Exploring How Uncertainty in Longevity Estimates Predicts SSA Claiming Decisions

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As the population ages, more adults will be faced with the complex decision about when to claim Social Security Administration (SSA) benefits. Previous research on SSA claiming decisions found that self-reported subjective longevity is an important input in the decision to claim benefits early. While people might form beliefs about their life expectancies, the uncertainty around these expectations may vary greatly, a question unexamined by previous research. For example, two people might share the same expectation for longevity (e.g., 86 years), but one might see little chance of exceeding age 90 while the other sees a 40% chance of exceeding age 90. In the present paper, we first explore how heterogeneity in uncertainty around expectations predict differences in SSA claiming decisions. Secondly, we assess whether focusing on the "right" versus the "left" tails of uncertainty while holding constant the expectation differentially affects claiming decisions. Our results indicate that, first, while individuals are highly sensitive to longevity likelihood, they are not differentially sensitive to subjective probabilities of living to 65, 80, or 95. That is, they are sensitive to the center of the distribution, but not its tails. Second, calling attention to the link between claiming age and left- and right-tail risks causes individuals to adjust their claiming age intentions to minimize the salient risks.

Keywords: Social Security claiming, longevity, uncertainty

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With the average age in the American population increasing, more of its members are facing difficult decisions about their lives during retirement. People retiring in 2020 are facing an expected retirement period that is five years longer than those retiring in 1970 (Center for Retirement Research, 2013), and almost a third of households have no retirement savings (Pew Charitable Trusts, 2015). As falling mortality rates enhance the need to plan well for retirement (Kalemli-Ozcan & Weil, 2010; Lusardi & Mitchell, 2007), aging members of the population must decide when to retire, how much to save for retirement, how much to spend during retirement, and how much they wish to bequeath. They must also decide at what age to begin claiming Social Security benefits; this is an especially consequential retirement decision since 60% to 70% of the income individuals receive in retirement comes from this source (Social Security Administration 2016). These decisions require people to consider expectations about future needs and resources over the lifecycle (Diamond & Hausman, 1984) as well as subjectively evaluate their life expectancies (Khan, Rutledge, & Wu, 2014). Often people systematically fall short of their expectations (Munnell, Rutledge, & Webb, 2014; Munnell, Sanzenbacher, & Webb, 2015).

All decisions related to retirement involve uncertainty about future states of the world and one's own life. When making choices about retirement, people do not know exactly how long they will live or how healthy they will be, and health events that result in large medical expenses can significantly reduce end-of-life assets (Poterba, Venti, & Wise, 2015). Moreover, people face uncertainty about the returns on their assets, their costs of living, and their income benefits. Indeed, half of the U.S. working population doubt that they will receive Social Security benefits, and 43 percent of retirees believe their benefits will eventually be cut (Newport, 2015). Self-reported uncertainty about the future of Social Security, personal health status, and life expectations have all been found to be important inputs in the decision to claim benefits early (Shu & Payne, 2013). There is also evidence that individuals might spend too little during retirement, suggesting that uncertainty in one's life might change spending patterns (Davies, 1981). In other financial domains, preferences regarding ambiguity have been shown to predict household financial portfolio decisions (Dimmock, Kouwenberg, Mitchell, & Peijnenburg, 2016) and insurance preferences (Alary, Gollier, & Treich, 2013; Cabantous, 2007).

Individuals' subjective life expectancies are important determinants of long-term financial decision-making. Hamermesh (1985) found that when people were asked to assess their subjective life expectancies, their point estimates followed a distribution with greater variance than actuarial distributions suggested. Importantly, variance in these point estimates of life expectancies decreased as a function of age. This finding suggests that uncertainty about one's health earlier in life might cause people to have greater uncertainty around their expectations. Thus, uncertainty may play a role in not only expectations about the future, but also the variance in those expectations about the future. Payne, Sagara, Shu, Appelt, and Johnson (2013) found that how the life expectancy question is framed impacts life expectancies and resulting preference for life annuities: eliciting life expectancies in terms of what age one will "live to" results in subjective estimates nearly 10 years longer than eliciting them in terms of what age one will "die by." In unreported supplementary analyses, the subjective uncertainty of a given individual's life expectancy varies substantially across individuals. For example, the span between the 25th percentile and the 75th percentile ranged from narrower than 10 years for some individuals to wider than 20 years for others. The additional years, especially on the upper end, have substantial implications for longevity planning and the risk of outliving savings.

The role of subjective life expectations is especially important for the Social Security claiming decision. The decision of when to claim benefits, between the ages of 62 and 70, is one of the most important financial decisions that most Americans will ever make (Scott, 2012). Individuals whose expected longevity is average or better than average benefit by delaying claiming as late as possible to be able to enjoy the substantial increase in benefits that comes from delay; in fact, some analyses suggest that later claiming should generally be chosen by most retirees (Shoven & Slavov, 2012; Tacchino, Littell, & Scholbel, 2012). While financial constraints on retirees and heterogeneity in preferences can affect claiming decisions (Gustman & Steinmeier, 2012), as can the information received at the moment of claiming (Beeden, Chaidez, Chin, Glickman, & Marus, 2017), behavioral biases can also play an important role (Knoll, 2011). Interventions that have focused on gain versus loss framing, and/or anchoring at different ages, have been tested to see how claiming intentions may be changed, although results are often mixed (e.g., Brown, Kapteyn, & Mitchell, 2013; Liebman & Luttmer, 2012; Knoll, Appelt, Johnson, & Westfall, 2015). In the spirit of Knoll (2011), recent research has focused on some of the psychological aspects of the claiming decisions, finding that individual level measures of loss aversion, psychological ownership, and intertemporal patience are all significant predictors of intended claiming age (Shu & Payne, 2013; Shu, Payne, & Sagara, 2014). This work has also found that subjective life expectations, a major source of uncertainty for retirement, is a significant predictor of claiming age, with an extra ten years of subjective life expectation translating to a six-month delay in claiming (Shu & Payne, 2013).

Thus, the importance of mean expectations about uncertain outcomes for making retirement decisions is somewhat understood, but much less attention has been paid to how heterogeneity in the consumers' uncertainty around those expectations may also influence these choices. Previous research has found that self-reported uncertainty about longevity may be an important input in the decision to claim benefits early (Shu & Payne, 2013). While people might form beliefs about their longevities, they may be more or less inclined to account for uncertainty about these expectations when making claiming decisions. For example, two people might share the same expectation for longevity (e.g. 86 years), but one might see little chance of exceeding age 90 while the other sees a 40% chance of exceeding age 90.

