine* 155(10): 1025–1030.
- Kahneman, Daniel, and Amos Tversky. 1979a. "Intuitive Prediction: Biases and Corrective Procedures." *TIMS Studies in Management Science* 12, 313–327.
- . 1979b. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47(2): 263–292.
- Kahneman, Daniel, Peter P. Wakker, and Rakesh Sarin. 1997. "Back to Bentham: Explorations of Experienced Utility." *The Quarterly Journal of Economics* 112(2): 375–405.
- Kirby, Kris N., and Richard J. Herrnstein. 1995. "Preference Reversals Due to Myopic Discounting of Delayed Reward." *Psychological Science* 6(2): 83–89.
- Knoll, Melissa A. Z. 2010. "The Role of Behavioral Economics and Behavioral Decision Making in American's Retirement Savings Decisions." *Social Security Bulletin* 70(4): 1–23.
- Lee, Leonard, Shane Frederick, and Dan Ariely. 2006. "Try It, You'll Like It: The Influence of Expectation, Consumption, and Revelation on Preferences for Beer." *Psychological Science* 17(12): 1054–1058.
- Li, Xiaoyan, Michael Hurd, and David S. Loughran. 2008. *The Characteristics of Social Security Beneficiaries Who Claim Benefits at the Early Entitlement Age*. AARP Public Policy Institute Research Report No. 2008-19. Washington, DC: AARP.
- Liebman, Jeffrey B., and Erzo F. P. Luttmer. 2009. "The Perception of Social Security Incentives for Labor Supply and Retirement: The Median Voter Knows More than You'd Think." NBER Working Paper No. NB08-01. Cambridge, MA: National Bureau of Economic Research.
- Loewenstein, Gorge, Drazen Prelec, and Roberto Weber. 1999. "What, Me Worry? A Psychological Perspective on Economic Aspects of Retirement." In *Behavioral Dimensions of Retirement Economic*, edited by Henry Aaron, 215–246. Washington DC: Brookings Institution Press and Russell Sage Foundation.
- Lusardi, A. 1999. "Information, Expectations, and Savings for Retirement." In *Behavioral Dimensions of Retirement Economics*, edited by Henry Aaron, 81–115. Washington DC: Brookings Institution Press and Russell Sage Foundation.
- Madrian, Brigitte. C., and Dennis F. Shea. 2001. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior." *The Quarterly Journal of Economics* 116(4): 1149–1187.
- McGarry, Kathleen. 2002. "Health and Retirement: Do Changes in Health Affect Retirement Expectations?" NBER Working Paper No. 9317. Cambridge, MA: National Bureau of Economic Research.
- MetLife. 2010. "Social Security Decision Tool." <http://www.metlife.com/individual/financial-tools/social-security-tool/sscalc.swf>.
- Munnell, Alicia H., Marris Buessing, Mauricio Soto, and Steven A. Sass. 2006. "Will We Have to Work Forever?" An Issue in Brief (series 4). Boston, MA: Center for Retirement Research at Boston College. [http://crr.bc.edu/images/stories/Briefs/wob\\_4.pdf](http://crr.bc.edu/images/stories/Briefs/wob_4.pdf).
- Munnell, Alicia H., and Steven A. Sass. 2008. *Working Longer: The Solution to the Retirement Income Challenge*. Washington, DC: Brookings Institution Press.
- National Commission on Fiscal Responsibility and Reform. 2010. *The Moment of Truth*. <http://www.fiscalcommission.gov/news/moment-truth-report-national-commission-fiscal-responsibility-and-reform>.
- National Institute on Aging. 2007. *Growing Older in America: The Health & Retirement Study*. NIH Publication No. 07- 5757. [http://www.nia.nih.gov/NR/rdonlyres/D164FE6C-C6E0-4E78-B27F-7E8D8C0FFEE5/0/HRS\\_Text\\_WEB.pdf](http://www.nia.nih.gov/NR/rdonlyres/D164FE6C-C6E0-4E78-B27F-7E8D8C0FFEE5/0/HRS_Text_WEB.pdf).

- Newby-Clark, Ian R., Michael Ross, Roger Buehler, Derek J. Koehler, and Dale Griffin. 2000. "People Focus on Optimistic and Disregard Pessimistic Scenarios While Predicting Their Task Completion Times." *Journal of Experimental Psychology: Applied* 6(3): 171–182.
- NIA. See National Institute on Aging.
