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Three Little Words? The Impact of Social Security Terminology

Francisco Perez-Arce^{*,+}, Lila Rabinovich⁺, Joanne Yoong⁺ and Laith Alattar[†]

We study the impact of changing the existing terminology used to describe the rules governing Social Security retirement benefits. We provided respondents from a nationally-representative online panel with information pertinent to the decision of when to claim Social Security retirement benefits. The content of the information treatments was identical for all respondents, but some were randomly given an alternative set of terms to refer to the key claiming ages (the experimental treatment group) while others were given the current terms (the control group). Despite the minimal nature of the change, there were significant differences in outcomes. Those in the treatment group spent less time reading the information but their understanding of the Social Security program improved more than in the control group. In addition, the treatment had the effect of delaying retirement claiming intentions by an average of about two and a half months. Respondents in the treatment group also were more likely to state they would advise standardized characters in hypothetical vignettes to claim later in life. Direct elicitation of all respondents' preferences also revealed they thought the alternative terms were clearer. The relative gains in knowledge among those exposed to the alternative terms persisted several months after the treatment. These effects are stronger for those with low baseline levels of financial literacy.

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One of the most important economic decisions older Americans must make is when to claim their Social Security retirement benefits. While optimal claiming ages vary depending on individual preferences, mortality risk, and health and economic circumstances, there is broad agreement that some people claim too early—resulting in permanently reduced monthly payments—. For most, claiming too early results in reduced expected present value of benefits (Shoven and Slavov, 2014) and for some it can even be shown that it is a suboptimal choice (Bronshtein et al 2016).

The traditional approach to addressing this problem is to give people more information through educational materials about the implications of the timing. As Chan and Stevens (2003) note, well-informed individuals may be more receptive to financial incentives than ill-informed individuals. Earlier studies document sizable impacts associated with providing more information and/or training in a broad range of policy areas, including education, financial planning and tax and welfare policy.¹ With respect to Social Security, large-scale dissemination campaigns have indeed succeeded in influencing household decision-making in the past. Mastrobuoni (2011) found that understanding of the Social Security system was improved among people who received their mailed Social Security Statement, while Cook *et al.* (2010) showed the Statement induced more knowledge and confidence in Social Security in recipients compared to those who did not receive it. Additionally, Liebman and Luttmer (2015) found that providing older workers with a two-page leaflet containing key Social Security information increased labor force participation. However, the high cost of maintaining population-level programs, combined with the need to keep administrative costs manageable make it

¹ See, for example, Jensen (2010) which shows that providing information led teenagers to acquire more schooling, Bettinger et al. (2012) and Hoxby and Turner (2015) for higher education decisions, and Bhargava and Manoli (2015) for employment incentives. Armour (2018) exploits a natural experiment to estimate the impact of information provision on US Disability Insurance applications.

difficult for agencies to maintain costly information programs. For example, to reduce costs, the Social Security Statement no longer is mailed yearly to all workers, in spite of evidence it improves Social Security literacy (Smith and Couch, 2014).

An alternative approach is to use insights from behavioral economics that acknowledge that people often make suboptimal decisions even when they have access to all the information that they need. The increasingly prominence of behavioral economics has fostered policymakers and practitioners to incorporate “nudges” into policies and programs – small changes that effectively direct people towards improved choices, but which are “soft” enough to allow people to make their own decisions. Examples of these nudges abound in areas such as health, education, environment and taxation. In the area of consumer financial behavior in the United States, successful examples include automatic enrollment in retirement savings accounts (Benartzi and Thaler, 2013; Madrian and Shea, 2001) and reminders via text message to increase savings (Karlan et al., 2016). One way to nudge decision-making is by making the relevant information more salient or “framed” in a manner that corrects existing biases. Looking specifically at Social Security benefits, studies that have successfully taken this approach include Brown et al (2016), who show that a framing treatment that moves away from the often used “break-even analysis” can lead to decisions to delay claiming.

In this study, we propose an even more radical approach by providing no new material and no new information at all – instead, we intervene by simply renaming a few critical terms in existing information, with the goal of making the information clearer and eliminate implicit nudges against delayed claiming. Specifically, we examine the impact of changing the terminology Social Security Administration (SSA) uses for the different ages at which people can claim retirement benefits. A set of alternative terms, designed to be more transparent and that eliminate inappropriate anchoring at earlier claiming ages, was selected on the basis of an initial qualitative study (Filus and Rabinovich,

2015) and in consultation with SSA staff. We hypothesized that terms that are clearer and that implicitly convey the reduction of benefits resulting from early claiming ages would improve understanding of the trade-offs between claiming at different ages, thereby allowing people to make more informed decisions, which for many may lead towards claiming at later ages.

We evaluate the impact of the alternative terminology on knowledge and claiming and retirement age intentions² through an online experiment conducted on a representative sample of non-retired Americans in the Understanding America Study (UAS) panel.³ All panelist are presented information relevant for the claiming decision which is identical across treatment groups except for the fact that the information presented to those in the treatment group uses the alternative terminology while that presented to the control group uses the current terminology.

Our results suggest that the choice of terminology has important consequences. Respondents exposed to the alternative terminology performed better in tests measuring their understanding of the information than those exposed to the current terminology. Although these respondents learned more, they also spent less time (about 5% less) reading the information, suggesting that the improvements resulted from information being easier to understand. In addition, intended claiming and retirement ages were higher among the treated by an average of two and a half months than those in the control group. Furthermore, when presented with characters in standardized vignettes, they were also more likely to recommend later claiming ages.