In the current paper, we explore how heterogeneity in uncertainty around longevity expectations predicts differences in claiming decisions. In particular, we focus on understanding how considerations about the "right-tail uncertainty" (e.g., the relatively low likelihood of reaching relatively old age) versus the "left-tail uncertainty" (e.g., the relatively low likelihood of dying relatively young) of a distribution of subjective longevity may differentially affect claiming decisions. We hypothesize that focusing on right-tail uncertainty will tend to delay claiming, as people consider longevity risk and wish to insure against that risk. In contrast, we hypothesize that focusing on left-tail uncertainty will tend to expedite claiming, as people attempt to avoid missing out on earned benefits (Shu & Payne, 2013; Shu, Payne, & Sagara, 2014).

Research Overview

We address these questions in three studies. In our first study, we re-analyze six datasets collected by Shu and colleagues (Shu & Payne, 2013; Shu, Payne, & Sagara, 2014) to examine whether claiming age intentions differentially vary with different longevity likelihoods (subjective probabilities of living to 65, 75, 85, and 95). Our second and third studies consist of primary data from new experiments. In our second study, we test an experimental design in which we change the salience of different threshold ages to observe effects on claiming age intentions or on the relationships between different longevity likelihoods and claiming age intentions. In our third study, we test an experimental design in which we elicit recommendations for a third party (known to live for either an extended or brief time after retirement) to observe effects on claiming age intentions or on the relationships between different longevity likelihoods and claiming age intentions.

STUDY 1

In Study 1, we reexamine six datasets (hereafter 1A through 1F) previously collected by Shu and colleagues (Shu & Payne, 2013; Shu, Payne, & Sagara, 2014). Critically for our purposes, these datasets include measures of respondents' subjective probabilities of living to different thresholds: ages 65, 75, 85, and 95, resulting in four longevity likelihood measures for each individual, each on a 0 to 100 scale. The key dependent variable in these studies is claiming age intention (age 62 to age 70). The datasets also include additional relevant measures that can be used as covariates in our analysis. These are current age, gender (coded 0 = male, 1 = female), loss aversion, subjective estimate of the probability that Social Security benefits will still exist when the respondent retires, subjective feeling of psychological ownership of Social Security benefits (except for Study 1A), and intertemporal discount factor (except for Studies 1A and 1B).

Our primary interest in revisiting these datasets is to see whether differences in likelihood for the youngest and oldest ages (65 and 95) are differentially predictive of claiming intentions. In particular, these measures allow us to look directly at the "right-tail uncertainty" (the age 95 likelihood) versus the "left-tail uncertainty" (the age 65 likelihood) for each individual. This analysis has not been previously done for these datasets, since the original analytic approach focused only on an average life expectancy in years per individual.

Analytic Approach

We test the role of different longevity likelihoods in the formation of claiming age intentions. First, we calculate the approximate probability of making it to age 80, sometimes cited as a heuristic for a "breakeven" age for claiming Social Security where cumulative earnings from claiming early or claiming late are similar. The role of the breakeven age has been studied in prior claiming work, especially Brown, Kapteyn, and Mitchell (2013). We approximate this value per individual via interpolation by simply taking the midpoint between the subjective probability of living to age 75 and the subjective probability of living to age 85.

Our first model restricts the coefficients on left-tail longevity likelihood (subjective probability of living to age 65), breakeven longevity likelihood (subjective probability of living to age 80), and right-tail longevity likelihood (subjective probability of living to age 95) to be equal; this model does not include any additional controls. Our second model allows the coefficients on left-tail, breakeven, and right-tail longevity likelihoods to vary from one another.

The key question is whether the second model shows a significant improvement over the first, indicating that that the coefficients on longevity likelihoods for ages 65, 80, and 95 differentially relate to claiming decisions. Our third and fourth models are similar to the first two, but include all of the applicable controls listed above.

Two complications emerge from this dataset. First, because breakeven longevity likelihood (probability of living to age 80) was not measured directly but rather was calculated as the average of two different values (probability of living to age 75 and probability of living to age 85), it contains less measurement error than left-tail longevity likelihood or right-tail longevity likelihood. Moreover, when we average across these three values, we essentially give twice as much weight to the subjective probabilities of living to 65 and 95 than 75 or 85. To ensure these arbitrary analysis decisions were not driving our results, we repeated all analyses using a single average across all four measures (analogous to the first model) or allowing four different coefficients (analogous to the second model). All conclusions remained the same using that analytic approach, though we exclude details for brevity.

Second, rather than directly assessing the coefficient on probability of living to a particular age, one could calculate expected life expectancy for various percentiles by extrapolating from the measured values using a Weibull distribution, as was done in the original analyses (see Payne et al., 2013 for details on this method). Since our primary interest in this project was to explore right-tail and left-tail uncertainty, using the original data directly provided by survey participants is a cleaner measure of the subjective beliefs we are interested in than an estimated value that the Weibull function might provide. Initial analyses did not suggest meaningful reliable differences between analyses using such calculated variables and our approach using longevity likelihoods directly; we thus use the monotonically-related longevity likelihoods instead.

Results

Results for Studies 1A through 1F are given in Tables 1 through 6.[1] The results are generally consistent across independent datasets, each with more than 650 participants.[2] First, with or without controls, the average of longevity likelihood for ages 65, 80, and 95 is associated with later claiming age intentions. A 25% increase in average longevity likelihood is associated with a 6- to 12-month delay in claiming age intentions.

Second, and perhaps most importantly, this relationship does not significantly vary across type of longevity likelihood (left-tail, breakeven, or right-tail). In no case was there significant improvement at the 5% level allowing the coefficients to vary across type of longevity likelihood compared to constraining the three coefficients to be equal. When the coefficients are allowed to vary, the coefficient found to be most predictive was usually the likelihood associated with age 80, the breakeven age. However, since the likelihoods for ages 65 and 95 are often highly correlated with this value, it is difficult to argue that the other measures are not also highly predictive if used independently in the regression models (in fact, additional analyses suggest that they are).

[1] It is worth noting that the subjective life expectation probabilities reported in these datasets are highly consistent with findings from the HRS. For example, our online populations typically report an average subjective probability of being alive at age 75 of between 63% and 70%, while Elder (2007) reports an average subjective probability of being alive at age 75 of 65% among HRS respondents using a similar probability scale.

[2] Sample sizes do not exactly align with published analyses due to isolated missing data values and sample inclusion criteria.

Third, the covariates were highly predictive of claiming age intentions, but they did not substantively alter the coefficients on subjective probabilities. Older current age, higher loss aversion, and higher levels of psychological ownership were each associated with earlier claiming intentions, whereas a higher intertemporal discount factor was associated with delayed claiming intentions, consistent with prior findings using these datasets.