- Nuttman-Shwartz, Orit. 2007. "Is There Life Without Work?" *International Journal of Aging and Human Development* 64(2): 129–147.
- Petz, Johanna, and Roger Buehler. 2009. "Is There a Budget Fallacy? The Role of Savings Goals in the Prediction of Personal Spending." *Personality and Social Psychology Bulletin* 35(12): 1579–1591.
- Reilly, Brendan M., C. Richard Magnussen, James Ross, Jeffrey Ash, Louis Papa, and Michael Wagner. 1994. "Can We Talk? Inpatient Discussions about Advance Directives in a Community Hospital." *Archives of Internal Medicine* 154(20): 2299–2308.
- Rozin, Paul, and Edward B. Royzman. 2001. "Negativity Bias, Negativity Dominance, and Contagion." *Personality and Social Psychology Review* 5(4): 296–320.
- Sanna, Lawrence J., and Norbert Schwarz. 2004. "Integrating Temporal Biases: The Interplay of Focal Thoughts and Accessibility Experiences." *Psychological Science* 15(7): 474–481.
- Sass, Steven A., Wei Sun, and Anthony Webb. 2007. "Why Do Married Men Claim Social Security Benefits So Early? Ignorance or Caddishness?" CRR Working Paper No. 2007-17. Boston, MA: Center for Retirement Research at Boston College. [http://crr.bc.edu/working\\_papers/why\\_do\\_married\\_men\\_claim\\_social\\_security\\_benefits\\_so\\_early\\_ignorance\\_or\\_caddishness.html](http://crr.bc.edu/working_papers/why_do_married_men_claim_social_security_benefits_so_early_ignorance_or_caddishness.html).
- Social Security Administration. 2009a. *The Full Retirement Age is Increasing*. <http://www.socialsecurity.gov/pubs/ageincrease.htm>.
- . 2009b. *Thinking of Retiring?* Special insert that accompanies annual Social Security statements for older workers.
- . 2010. *Income of the Aged Chartbook, 2008*. [http://www.socialsecurity.gov/policy/docs/chartbooks/income\\_aged/2008/iac08.html](http://www.socialsecurity.gov/policy/docs/chartbooks/income_aged/2008/iac08.html).
- Song, Jae, and Joyce Manchester. 2007. "Have People Delayed Claiming Retirement Benefits? Responses to Changes in Social Security Rules." *Social Security Bulletin* 67(2): 1–23.
- Spiegelman, Rande. 2009. "Social Security: Making the Most of Your Benefits." Research & Strategies: Retirement Planning Article. San Francisco, CA: Charles Schwab.
- SSA. See Social Security Administration.
- Thaler, Richard H., and Shlomo Benartzi. 2004. "Save More Tomorrow: Using Behavioral Economics to Increase Employee Savings." *Journal of Political Economy* 112(1): S164–S187.
- Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.
- Tversky, Amos, and Daniel Kahneman. 1974. "Judgments under Uncertainty: Heuristics and Biases." *Science*, new series, 185(4157): 1124–1131.
- . 1981. "The Framing of Decisions and the Psychology of Choice." *Science*, new series, 211(4481): 453–458.
- Weber, Elke U., Eric J. Johnson, Kerry F. Milch, Hannah Chang, Jeffrey Brodsholl, and Daniel G. Goldstein. 2007. "Asymmetrical Discounting in Intertemporal Choice." *Psychological Science* 18(6): 516–523.
- Weinstein, Neil D. 1980. "Unrealistic Optimism about Future Life Events." *Journal of Personality and Social Psychology* 39(5): 806–820.
- . 1987. "Unrealistic Optimism about Susceptibility to Health Problems: Conclusions from a Community-Wide Sample." *Journal of Behavioral Medicine* 10(5): 481–500.
- Wilson, Timothy D., and Daniel T. Gilbert. 2003. "Affective Forecasting." In *Advances in Experimental Social Psychology*, edited by M. P. Zanna, 345–411, Vol. 35. San Diego, CA: Academic Press.
- Wilson, Timothy D., Thalia Wheatley, Jonathan M. Meyers, Daniel T. Gilbert, and Danny Axsom. 2000. "Focalism: A Source of Durability Bias in Affective Forecasting." *Journal of Personality and Social Psychology* 78(5): 821–836.
- Winterbottom, Anna, Hilary L. Bekker, Mark Conner, and Andrew Mooney. 2008. "Does Narrative Information Bias Individual's Decision Making? A Systematic Review." *Social Science & Medicine* 67(12): 2079–2088.