² “Claiming age” is the age at which individuals start receiving their Social Security retirement benefits. “Retirement age” is the age at which individuals stop working, which may or may not correspond to the age they opt to start receiving retirement benefits.

³ For more information on the UAS, refer to Alattar, Messel, and Rogofsky (2018).

Because it is a panel, the UAS allows us to link the data from our experiment with other surveys that respondents have taken, including to a set of “core” surveys that all panelists are invited to take every-two years. We study the heterogeneity of effects by interacting treatment status with baseline measures of financial and social security literacy and of cognitive ability, and indicators of socio-economic status such as education, income and wealth. We find that our experimental effects are heterogeneous, and are particularly strong for individuals with low levels of financial literacy.

A majority of our participants have been invited to answer a survey on Social Security literacy *after* our experiment, enabling us to track the persistence of our treatment effects on both knowledge and claiming intentions. We find that survey respondents who were exposed to the alternative terms are still statistically significantly more knowledgeable months later, and suggestive evidence that they also continue to expect to claim later. The difference in knowledge between treatment and control groups is almost unchanged in the posterior survey, while the difference in intended claiming age is smaller though still positive.

We conclude that choosing terminology carefully is important. Changing the terminology used in information about the trade-offs in claiming ages may lead to better decision-making on claiming and retirement decisions, particularly for those with low levels of financial literacy. In Section I, we describe the claiming terminology and the qualitative findings that motivated our study. In Section II, we describe the experiment, and report results in Section III, concluding in Section IV.

I. Claiming Terminology and Preliminary Findings

Currently, the SSA refers to the earliest possible time at which individuals can claim retirement benefits as the Early Eligibility Age (EEA) – age 62 - and the time when they become eligible for

unreduced benefits as the Full Retirement Age (FRA), which varies by birth year⁴. Individuals can also earn extra benefits - Delayed Retirement Credits (DRCs) – if they wait to claim beyond their FRA, up to age 70. Claiming after age 70 does not result in additional increases in the benefit amount.

In the qualitative formative stage of this study, Filus and Rabinovich (2015) found many people are confused by the terms used by SSA. Also, the word “early” in EEA highlights the attractive aspect of claiming at this age (namely, receiving benefits earlier), but the term does not make salient the permanent reduction in benefits associated with it. Both the words “full” and “retirement” in FRA invited misinterpretation: the first by suggesting FRA is the age at which one receives the maximum entitlement, and the second by implying that FRA is the moment at which one stops or should stop working in order to claim. Finally, the concept of DRCs baffled participants, as they were both unfamiliar with it and unable to work out any of its key implications from the term alone.

Based on these initial qualitative findings, we hypothesized that the existing terminology encourages earlier claiming by anchoring recipients at their Full Retirement Age rather than the age at which benefits are maximized (70), which is not named – and, hence, not salient. A potentially useful approach would thus be to revise the existing terms with the aim of increasing knowledge, reduce confusion and increase confidence, ultimately leading to a reduction in the proportion of recipients claiming before or at their FRA, and increasing the proportion of recipients claiming at age 70.

Following further discussions with the SSA, we developed the alternative terms as shown in Table 1.

⁴ Normal Retirement Age also is used in some SSA communications, although much less frequently than Full Retirement Age.

Table 1. Terminology

Current Terms	Alternative Terms
Early Eligibility Age (EEA)	Minimum Benefit Age (MinBA)
Full Retirement Age (FRA)	Standard Benefit Age (SBA)
Delayed Retirement Credits (DRC)	Maximum Benefit Age (MaxBA)

II. The Experiment

To evaluate the impact of these alternative terms, we designed a survey with an embedded experiment for the Understanding America Study (UAS), a probability sample of the U.S population. Currently, the UAS has more than 6,000 participants answering surveys on a range of topics.⁵