Discussion

Across six large samples, we observe that the relationship between claiming age intentions and respondents' subjective probabilities of living to particular threshold ages (65, 80, 95) does not depend on whether the threshold is in early (65), middle (80), or late (95) retirement. That is, a 10% increase in the subjective probability of living until age 65 is associated with essentially the same increase in claiming age intention as a 10% increase in the subjective probability of living until age 80 or a 10% increase in the subjective probability of living until age 95. Thus, it seems that any heterogeneity in longevity uncertainty that is inherent to these subjective probabilities provided by participants is not affecting claiming intentions.

One role that Social Security and private annuities play for retirees is effectively insurance against the risk of outliving one's wealth (longevity risk). From this standpoint, one would expect that retirees should be more sensitive to the likelihood of living considerably past retirement (e.g., right-tail longevity, and specifically in our data the likelihood of living to age 95) rather than earlier in retirement (e.g., left-tail longevity, and specifically in our data likelihood at age 65). Two primary reasons for this are that other retirement savings are less likely to be sufficient for age 95 than age 65, and that the cumulative earnings captured by delaying claiming will be greater at age 95 than at age 65. If respondents were truly more sensitive to such right-tail longevity likelihoods, we would expect to see a robust pattern such that the coefficient on the subjective probability of living to age 95 would be larger than the coefficient on the subjective probability of living to age 65 or 80. Yet across six well-powered studies, we do not observe that difference. In this respect, this is a surprising and important null result. It may reflect either that individuals are not using the likelihood estimates with enough accuracy to capture real differences in uncertainty between individuals, or that they are not taking those differences into account when making the claiming decision. In the next two studies, we dive deeper into these two possible explanations via manipulations in the collection of the likelihoods (Study 2) or manipulations of attention to benefits at younger and older ages (Study 3).

STUDY 2

In our second study, rather than just measure differential sensitivity to left-tail vs. right-tail longevity likelihood, we sought to experimentally manipulate salience of different longevity thresholds using a manipulation that collects the subjective life expectation probabilities in different orders. This allowed us to test whether changing the salience of different longevity thresholds changes the relationship between the subjective probability of living to different threshold ages and social security claiming age intentions.

Method

Participants (N = 780, recruited from a national sample online, restricted to be between the ages of 40 and 61 and roughly regionally representative) were randomly assigned to one of three conditions: *left-tail longevity salient*, *breakeven longevity salient*, or *right-tail longevity salient*. In all three conditions, participants reported their subjective probabilities of living to ages 65, 80, and 95. In the left-tail longevity salient condition, participants first reported their subjective probability of living to age 65. Then on a second screen, they subsequently reported their subjective probabilities of living to ages 80 and 95. In the breakeven longevity salient condition, participants first reported their subjective probability of living to age 80. Then on a second screen, they subsequently reported their subjective probabilities of living to ages 65 and 95. In the right-tail longevity salient condition, participants first reported their subjectivity probability of living to age 95. Then on a second screen, they subsequently reported their subjective probabilities of living to ages 65 and 80. Thus, the salience of the first longevity likelihood was enhanced, so by experimentally manipulating which age appeared first, salience was experimentally varied across conditions. Afterward, participants reported claiming age intentions. As part of the survey, participants also completed a variety of other measures including current age, gender, loss aversion, feelings of psychological ownership for social security benefits, discount rate, and a subjective probability judgment that Social Security benefits will exist when they retire.

Results

First, we repeat our analytic approach from Studies 1A through 1F as shown in Table 7. As would be expected, there is a significant association between average subjective longevity threshold probabilities and claiming age intentions (b = 0.048, $p < .01$). Inconsistent with our prior analyses, we found that claiming age intentions were differentially sensitive to the probabilities of living to different age thresholds, as indicated by the fact that allowing different coefficients on different longevity likelihoods significantly improved model fit (comparison of Model 1 with Model 2: $F(2,776) = 4.393$, $p = .013$). However, inspection revealed this was due to a larger coefficient on the breakeven probability (age 80), not on right-tail probability (age 95). So although this analysis provided evidence to reject the hypothesis that respondents were equally sensitive to longevity likelihoods for different age thresholds, there was no evidence to suggest that they were more sensitive to later longevity likelihoods (e.g., age 95) than earlier longevity likelihoods (e.g., age 65). Instead, the highest sensitivity appears to be for the breakeven age likelihood (age 80).

Second and more central to this study, we examine the effect of the manipulation on subjective longevity likelihoods. For interpretability, we consider two metrics: average longevity likelihood (averaged across responses for ages 65, 80, and 95) and difference in longevity likelihood (subjective probability for age 65 minus subjective probability for age 95). These results are shown in Table 8. As might be expected, the left-tail salient condition significantly decreased average probability estimates relative to the breakeven condition (b = -6.0, $p < .01$), whereas the right-tail salient condition marginally increased average probability estimates relative to the breakeven condition (b = 2.91, $p < .10$). The left-tail and breakeven conditions did not significantly differ regarding difference in subjective probability of living to age 65 versus age 95 (b = -0.08, *n.s.*), whereas the right-tail condition significantly decreased that difference (b = -17.87, $p < .01$). Put differently, average longevity likelihood increased as extreme ages (95) were made more salient and decreased as moderate ages (65) were made more salient, and the steepness of the dropoff in longevity likelihood decreased as extreme ages (95) were made more salient. Together, this suggests that the context in which longevity likelihoods are elicited matters, a point we will return to in the discussion below.

Third and most importantly, we test the effect of the salience manipulation on claiming age intentions. As shown in Table 9, with or without controls, the manipulations had no effect on claiming age intentions. Thus, although the manipulations affected subjective longevity likelihoods (levels and dropoff rates, per Table 8), and greater subjective longevity likelihoods were associated with delayed claiming age intentions (per Table 7), the salience manipulations had no effect on claiming age intentions.

Finally, we test whether allowing the coefficients on different longevity likelihoods to vary by condition improves fit. In other words, we test whether changing the salience of different threshold ages affects *sensitivity* to different longevity likelihoods. These results were mixed, but not consistent with a straightforward salience story; given the number of coefficients and unclear interpretation, we do not include a full results table. Excluding covariates, allowing the coefficients to vary by condition improved fit ($F(6, 768) = 2.45$, $p = .024$): the coefficient on likelihood of living to age 65 was greater when age 80 was salient than otherwise. Adding the interactions did not improve fit when the model included other covariates ($F(6, 711) = 1.49$, $p = .178$). Given its unclear interpretation and lack of robustness to alternative specifications, we are hesitant to draw strong conclusions from this difference.

Discussion

In Study 2, we tested whether manipulating the salience of different age thresholds, by changing the order in which survey participants entered their likelihood estimates, would change the overall average probability, the sensitivity to particular probabilities (e.g., sensitivity to right-tail uncertainty), and the intentions for claiming age. We do find that manipulations of salience affect overall average probability, with stronger left-tail salience leading to lower average probabilities and stronger right-tail salience leading to higher average probabilities. The right-tail salience manipulation also leads to a steeper dropoff in likelihoods for ages 95 to 65. These results add greater support to the idea that the context in which subjective life expectations are collected can affect individuals' judgments about their own mortality. While Payne and colleagues (2013) manipulated the framing of the life expectation question by asking about "live to" probabilities versus "die by" probabilities, the current study simply reorders the questions. Whether this is an anchoring effect (i.e., the likelihood for the first age encountered anchors later responses) or an order-based priming effect (i.e., changing the types of thoughts solicited while making the estimates) is an open issue that deserves further study.

While the age salience manipulations did affect subjective life expectation probabilities, they did not affect differential sensitivity to the right-tail or left-tail uncertainty that comes with those estimates. They also did not affect our main dependent variable of intended claiming age. We do find that the likelihood most important for the claiming decisions appears to be the probability estimate for age 80, which we defined as an approximate breakeven age. Prior research on how information interventions can affect claiming intentions has also found that salience of a breakeven age can significantly affect intentions, often by moving claiming significantly earlier (Brown, Kapteyn, & Mitchell, 2013; Liebman & Luttmer, 2012). While we do not find that having the age 80 life expectation likelihood more salient changes claiming relative to the other ages, our results do support that it is an important input to the claiming decision.

STUDY 3

In Study 3, we examine a different experimental manipulation to change the weight placed on left-tail or right-tail longevity likelihoods. In particular, we ask participants to explicitly reflect upon the implication of longevity for the preferred sequence of benefits from Social Security (e.g., a sequence of smaller benefits that starts earlier vs. a sequence of larger benefits that starts later) and ask them to generate an example of someone they knew who died either early in retirement or late in retirement. This allows us to assess whether the intervention shifted participants' intended claiming ages, as well as whether it shifted how sensitive participants were to earlier vs. later longevity likelihoods. It also allows us to test a possibility that the lack of sensitivity to earlier vs. later likelihoods on claiming in the earlier two studies is not due so much to differences in uncertainty between individuals as it is to a lack of attention to the implications of those likelihoods for claiming decisions. By having participants explicitly think about the connection between longevity and benefits, we hope to find a stronger connection between the measures.

Method

Study 3 was similar to Study 2, with the exception of the manipulation. Participants (N = 1,046) were recruited from a national sample using the same criteria as in Study 2. Study 3 used a 2 (left-tail salient: yes, no) x 2 (right-tail salient: yes, no) experimental design. In the left-tail salient conditions, participants reflected on individuals who died relatively early in retirement, prior to claiming Social Security benefits, and made a recommendation for when such an individual should claim (if they knew that individual would die relatively early in retirement). They then reported the name of someone they knew who died relatively early in retirement to make this abstract situation more concrete.

In the right-tail salient conditions, participants reflected on individuals who died relatively late in retirement who claimed relatively early, and made a recommendation for when such an individual should claim (if they knew that individual would live long into retirement). They then reported the name of someone they knew who died relatively long into retirement to make this abstract situation more concrete. Note that unlike study 2, left- and right-tail salience were fully crossed, resulting in 4 conditions (rather than the 3 conditions used in study 2). When both right-tail longevity and left-tail longevity were salient, order of which one respondents considered first was counterbalanced. Claiming age intentions and additional covariates were measured as in Study 2. The experimental manipulation is given in the Appendix.

Results

As in Study 2, we begin by repeating our analyses from Studies 1A through 1F. These results are shown in Table 10. Once again, we find a significant association between average subjective longevity threshold probabilities and claiming age intentions (b = 0.03, $p < .01$). As we found in most of our analyses, there was no evidence that this relationship significantly varied when the different likelihoods are separately included in the model (i.e., no improvement in model fit), so once again we do not find that individuals are differentially sensitive to early vs. late longevity likelihoods. The likelihood with the strongest effect on intended claiming age is again the breakeven age likelihood (age 80).

Second, we examine effects of the manipulation on subjective longevity likelihood. Again as in Study 2, we consider both average longevity likelihood (the average of the likelihoods for ages 65, 80, and 95) and how steep the dropoff in subjective likelihood is from living to age 65 to living to age 95. We include two dummy variables, one for the left-tail condition (1 = left-tail salient, 0 = not) and one for the right-tail condition (1 = right-tail salient, 0 = not). Preliminary analyses indicated that there were no substantively nor statistically important interaction effects, so we include just the main effects for ease of exposition.

These results are given in Table 11. Considering left-tail longevity implications decreased the average longevity likelihood by 3%, though this was not significant after accounting for controls (b = -1.91, *n.s.*). Considering right-tail longevity implications increased the average subjective longevity probability by 2%, though this difference was not significant with or without controls (b = 2.20, *n.s.*). Overall, the effect of the manipulations on average longevity was small, and in the expected directions, but not robust. In considering the dropoff in longevity likelihood (difference in probability for age 65 and probability for age 95), considering left-tail longevity implications had no effect (b = -0.34, *n.s.*), whereas considering right-tail longevity implications decreased the difference in probability between 65 and 95 by 5% (b = -5.27, $p < .01$).

Third, we consider the effects of condition on claiming age intentions in three models: condition main effects, condition main effects plus controls, and condition main effects plus controls and subjective longevity likelihoods. Considering left-tail longevity implications decreased intended claiming age by about 9 or 10 months (b = -0.79, $p < .01$), whereas considering right-tail longevity implications increased intended claiming age by about 8 or 9 months (b = 0.69, $p < .01$). Only a very small portion of this effect was accounted for by differences in subjective longevity likelihoods (b = 0.015, $p < .05$). These results are shown in Table 12. We also examined whether there was evidence that the manipulation changed the weights placed on left-tail vs. right-tail longevity likelihoods. There was no evidence that it did, so as in Study 2, we exclude the additional extended results table for brevity.

Discussion

The results of Study 3 indicate that the salience manipulations had large effects on claiming age intentions. The key question is then why. This experiment opens the door to several intriguing possibilities.

First, it appears the effect is *not* due to differences in subjective longevity probabilities. While there were some rather small effects on probability estimates, there were large effects on claiming age intentions, and these large effects persisted controlling for subjective longevity probabilities. This suggests that whatever effect the manipulation had on claiming age intentions apparently did not operate through life expectations.

Second, the effect of the manipulation suggests that the tradeoffs between claiming early (and potentially missing out on many years of higher benefits) vs. late (and potentially missing out on a few early years of some benefits) may not be obvious to consumers. Considerable work in behavioral sciences indicates that when the implications of a certain course of action are not made explicit, they may not be spontaneously considered (Frederick et al., 2009; Kahneman, 2011; Magen, Dweck, & Gross, 2008; Read, Olivola, & Hardisty, 2016; Slovic, 1972; Spiller, 2011). Merely encouraging participants to reflect upon the connection between claiming age and relative benefits subsequently received may be important. Similar interventions using salience of reasons for and against later or earlier claiming have been found to also lead to large differences in claiming intentions (Knoll, Appelt, Johnson, & Westfall, 2015). Our manipulation may encourage this deeper consideration of the tradeoffs since they are asked to consider what claiming decision they would recommend to someone with particular longevity estimates.