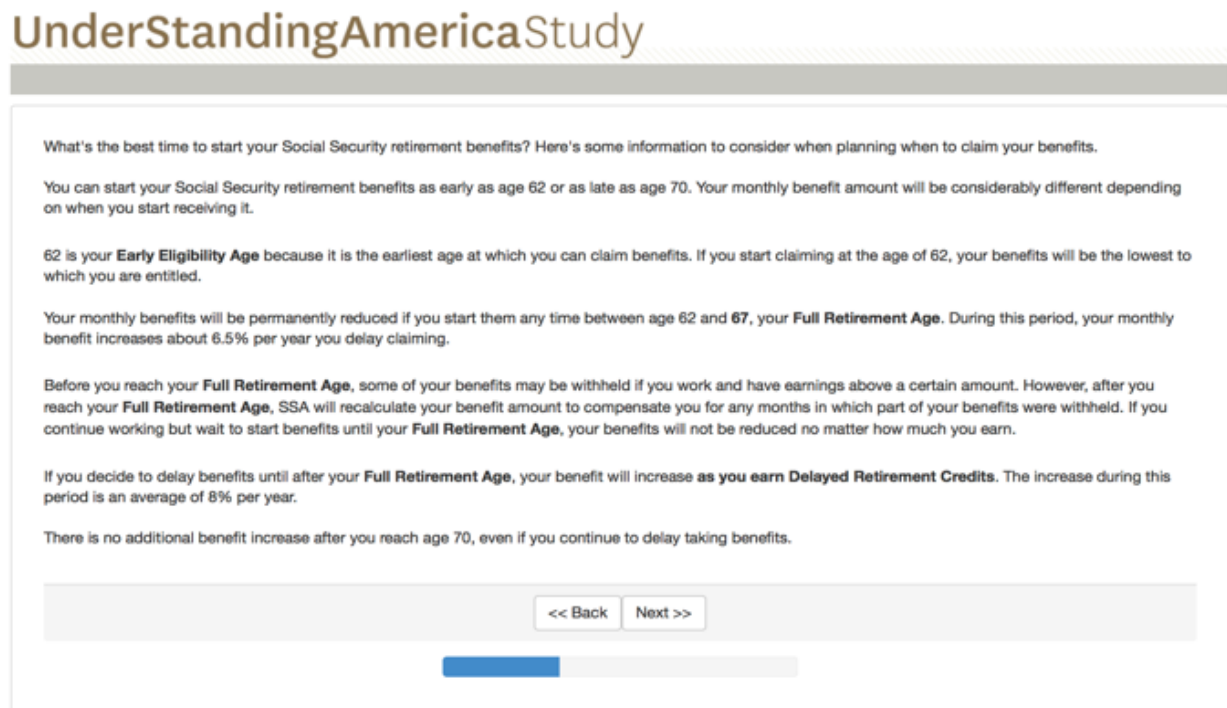
An important aspect of using the UAS as the setting for the experiment is that panelists had answered previous surveys where they had been asked about their intention to retire and claim Social Security benefits, and had been tested on their knowledge of Social Security Programs (see Yoong et al, 2015). Other surveys have measured their levels of financial literacy, cognitive ability, and had asked about income and wealth levels (see Alattar *et al*, 2018). We used baseline information from the respondents to construct illustrative estimates of their future Social Security benefit for use later in the survey.

We provided all respondents with the same information about the claiming rules for Social Security, but randomized the terminology. Individuals in the treatment group were provided with the

⁵ The UAS is an address-based probability sample. For additional information, see: https://cesr.usc.edu/data_toolbox/understanding_america_study and also Alattar, Messel, and Rogofsky (2018).

information using the alternative terms in Table 1, while the information in the control group used the current terms. Figure 1 shows an example of an information screen with treatment and control wording. The versions are otherwise identical except some minor adjustments to accommodate the corresponding terms.

Figure 1. Claiming Terminology Treatment Examples



UnderStandingAmericaStudy

What's the best time to start your Social Security retirement benefits? Here's some information to consider when planning when to claim your benefits.

You can start your Social Security retirement benefits as early as age 62 or as late as age 70. Your monthly benefit amount will be considerably different depending on when you start receiving it.

62 is your **Minimum Benefit Age** because if you claim at that age, your monthly payments will be the lowest to which you are entitled.

Your monthly benefits will be permanently reduced if you start them any time between age 62 and **67**, your **Standard Benefit Age**. During this period, your monthly benefit increases about 6.5% per year you delay claiming.

Before you reach your **Standard Benefit Age**, some of your benefits may be withheld if you work and have earnings above a certain amount. However, after you reach your **Standard Benefit Age**, SSA will recalculate your benefit amount to compensate you for any months in which part of your benefits were withheld. If you continue working but wait to start benefits until your **Standard Benefit Age**, your benefits will not be reduced no matter how much you earn.

If you decide to delay benefits until after your **Standard Benefit Age**, your benefit will increase. The increase during this period is an average of 8% per year.

There is no additional benefit increase after you reach age **70**, your **Maximum Benefit Age**, even if you continue to delay taking benefits.

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In addition to testing the impact of using alternative terminology, we examined the effects of applying the terms in two different information treatments. One treatment presented information with language and format modeled after the SSA website, as shown in Figure 1. The other treatment, seen in Figure 2, used language and a format modeled after material in the websites of the non-profit organization AARP and the Consumer Financial Protection Bureau (CFPB), as well as including a graph that illustrates the trade-off between increased monthly payments and early claiming. Assignment to one of the two information treatments was orthogonal to the assignment of the main terminology treatment (current or alternative terms).

Figure 2. Example of the Alternative Presentation of the Information Treatment

UnderStandingAmericaStudy

Your monthly benefit increases every year you delay claiming Social Security retirement.

You may start receiving benefits as early as age 62, the **Minimum Benefit Age**.

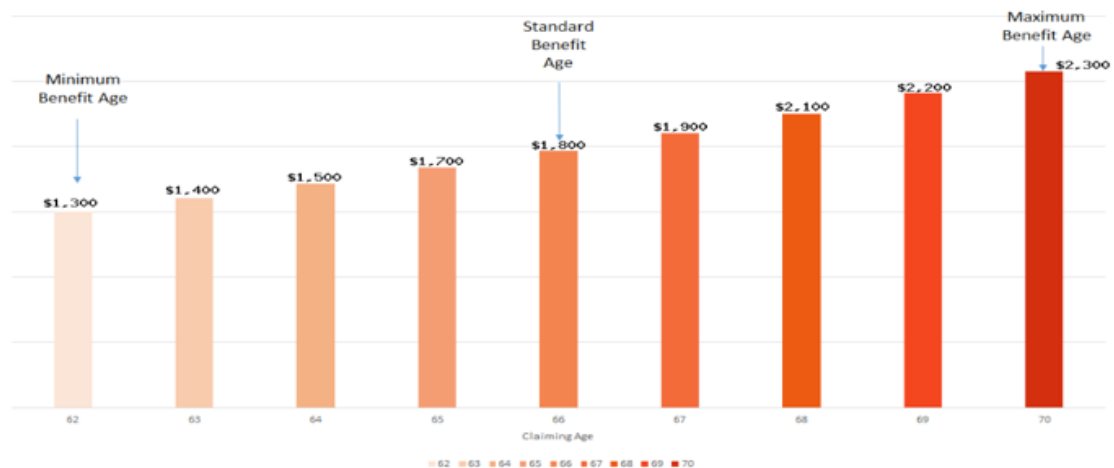
Your monthly benefits will increase by an average of 5 to 6% per year if you delay claiming until you reach age 67, your **Standard Benefit Age**.

If you start receiving benefits *after* you reach your **Standard Benefit Age**, your monthly benefit increases by about 8% per year you delay claiming, until you reach age 70. This is the **Maximum Benefit Age**. After you reach age 70, there are no further increases in your monthly benefit even if you continue to delay claiming.

If you continue working and elect to receive benefits before you reach your **Standard Benefit Age**, your monthly benefit may be reduced if you earn over a certain amount.

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For illustrative purposes, the figure below shows how benefits may vary for an individual who starts claiming at different points in time.



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After respondents were exposed to their assigned information screens, they were asked to indicate the age at which they think they would begin claiming Social Security retirement benefits, and the age at which they would retire. Next, respondents were asked a series of questions to assess their actual and self-rated knowledge of various aspects of the Social Security retirement program.

The survey then included a set of three vignette-based questions. This section aimed to obtain additional insights into respondents' behavioral responses to their assigned treatment and enable comparisons across respondents by soliciting hypothetical claiming ages based on standardized profiles. Each consisted of a short text describing a character at or approaching EEA deciding when to claim Social Security retirement benefits. The first vignette describes a 62-year old man in good health, earning \$2,300 per month, who would earn close to that amount if he stopped working and claimed Social Security retirement benefits at that point. The character in the second vignette is a 61-year old woman, currently in charge of a teenage granddaughter, earning \$3,500 per month and eligible for \$2,000 in monthly benefits if claimed as soon as she became eligible. The character in the third vignette has higher earnings than the first two and also has saved in a 401(k) plan. Finally, respondents were also directly asked about their preferences with respect to the terms. The complete questionnaire is shown in Online Appendix 1.

Our analysis also leverages data collected from the first and second waves of “What Do People Know About Social Security”, WDPK-w1 and WDPK-w2 from now on, a comprehensive survey on retirement and SSA-program literacy in the UAS (Yoong *et al*, 2015)⁶. The WDPK surveys explore Social Security literacy and its association with retirement planning, and is one in a set of ‘core’ surveys that UAS panel members are asked to complete every two years, allowing the examination of changes over time. Eighty-nine percent of our respondents had answered the WDPK before the experiment. In addition, 72% of our study participants answered the second round of the survey after our study by the time of analysis. Hence, we have a baseline for 89% of the sample and a follow-up

⁶ The data from these surveys (UAS16 and UAS94) is publicly available at uasdata.usc.edu.

for 72%. We purposefully designed a subset of the questions in the experiment to be the same or similar to those in the WDPK surveys, thus capturing the same concepts and allowing us to use posterior rounds of the WDPK to examine whether treatment effects on knowledge persist over time. We use our participants' responses to questions about intentions to claim Social Security retirement benefits in WDPK-w1 as the baseline measure for claiming intentions, and the responses to the same question in WDPK-w2 to assess any persistence of treatment effects on that variable.

III. Main Results.

Out of 4,200 invited individuals, we obtained a sample size of 3,458 – a response rate of 82.3 percent. Table 2 shows the demographic characteristics of individuals in the treatment and control groups. Overall, the randomization worked well, as there were no statistically significant differences at the 5% level between control and treatment groups in terms of gender, age, and other demographic characteristics, or on the variables measuring labor force status. Moreover, all variables in Table 2 cannot jointly predict whether a study participant was assigned to the *alternative terms* group (p-value 0.89).

Of particular importance are the baseline levels on the variables most related to the outcomes of the experiment: knowledge about Social Security claiming ages, and intended retirement and claiming ages. The WDPK-w1 produced two knowledge indices, one about general literacy on Social Security, *Basic Knowledge SS Index*, and one more specifically-aligned with the information we present that focuses on knowledge about claiming ages, *SS Claim Age Knowledge Index*. Our sample is relatively well balanced on these knowledge indices, with the *alternative terms* group slightly over-performing in the basic index, and slightly underperforming on the *ages* index. The *alternative terms* group also has slightly earlier intended claiming ages, but the difference is not statistically significant, and also slightly earlier *expected retirement age* (at baseline), which is marginally significant. Though it is not

surprising to see one such difference among the twenty-six variables tested, this difference could be important because expected retirement and claiming ages are strongly positively correlated. Earlier expected retirement and claiming ages at baseline predict similar outcomes post-intervention, hence we are *less* likely to find positive effects in the *alternative terms* group relative to the control group, ceteris paribus. The combined differences in claiming and retirement ages at baseline and in the knowledge index about claiming ages hence suggest a slight negative bias against findings that support our main hypothesis.