Third, by encouraging participants to make a recommendation for someone else rather than for themselves, the manipulation may effectively take advantage of the hot-cold empathy gap (Loewenstein, 1996, 2000; Read & van Leeuwen, 1998; Van Boven, Dunning, & Loewenstein, 2000). That is, when deciding for one's self, various non-normative factors (including emotional reactions and impatience) are likely to play a role, whereas when deciding for others it is often possible to push such inputs aside and focus on factors that matter more in a reasoned analysis, such as financial stability in old age. Once one has made such a recommendation for someone else, it may be more possible to follow through on it oneself. This suggests a potentially powerful intervention for future research: prior to setting a claiming age intention (or actual claiming), retirees could be prompted to consider what they would recommend for someone else who may be in similar circumstances. If they focus on the long-term sequence of payments, following their own recommendation for someone else may enable later claiming in situations in which that is preferable.

Fourth, and somewhat conflicting from the third point above, the manipulation also included consideration of someone known to the participant who died relatively early in retirement (favoring claiming early) or late in retirement (favoring claiming late). This may have made the *consequences* of different claiming ages more vivid (e.g., thinking of a close friend having to make it on a lower monthly income in old age vs. an abstract notion of lower monthly income in old age). Future work may disentangle these components of our manipulation to observe which one is the more powerful ingredient.

GENERAL DISCUSSION

We initially sought to understand the extent to which people considering Social Security claiming are sensitive to left-tail longevity likelihoods (subjective probability of living to age 65), breakeven longevity likelihoods (subjective probability of living to age 80), and right-tail longevity likelihoods (subjective probability of living to age 95) when considering intended claiming ages. Our goal was to see whether the uncertainty reflected in differences in these central versus tail likelihoods might affect claiming, with the right-tail likelihood predicted to have the largest effect. Our first key result is that, relatively consistently across analyses, people are equally sensitive to subjective probabilities of living to 65, 80, and 95. To the extent that delaying claiming is more important later in retirement, claiming age intentions should be more sensitive to the probability of living to 95 than the probability of living to 65, yet we do not observe such differential sensitivity. This is an interesting and important null result. Just the same, although our initial hypotheses were not confirmed by the data in this investigation, we note that our failure to reject the null hypothesis does not mean that we have proven the alternative hypothesis false. Rather, the possibility remains that right- and left-tail longevity likelihoods may in fact have an effect on claiming age intentions when measured in different ways or in different contexts.

Second, we tested two different experimental manipulations to examine whether they affect sensitivity to different probability estimates for different threshold ages. Neither did, but they led to unexpected insights. In particular, making a recommendation for someone else who is known to live long into retirement, coupled with thinking about a particular individual known to the respondent who lived long into retirement, led to a claiming age intention approximately 9 months older compared to no intervention. In contrast, an analogous manipulation focused on dying early in retirement led to an intention 9 months younger than no intervention. Identifying the active ingredient to these interventions, and how to implement them more broadly, could provide a powerful tool for individuals who from a long-run perspective may be better off claiming at 70 but are tempted to claim earlier.

Throughout this project, we have considered claiming *intentions* to enable more precise measurement and feasibly measure effects within a reasonable timeframe. While there is good evidence that claiming intentions are significantly correlated with actual claiming behavior (per an analysis reported in Brown, Kapteyn, & Mitchell, 2013 using HRS data), they are not the same. Nonetheless, intentions may help drive behavior. First, research on the mere measurement effect (Morwitz & Fitzsimons, 2004; Morwitz, Johnson, & Schmittlein, 1993; Feldman & Lynch, 1988; Sherman, 1980) suggests that individuals' subsequent behavior is often driven to be consistent with their initial stated intentions, creating a form of a self-fulfilling prophecy. In this sense, it may be useful to merely elicit optimistic stated intentions from individuals, especially since claiming age intentions are significantly affected by current age. Second, this also poses the potential for a new type of intervention: it may be possible to encourage use of implementation intentions to translate intentions into behavior (Gollwitzer, 1999; Gollwitzer & Sheeran, 2006; Milkman, et al., 2011).

One consistent finding in these studies, although not the finding we originally anticipated, is the importance of the likelihood or living to age 80 on claiming intentions, relative to likelihoods for other ages. We chose to use likelihood at age 80 because it is close to a "breakeven" age for most individuals, at which point the cumulative benefits of claiming at age 62 are surpassed by the cumulative benefits of claiming at age 70. The effect of breakeven age on claiming intentions has been tested in other research, and in fact breakeven age used to be regularly provided by SSA representatives when counseling clients on their claiming decision (Brown, Kapteyn, & Mitchell, 2013; Liebman and Luttmer, 2012). The typical finding is that making the breakeven age salient during the claiming decision appears to move claiming forward relative to a symmetric frame that focuses on the other age tails, by as much as 15 months. While we do not explicitly test how framing the decision with breakeven age changes intentions relative to a neutral frame, the high sensitivity in our studies to age 80 likelihoods suggests that individuals are still thinking about it. Additional interventions that better increase the saliency of other age ranges should be tested to see whether the power of the breakeven age can be weakened.

At a time when many Americans are living longer, deciding when to retire and when to claim Social Security benefits (and by extension, how much money one will have in retirement) carries considerably more weight than it did even two or three decades ago. In the present paper, we explored how one facet of this decision – heterogeneity in uncertainty around longevity expectations – predicts differences in claiming decisions. Unexpectedly, we found that what seems to matter most for intended claiming age is sensitivity to the break-even age (i.e., the age at which cumulative earnings from claiming early or claiming late are similar). Perhaps this finding should not be so surprising in retrospect: making predictions about one's future needs, wants, and longevity are notoriously difficult tasks to undertake, and assessing the value of the breakeven age may simply be an easier judgment (out of a set of complex ones) to make. We look forward to future work that continues to explore this and other similar psychological forces that underlie Social Security claiming age.