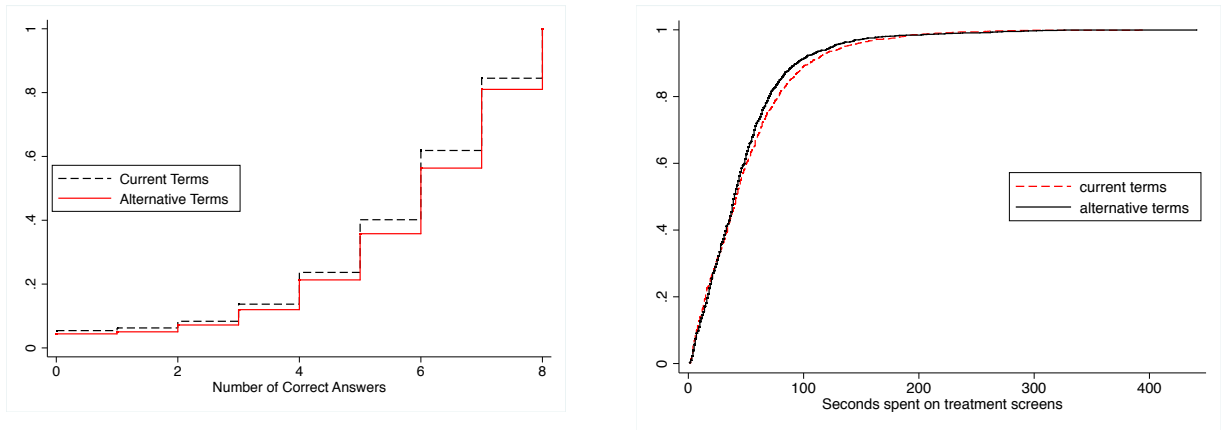
A. Effects on Knowledge

We start by showing that the alternative terminology is related to increased understanding of Social Security rules and lower time spent on the information screens. Respondents in the treatment group spent less time reading the information but learned more from the information presented. Panel A of Figure 3 shows the cumulative distribution of the scores in the quiz about the information we presented: those in the treatment group answered more questions correctly (the p-value for the Wilcoxon test of the differences across the two groups = 0.008). Panel B shows the CDF for the number of seconds spent by respondents in the information screens. Those in the alternative terms spent less time on those screens (on average, they spent 40 seconds, while those in the control group spent 42.5 seconds; p-value of the difference= 0.03).

Figure 3. Cumulative Distribution Functions of Knowledge Score and Time Spent Reading Information Screens.

Panel A. Correct Answers to Knowledge Questions

Panel B. Seconds Spent on Information Screens



Note: Panel A shows the Cumulative Distribution Function for the number of test questions answered correctly. P-value for the Wilcoxon test for equality of distribution equals 0.008, N=3,405. Panel B shows the Cumulative Distribution Function for the number of seconds spent by respondents on the information screens. P-value for the Kolmogorov-Smirnov test for equality of distribution equals 0.046, N=3,219.

Column 1 of Table 3 compares how respondents fared in quizzes about the Social Security rules across the information treatments. The first estimated coefficient in the table corresponds to a regression where the dependent variable is the percentage of questions answered correctly on the treatment dummy, *alternative terms*, an indicator that equals one for respondents assigned to the information using the alternative terms. It yielded a statistically-significant coefficient of 0.019 (p-value=0.008), implying that those exposed to the alternative terms were about 2 percentage points more likely to answer any given question correctly. On average, respondents got 25% of those questions wrong, so assigning a respondent to the alternative terms reduces the number of mistakes by about 8%.

The remaining rows show the results of running separate regressions where the dependent variable is a dummy indicating if a specific question was answered correctly. The coefficients can be interpreted as the incremental change in the probability of getting a correct answer for that question given exposure to the alternative terms. In particular, treated respondents were more likely to correctly identify whether benefits are affected by claiming age (second row in Table 3, coefficient=0.023),

whether benefits have to be claimed at retirement (fourth row, coefficient=0.024), the earliest age for receiving retirement benefits (seventh row, coefficient=0.022, statistically insignificant) and a vignette question about claiming at age 68 (ninth row, coefficient=0.050). Reassuringly, there was no effect on a question on whether benefits are adjusted for inflation (third row), which is a useful falsification check as it is unrelated to the terminology and the information we provided.

B. Effects on Claiming and Retirement Intentions

Our focus turns to effects on intended claiming ages. Given the obvious practical difficulties for studying effects of information and framing on actual claiming behavior, researchers have instead used survey responses to questions about intended or expected claiming (Brown et al, 2016; Liebman and Luttmer, 2012). In Online Appendix 2, we analyze whether intended claiming ages are likely to be good proxies for actual claiming ages. First, we compare how the distribution of intended claiming ages (pre-intervention) compare with that of actual claiming ages in the population. Though an accurate comparison cannot be made because the data on actual claiming ages necessarily correspond to different cohorts than the survey-based intended claiming ages, we show that the “intended” and “actual” distributions have some similarities, such as the peaks at 62 and between 65 and the full retirement age, but also some important differences, such as a higher frequencies of age 70 among intended claiming. In that appendix, we also show that intended claiming ages significantly correlate with the variables that we know they should be related to (such as subjective life expectancy and spousal age differences) and with the variables that other research has established as significant determinants of actual claiming age (such as self-reported health).

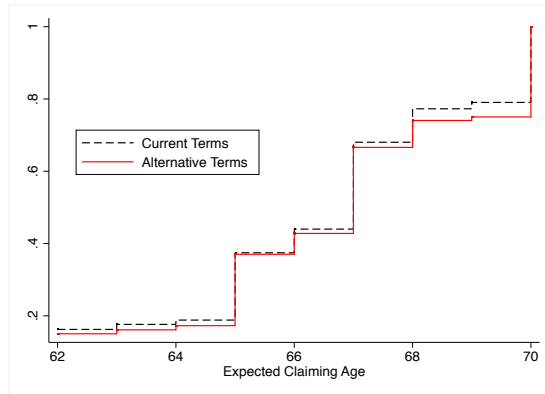
We now turn to analyzing the differences in intended claiming ages across treatment groups after the intervention. Panel A of Figure 4 shows the cumulative distribution function of intended claiming ages across treatment groups. Respondents in the control group intend to claim at earlier ages than

those in the treatment group. The figure is consistent with a pattern in which some respondents who would have claimed at 62 under the status quo are shifted towards 65 or 66 by the alternative terms; and others who would have claimed between 67 and 69 are moved toward claiming at 70. Panel B illustrates this more clearly by combining claiming ages at three intervals: between 62 and 64 (close to the earliest eligibility); between 65 and 67 (around the full retirement age) and between 68 and 70. The proportion in the earliest claiming ages is higher among the *current terms* group than in the *alternative terms* group (19% vs 17%, p-value of difference=0.13), while the proportion claiming in the latest age group is higher under the alternative terms (26% vs 23%, p-value=0.02).

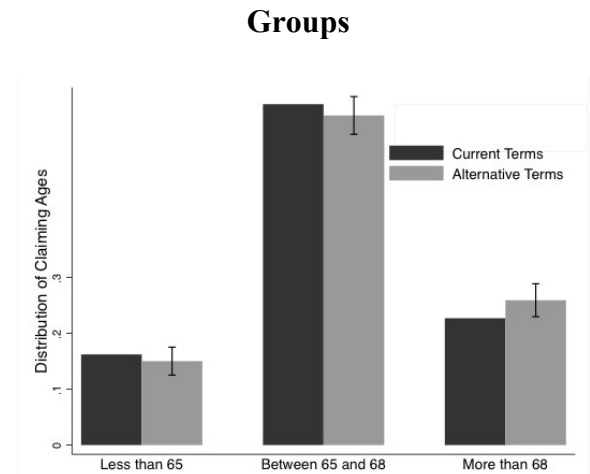
Using data from the WDPK-w1 survey, we analyze how the effect of the treatment differs by baseline level of claiming intentions. Unfortunately, the questions on claiming intentions in the WDPK surveys is only asked to respondents who answer “yes” to a preceding question on whether they know when they will claim their retirement benefit, which cuts about a third of the sample. Furthermore, as we described earlier, 11% of our study participants had not answered the WDPK-w1 survey. Therefore, the sample for this figure is significantly smaller. Panel C shows the post-treatment expected claiming age (local polynomial approximation) after the information treatments by expected claiming age at baseline. The largest differences are at the extreme left of the age-range, suggesting the biggest impact is among those who would have claimed as soon as eligible. Panel D also shows (a polynomial approximation) to the relationship between expected claiming age and age by treatment status. The difference between the two groups is inexistent among the youngest respondents, but is relatively stable after around age 35.

Figure 4. The Effect of the Alternative Terminology on Intended Claiming Age

Panel A. CDF of Intended Claiming Age

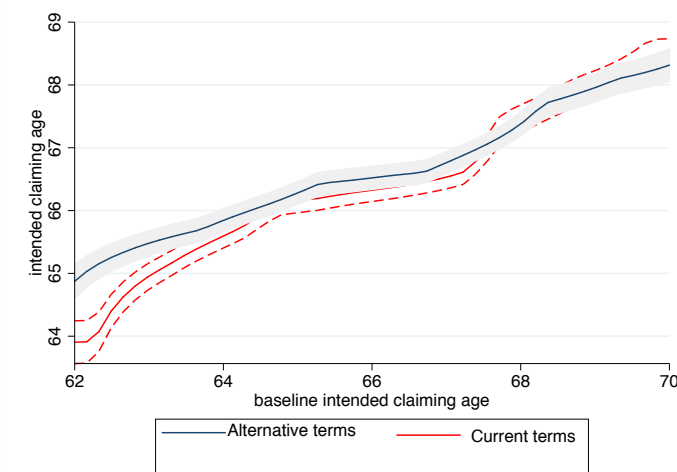


Panel B. Proportion of Responses Across Age Groups



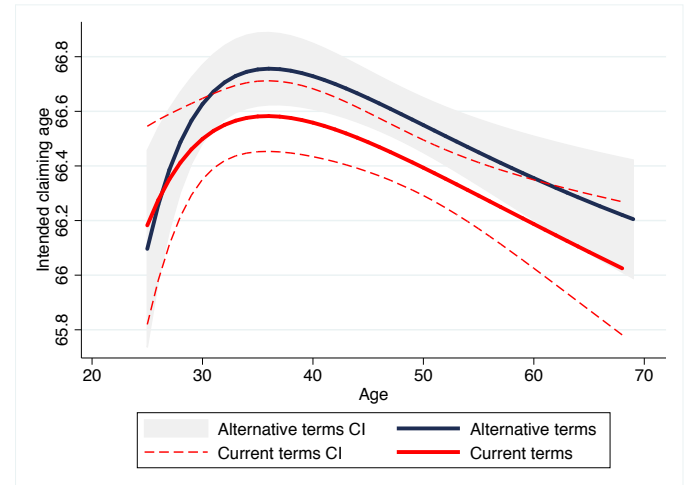
Panel C. Post-Treatment and Baseline Claiming