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Table 1. Study 1A Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.027***		0.029***	
	(0.005)		(0.005)	
P(65)		0.018**		0.021***
		(0.008)		(0.008)
P(80)		-0.005		-0.007
		(0.009)		(0.009)
P(95)		0.018***		0.019***
		(0.006)		(0.006)
Age			-0.001	-0.002
			(0.015)	(0.015)
Female Dummy			-0.323	-0.366*
			(0.200)	(0.201)
Loss Aversion			-0.063	-0.070
			(0.042)	(0.043)
SSA Exist			-0.011***	-0.011***
			(0.004)	(0.004)
Constant	64.829***	64.672***	65.970***	65.814***
	(0.264)	(0.411)	(0.774)	(0.798)
N	772	772	759	759
R^2	0.042	0.046	0.067	0.071
Adjusted R^2	0.041	0.042	0.060	0.062
Residual Std. Error	2.728 (df = 770)	2.727 (df = 768)	2.688 (df = 753)	2.685 (df = 751)
F Statistic	33.999*** (df = 1; 770)	12.213*** (df = 3; 768)	10.737*** (df = 5; 753)	8.201*** (df = 7; 751)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Model 2 showed no improvement over Model 1 ($F(2,768) = 1.307$, $p = .271$).
Model 4 showed no improvement over Model 3 ($F(2, 751) = 1.8035$, $p = .165$).

Table 2. Study 1B Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.034***		0.034***	
	(0.004)		(0.004)	
P(65)		0.019**		0.021***
		(0.008)		(0.008)
P(80)		0.009		0.009
		(0.009)		(0.009)
P(95)		0.010**		0.008*
		(0.005)		(0.005)
Age			-0.013	-0.014
			(0.011)	(0.011)
Female Dummy			-0.296*	-0.295*
			(0.172)	(0.173)
Loss Aversion			-0.059**	-0.060**
			(0.029)	(0.029)
Psychological Ownership			-0.095	-0.101
			(0.075)	(0.075)
SSA Exist			-0.005*	-0.006*
			(0.003)	(0.003)
Constant	63.538***	63.121***	65.349***	64.853***
	(0.272)	(0.450)	(0.658)	(0.728)
N	990	990	989	989
R^2	0.068	0.070	0.081	0.084
Adjusted R^2	0.068	0.067	0.075	0.076
Residual Std. Error	2.657 (df = 988)	2.658 (df = 986)	2.644 (df = 982)	2.643 (df = 980)
F Statistic	72.621*** (df = 1; 988)	24.659*** (df = 3; 986)	14.378*** (df = 6; 982)	11.164*** (df = 8; 980)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Model 2 showed no improvement over Model 1 ($F(2, 986) = 0.700$, $p = .497$).
Model 4 showed no improvement over Model 3 ($F(2, 980) = 1.480$, $p = .228$).

Table 3. Study 1C Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.041***		0.042***	
	(0.004)		(0.004)	
P(65)		0.007		0.011
		(0.008)		(0.008)
P(80)		0.025***		0.023***
		(0.008)		(0.008)
P(95)		0.007		0.007
		(0.005)		(0.005)
Age			-0.038**	-0.039**
			(0.015)	(0.015)
Female Dummy			0.062	0.076
			(0.173)	(0.173)
Loss Aversion			-0.069**	-0.070**
			(0.029)	(0.029)
Psychological Ownership			-0.246***	-0.249***
			(0.081)	(0.081)
Intertemporal Discounting			0.393***	0.389***
			(0.093)	(0.093)
SSA Exist			-0.009***	-0.010***
			(0.004)	(0.004)
Constant	63.267***	63.337***	67.111***	67.036***
	(0.268)	(0.461)	(0.945)	(0.987)
N	1,004	1,004	917	917
R^2	0.092	0.094	0.147	0.149
Adjusted R^2	0.091	0.092	0.140	0.140
Residual Std. Error	2.626 (df = 1002)	2.626 (df = 1000)	2.556 (df = 909)	2.556 (df = 907)
F Statistic	102.011*** (df = 1; 1002)	34.709*** (df = 3; 1000)	22.312*** (df = 7; 909)	17.577*** (df = 9; 907)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Model 2 showed no improvement over Model 1 ($F(2, 1000) = 1.052$, $p = .350$).
Model 4 showed no improvement over Model 3 ($F(2, 907) = 1.005$, $p = .366$).

Table 4. Study 1D Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.020***		0.021***	
	(0.004)		(0.004)	
P(65)		-0.008		-0.002
		(0.007)		(0.007)
P(80)		0.017**		0.016**
		(0.007)		(0.007)
P(95)		0.005		0.004
		(0.004)		(0.004)
Age			-0.053***	-0.053***
			(0.013)	(0.013)
Female Dummy			0.148	0.156
			(0.163)	(0.163)
Loss Aversion			-0.049*	-0.048*
			(0.026)	(0.026)
Psychological Ownership			-0.275***	-0.275***
			(0.067)	(0.067)
Intertemporal Discounting			0.290***	0.289***
			(0.078)	(0.078)
SSA Exist			-0.006*	-0.005*
			(0.003)	(0.003)
Constant	64.343***	64.975***	68.917***	69.166***
	(0.229)	(0.392)	(0.782)	(0.822)
N	1,394	1,394	1,394	1,394
R^2	0.023	0.027	0.069	0.071
Adjusted R^2	0.023	0.024	0.065	0.065
Residual Std. Error	2.810 (df = 1392)	2.808 (df = 1390)	2.749 (df = 1386)	2.749 (df = 1384)
F Statistic	33.300*** (df = 1; 1392)	12.614*** (df = 3; 1390)	14.783*** (df = 7; 1386)	11.716*** (df = 9; 1384)

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Model 2 showed no improvement over Model 1 ($F(2, 1390) = 2.241$, $p = .107$).
Model 4 showed no improvement over Model 3 ($F(2, 1384) = 0.980$, $p = .376$).

Table 5. Study 1E Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.035***		0.034***	
	(0.005)		(0.005)	
P(65)		-0.004		0.009
		(0.010)		(0.009)
P(80)		0.036***		0.024**
		(0.011)		(0.010)
P(95)		-0.0004		0.001
		(0.006)		(0.006)
Age			-0.074***	-0.072***
			(0.019)	(0.019)
Female Dummy			0.465**	0.474**
			(0.236)	(0.236)
Loss Aversion			-0.110***	-0.112***
			(0.035)	(0.035)
Psychological Ownership			-0.440***	-0.433***
			(0.100)	(0.100)
Intertemporal Discounting			0.619***	0.616***
			(0.102)	(0.102)
SSA Exist			-0.010**	-0.010**
			(0.004)	(0.004)
Constant	63.307***	63.545***	70.083***	69.764***
	(0.320)	(0.482)	(1.136)	(1.160)
N	666	666	666	666
R^2	0.073	0.080	0.202	0.206
Adjusted R^2	0.071	0.076	0.193	0.195
Residual Std. Error	2.803 (df = 664)	2.796 (df = 662)	2.613 (df = 658)	2.610 (df = 656)
F Statistic	52.148*** (df = 1; 664)	19.216*** (df = 3; 662)	23.737*** (df = 7; 658)	18.859*** (df = 9; 656)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Model 2 was a marginally significant improvement over Model 1 ($F(2, 662) = 2.623$, $p = .073$). Model 4 showed no improvement over Model 3 ($F(2, 656) = 1.628$, $p = .197$).