Age



Panel D. Claiming Age and Age by Treatment

Status



Note: Panel A shows the Cumulative Distribution Function for intended claiming ages by treatment status. P-value for the Wilcoxon test for equality of distribution equals 0.16, $N=3,405$. Panel B shows proportion of respondents across treatments in the 62-64, 65-67, and 68-70 age ranges. The black bars show the distribution for those assigned to the alternative terms condition. The gray bars show the distribution for assigned to the current terms condition. The range plots show 95% confidence intervals of the difference across the two groups. P-value of differences equal 0.13, 0.17 and 0.02, respectively, $N=3,405$. Panel C shows the local polynomial approximation of intended claiming age as a function of baseline claiming age (from the WDPK-w1 survey) by treatment group, $N=1,749$. Panel D shows fractional approximation of intended claiming age as a function of respondents age at time of survey, by treatment group.

Table 4 shows the results of regressing the expected claiming age on the treatment dummy and a set of control variables. The result from the model without controls in the first column shows that the alternative terminology increased claiming ages by 0.145 years. To further improve precision and to account for the higher level of the expected retirement age in the control group at baseline, we also controlled for intended claiming and retirement ages pre-intervention, using the linked data from WDPK-w1.⁷ This result is shown in column four. This increased the magnitude of the difference and the accuracy of the estimated coefficient (the standard error drops from 0.093 to 0.085), which becomes statistically significant at the 5% level (p-value=0.016). The coefficient of 0.20 represents an increase in claiming age of 2.4 months from changing the terminology.⁸ The corresponding coefficient for men only is higher (0.28) and double the size that for women (0.14).

On average, as seen in Table 5, individuals presented with the alternative terms also choose later retirement ages (the relationship is stronger for men). The magnitude of the coefficient is somewhat larger than in the regressions of the claiming ages, as seen in Table 5. However, standard errors are larger; thus, coefficients only are marginally statistically significant or insignificant when estimating on the overall sample. The larger standard error is explained by the fact that retirement age has a larger range, since people may want to retire at any age rather than at the narrow interval of 62 to 70 for claiming age. One may have expected the effect on retirement age to be lower than on claiming

⁷ Since some respondents had not answered that question, we replace missing values with the mean values, and add a dummy variable indicating that the observation for it is missing.

⁸ Adding other predetermined control variables including background characteristics such as age, race and gender, and labor force status variables does not further change substantially the main coefficient or its standard error (results available upon request).

age, because the information treatment was specifically about claiming ages. We consider two possible explanations for the larger point estimate. First, it may be simply an artifact of the larger standard error (that is, the “true” effect is closer to zero). Second, being randomized to the alternative terminology increased the understanding of the fact that retirement and claiming need not happen at the same time. Those assigned to the alternative terms were more likely to correctly answer the true or false question of “Benefits have to be claimed at retirement” (see Table 3). Hence, the alternative terminology may have lead some people to not increase their intended claiming age but do increase their retirement age. In fact, we find that assignment to alternative terms is positively related to (1) the difference between retirement age and claiming age; and, (2) negatively related to an indicator of the respondent choosing the same age for claiming age and retirement age. In both cases, the relation is stronger for men than the sample overall. These results, shown in Table A.3.2 are not statistically significant but likely contributed to the (also insignificant) positive point estimate for retirement.

When presented with the characters in the standardized vignettes, respondents in the treatment condition also recommended later claiming ages (see Table 6). For two of the three vignettes, there was a statistically-significant difference between the treatment arms. The effects are approximately of the same magnitude as on the respondents’ own planned claiming age. On average, respondents in the alternative terms treatment recommended claiming 0.17 years (about 2 months) later than those exposed to the current terms.

As we described in Section II, there were two types of information treatments (cross-randomized with the alternative terminology). We find that the effect of the alternative terminology was not significantly different across the two information treatments. Online Appendix 3 shows the results of estimating regression of three of our outcome variables of interest (intended claiming age, average of correct responses to the knowledge test, and recommended claiming age for the vignette characters)

against an indicator for being in the second of the information treatments, the *alternative terms* indicator, and the interaction of both. In neither case was the coefficient for the interaction large or significantly different from zero in a statistical sense (see Table A.3.1).

C. Heterogeneity

There are several reasons why the effects of the treatment may differ across individuals. First, as shown in Shoven and Slavov (2014), delaying results in higher expected present value of benefits for individuals and couples of certain characteristics given by age, marital status and whether there are one or two earners in the household.⁹ The effect of the treatment on claiming age could also depend on whether the individual will face liquidity constraints, as many claimants face (Goda et al, 2018). On the other hand, the same and other characteristics may affect the insurance value of the annuitized income. For instance, increasing the monthly benefit may be more important for those without other sources of retirement income. And perhaps more important given the nature of our experiment, clarifying the terminology may be more important for those who have low levels of literacy and hence face more difficulties in understanding text that uses unclear terminology.

We linked our data with previous UAS surveys with information on a set of variables that capture financial literacy and previously-assessed measures of Social Security knowledge, cognitive ability, years of education, and household wealth.¹⁰ We then re-estimated our regressions of expected claiming age to include interactions between treatment and each of these variables, as well as a number of controls. Table 7 shows the results of estimating these as separate regressions. Although

⁹ For example, primary earners in married couples have most to gain (Sass et al 2013).