Table 6. Study 1F Results

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.021***		0.019***	
	(0.005)		(0.005)	
P(65)		0.005		0.005
		(0.006)		(0.006)
P(80)		0.017**		0.016**
		(0.007)		(0.007)
P(95)		-0.004		-0.004
		(0.005)		(0.005)
Age			-0.054***	-0.054***
			(0.016)	(0.016)
Female Dummy			-0.351*	-0.353*
			(0.181)	(0.181)
Loss Aversion			-0.071**	-0.073**
			(0.034)	(0.034)
Psychological Ownership			-0.199**	-0.192**
			(0.079)	(0.079)
Intertemporal Discounting			0.485***	0.467***
			(0.094)	(0.094)
SSA Exist			-0.002	-0.003
			(0.004)	(0.004)
Constant	63.937***	63.799***	67.171***	67.036***
	(0.254)	(0.337)	(0.761)	(0.786)
N	831	831	827	827
R^2	0.023	0.029	0.088	0.093
Adjusted R^2	0.021	0.025	0.080	0.083
Residual Std. Error	2.652 (df = 829)	2.647 (df = 827)	2.567 (df = 819)	2.562 (df = 817)
F Statistic	19.180*** (df = 1; 829)	8.170*** (df = 3; 827)	11.222*** (df = 7; 819)	9.326*** (df = 9; 817)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Model 2 showed a marginally significant improvement vs Model 1 ($F(2, 827) = 2.628$, $p = .073$).
Model 4 showed a marginally significant improvement vs Model 3 ($F(2, 817) = 2.540$, $p = .079$).

Table 7. Study 2 Results as a Function of Probability of Living to Threshold Ages

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.040***		0.048***	
	(0.005)		(0.005)	
P(65)		0.001		0.010
		(0.008)		(0.008)
P(80)		0.033***		0.033***
		(0.007)		(0.007)
P(95)		0.003		0.005
		(0.004)		(0.004)
Age			-0.024	-0.024
			(0.017)	(0.017)
Female Dummy			0.098	0.077
			(0.264)	(0.263)
Loss Aversion			-0.033	-0.032
			(0.034)	(0.033)
Psychological Ownership			-0.203**	-0.204**
			(0.093)	(0.093)
Intertemporal Discounting			1.663***	1.626***
			(0.617)	(0.615)
SSA Exist			-0.015***	-0.015***
			(0.004)	(0.004)
Constant	63.355***	63.556***	65.074***	64.920***
	(0.330)	(0.509)	(1.116)	(1.156)
N	780	780	729	729
R^2	0.086	0.096	0.143	0.153
Adjusted R^2	0.084	0.092	0.134	0.142
Residual Std. Error	2.805 (df = 778)	2.792 (df = 776)	2.723 (df = 721)	2.711 (df = 719)
F Statistic	72.888*** (df = 1; 778)	27.437*** (df = 3; 776)	17.143*** (df = 7; 721)	14.400*** (df = 9; 719)

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Model 2 showed a significant improvement vs Model 1 ($F(2, 776) = 4.393$, $p = .013$).
Model 4 showed a significant improvement vs Model 3 ($F(2, 776) = 4.260$, $p = .014$).

Table 8. Study 2 Effects of Condition on Subjective Longevity Probabilities

	Average Probability		Difference in Probability	
	(1)	(2)	(3)	(4)
Left-Tail Salient	-6.324***	-6.004***	0.431	-0.084
	(1.852)	(1.769)	(2.432)	(2.475)
Right-Tail Salient	1.967	2.905*	-17.489***	-17.871***
	(1.851)	(1.761)	(2.430)	(2.463)
Age		-0.279**		0.372**
		(0.122)		(0.171)
Female Dummy		9.015***		-8.979***
		(1.852)		(2.591)
Loss Aversion		-0.241		0.422
		(0.239)		(0.335)
Psychological Ownership		-0.256		0.551
		(0.667)		(0.933)
Intertemporal Discounting		6.076		1.410
		(4.400)		(6.155)
SSA Exist		0.245***		-0.027
		(0.027)		(0.038)
Constant	68.359***	56.936***	45.873***	30.290***
	(1.311)	(7.793)	(1.721)	(10.900)
N	780	729	780	729
R^2	0.027	0.151	0.084	0.108
Adjusted R^2	0.025	0.142	0.081	0.098
Residual Std. Error	21.099 (df = 777)	19.435 (df = 720)	27.702 (df = 777)	27.184 (df = 720)
F Statistic	10.972*** (df = 2; 777)	16.016*** (df = 8; 720)	35.487*** (df = 2; 777)	10.890*** (df = 8; 720)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Table 9. Study 2 Effects of Condition on Claiming Age

	Intended Claiming Age		
	(1)	(2)	(3)
Left-Tail Salient	-0.301	-0.231	0.155
	(0.257)	(0.262)	(0.251)
Right-Tail Salient	-0.051	-0.051	0.069
	(0.257)	(0.261)	(0.264)
Age		-0.036**	-0.023
		(0.018)	(0.017)
Female Dummy		0.530*	0.071
		(0.275)	(0.264)
Loss Aversion		-0.044	-0.031
		(0.035)	(0.033)
Psychological Ownership		-0.215**	-0.202**
		(0.099)	(0.093)
Intertemporal Discounting		1.963***	1.629***
		(0.653)	(0.616)
SSA Exist		-0.003	-0.015***
		(0.004)	(0.004)
P(65)			0.010
			(0.008)
P(80)			0.034***
			(0.007)
P(95)			0.004
			(0.005)
Constant	66.158***	67.783***	64.798***
	(0.182)	(1.156)	(1.174)
N	780	729	729
R^2	0.002	0.040	0.153
Adjusted R^2	-0.001	0.030	0.140
Residual Std. Error	2.932 (df = 777)	2.883 (df = 720)	2.714 (df = 717)
F Statistic	0.782 (df = 2; 777)	3.769*** (df = 8; 720)	11.791*** (df = 11; 717)
Notes:	***Significant at the 1 percent level.		
	**Significant at the 5 percent level.		
	*Significant at the 10 percent level.		

Table 10. Study 3 Results as a Function of Probability of Living to Threshold Ages

	Intended Claiming Age			
	(1)	(2)	(3)	(4)
Mean P	0.028***		0.031***	
	(0.004)		(0.004)	
P(65)		0.005		0.007
		(0.006)		(0.007)
P(80)		0.014**		0.015**
		(0.007)		(0.007)
P(95)		0.007		0.008
		(0.005)		(0.005)
Age			-0.023	-0.023
			(0.016)	(0.016)
Female Dummy			-0.002	-0.010
			(0.192)	(0.192)
Loss Aversion			-0.056*	-0.057*
			(0.031)	(0.031)
Psychological Ownership			-0.192**	-0.190**
			(0.081)	(0.081)
Intertemporal Discounting			1.734***	1.736***
			(0.593)	(0.596)
SSA Exist			-0.009**	-0.009**
			(0.004)	(0.004)
Constant	64.759***	64.877***	66.408***	66.457***
	(0.246)	(0.362)	(1.082)	(1.103)
N	1,046	1,046	955	955
R^2	0.046	0.047	0.083	0.083
Adjusted R^2	0.045	0.044	0.076	0.074
Residual Std. Error	2.944 (df = 1044)	2.946 (df = 1042)	2.894 (df = 947)	2.897 (df = 945)
F Statistic	50.449*** (df = 1; 1044)	16.967*** (df = 3; 1042)	12.172*** (df = 7; 947)	9.504*** (df = 9; 945)

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Model 2 showed no improvement over Model 1 ($F(2, 1042) = 0.262$, $p = .770$).
Model 4 showed no improvement over Model 3 ($F(2, 945) = 0.235$, $p = .791$).

Table 11. Study 3 Effects of Condition on Subjective Longevity Probabilities

	Average Probability		Difference in Probability	
	(1)	(2)	(3)	(4)
Left-Tail Salient	-3.056**	-1.912	-0.207	-0.341
	(1.437)	(1.428)	(1.658)	(1.709)
Right-Tail Salient	2.124	2.199	-4.938***	-5.267***
	(1.438)	(1.429)	(1.659)	(1.710)
Age		-0.274**		0.199
		(0.124)		(0.149)
Female Dummy		4.897***		-1.405
		(1.450)		(1.736)
Loss Aversion		-0.464*		0.194
		(0.237)		(0.283)
Psychological Ownership		-2.556***		1.369*
		(0.608)		(0.728)
Intertemporal Discounting		-2.776		12.825**
		(4.514)		(5.403)
SSA Exist		0.245***		0.024
		(0.027)		(0.033)
Constant	58.890***	73.450***	46.418***	17.689*
	(1.230)	(7.926)	(1.419)	(9.486)
N	1,046	955	1,046	955
R^2	0.006	0.104	0.008	0.023
Adjusted R^2	0.004	0.097	0.007	0.015
Residual Std. Error	23.242 (df = 1043)	22.015 (df = 946)	26.816 (df = 1043)	26.347 (df = 946)
F Statistic	3.323** (df = 2; 1043)	13.772*** (df = 8; 946)	4.443** (df = 2; 1043)	2.836*** (df = 8; 946)
Notes:	***Significant at the 1 percent level.			
	**Significant at the 5 percent level.			
	*Significant at the 10 percent level.			

Table 12. Study 3 Effects of Condition on Intended Claiming Age

	Intended Claiming Age		
	(1)	(2)	(3)
Left-Tail Salient	-0.766***	-0.845***	-0.791***
	(0.183)	(0.189)	(0.185)
Right-Tail Salient	0.801***	0.754***	0.690***
	(0.183)	(0.190)	(0.186)
Age		-0.036**	-0.028*
		(0.016)	(0.016)
Female Dummy		0.103	-0.050
		(0.192)	(0.189)
Loss Aversion		-0.064**	-0.051*
		(0.031)	(0.031)
Psychological Ownership		-0.263***	-0.186**
		(0.081)	(0.080)
Intertemporal Discounting		1.688***	1.762***
		(0.599)	(0.587)
SSA Exist		-0.002	-0.009**
		(0.004)	(0.004)
P(65)			0.008
			(0.007)
P(80)			0.015**
			(0.007)
P(95)			0.006
			(0.005)
Constant	66.365***	68.887***	66.740***
	(0.157)	(1.051)	(1.094)
N	1,046	955	955
R^2	0.034	0.067	0.113
Adjusted R^2	0.032	0.059	0.103
Residual Std. Error	2.965 (df = 1043)	2.920 (df = 946)	2.852 (df = 943)
F Statistic	18.088*** (df = 2; 1043)	8.471*** (df = 8; 946)	10.940*** (df = 11; 943)
Notes:	***Significant at the 1 percent level.		
	**Significant at the 5 percent level.		
	*Significant at the 10 percent level.		

Appendix

Right-Tail Salient Condition
Some people live to a very old age after retiring. Unfortunately, some of these people struggle financially because they claimed Social Security benefits too early and earn low monthly benefits.

Below is a table that gives typical monthly Social Security payments depending on what age people started to claim their benefits. People who claim Social Security benefits at a younger age (say, 62) end up earning less per month 9$1,156). People who claim Social Security beneifts at an older age (say, 70) end up earning more per month ($2,036).

Age	Monthly Payment
62	$1,156
63	$1,232
64	$1,314
65	$1,423
66	$1,533
67	$1,642
68	$1,773
69	$1,905
70	$2.036

Imagine someone who is going to live to a very old age in retirement. If you knew in advance how long they would live, at what age would you recommend that person start claiming retirement benefits?

Age	Monthly Payment
62	$1,156
63	$1,232
64	$1,314
65	$1,423
66	$1,533
67	$1,642
68	$1,773
69	$1,905
70	$2.036

Age 62 – Age 63 – Age 64 – Age 65 – Age 66 – Age 67 – Age 68 – Age 69 – Age 70

Now, think of someone you know who lived to a very old age after retiring from work. Please write this person's first name or nickname below.

Left-Tail Salient Condition
Some people die at a very young age after retiring. Unfortunately, some of these people lose out on money because they waited too long to claim Social Security benefits.

Below is a table that gives typical monthly Social Security payments depending on what age people started to claim their benefits. People who claim Social Security benefits at a younger age (say, 62) end up earning less per month 9$1,156). People who claim Social Security beneifts at an older age (say, 70) end up earning more per month ($2,036).

Age	Monthly Payment
62	$1,156
63	$1,232
64	$1,314
65	$1,423
66	$1,533
67	$1,642
68	$1,773
69	$1,905
70	$2.036

Imagine someone who is going to die at a very young age in retirement. If you knew in advance how long they would live, at what age would you recommend that person start claiming retirement benefits?

Age	Monthly Payment
62	$1,156
63	$1,232
64	$1,314
65	$1,423
66	$1,533
67	$1,642
68	$1,773
69	$1,905
70	$2.036

Age 62 – Age 63 – Age 64 – Age 65 – Age 66 – Age 67 – Age 68 – Age 69 – Age 70

Now, think of someone you know who died at a very young age after retiring from work. Please write this person’s first name or nickname below.