¹⁰ For this purpose, we use the Comprehensive File which includes data from a number of core surveys in the UAS. For more information about these variables see <https://uasdata.usc.edu/addons/documentation/UAS%20Comprehensive%20File%20Data%20Description.pdf>

the interactions are not always statistically significant, the coefficients are consistently negative, suggesting that use of the alternative terms is most strongly positively impactful for people with low financial literacy, low levels of Social Security knowledge, lower measures of cognitive ability, low levels of education, and those who live in households with lower household wealth. To illustrate the magnitude of the interaction effect, we take the example of financial literacy, which is measured on a scale of 0-20 (minimum = 4, mean = 14.3 and maximum = 20 in our sample). For an individual at the mean, the treatment delay in planned benefit-claiming is equal to about 0.21 of a year ($1.154 - 14.3 * .066$), about two and a half months. On the other hand, someone with the lowest measured level of financial literacy would delay claiming by about 11 months ($1.154 - 4 * 0.066 = 0.9$ of a year).

We also estimated the effect of the intervention on other demographic characteristics. As shown above in Tables 4 and 5, the effect of the intervention on claiming age was stronger for men than for women, though there was no significant difference across gender on the effect on their recommendations to vignette average.¹¹ We also find that the effect of the intervention is positive for all age-groups, though the effect strengthens in middle age as shown in Figure 4.¹² We did not find significant differences by marital status.

¹¹ One possible reason for this pattern is that the claiming decision (at least on their own earnings record) is more often irrelevant for women than men due to shorter earning histories. So, it is possible that for more women in our sample, the question of intended claiming age is irrelevant which reduces the average impact on claiming age. In the vignette questions, on the other hand, the respondent's own eligibility does not matter (which was one of the reasons we included them in the survey) and hence the differences in earning records across gender should not matter.

¹² We also tested the regressions separately across three age-groups: under 40, between 40 and 55 and above 55. It is positive in all groups but it is stronger for the group in the middle.

D. Persistence of treatment effects

We link our data to the WDPK-w2 survey, which covers some of the same knowledge test-items of our survey that are relevant to the decision of when to claim, and includes a variable that measures claiming intentions. WDPK-w2 was administered to individual respondents depending on time of enrolment between 1 and 510 days after the experiment (with a median of 228 days). Table A.3.3 in online appendix shows that the treatment and control groups remain balanced in terms of ex-ante background characteristics.

We first discuss the persistence of the knowledge effects. Column 2 of Table 3 shows the effects of being assigned to the *alternative terms* on average test scores and the individual knowledge questions.¹³ The results are remarkably consistent. The effect on test score was of 0.16, only 0.03 points smaller than when using the contemporaneous survey, and the effect is still statistically significant at the 5% level. Rows 2 to 5, and 7 to 9 show the results for test items that are comparable to the ones analyzed in Subsection B. Most coefficients are similar in magnitude, particularly so the ones in rows 2, 8 and 9, which are also statistically significant at the 10% or 5% levels.

The WDPK-w2 survey also elicits intended claiming ages. However, unlike our survey, respondents who have not claimed Social Security benefits are asked whether they know the age when they will claim their benefits, and only if they respond “yes” are they then asked about their intended claiming age (which differs from our survey, where all respondents are asked for their best estimate even if they do not know when they are going to claim).

Table 8 presents the results using this data. The dependent variable in the first column is an indicator of the respondent stating that she does not know when she will claim. For the full sample (first panel), the point estimate implies that being assigned to the *alternative terms* treatment results in a three percentage point increase in the probability that the individual knows when she will claim. The second and third panels show the results when breaking up the sample by gender. There is a marginally statistically significant effect for female respondents, implying that women become (and remain) four percentage points more likely to know when they will claim when assigned to the treatment arm. The fourth and fifth panels third and fourth rows break up the sample by those above and below the median in financial literacy, and show a larger point estimate for those with lower financial literacy. The WDPK survey also asks married respondents whether they know if their spouses will claim Social Security and, if so, when they will claim. Column 2 shows the results using this variable as the dependent one. Among female respondents, being exposed to the *alternative terms* was related to a higher likelihood of knowing when their husbands will claim. A possible interpretation of this result is that increased understanding from the alternative terms heightened married women's interest and subsequent learning of their husbands' claiming intentions but not for men, which may be explained by a larger proportion of couples where the men has the higher social security earnings record.

While increased knowledge of claiming age is consistent with our finding that the alternative terms lead to improved learning, it also makes it more difficult to study the effect on intended claiming age in the posterior survey, as it implies the sample of respondents with a missing dependent variable is affected by treatment status. To account for that potential selection issue, we estimate these regressions in differences. Among the sample for whom we have both a "claiming age" from the pre-

and post surveys (WDPK-w1 and WDPK-w2), we regress the difference in claiming age (the “post-treatment” value minus the “baseline” value) against the treatment indicator.

The main reason for estimating this model is to assess the extent to which the effect on claiming age has persisted. However, in addition to time elapsed since the information treatment, there are differences in the regression specification and sample selection with respect to the results presented in Table 4. Hence, in order to be able to make direct comparisons and attribute any differences to the passage of time, we added a column to Table 8 which uses the *claiming age* dependent variable from the experimental survey as in Table 4, but runs the regressions in differences and excludes respondents who do not have a *claiming age* answer in all three surveys (that is, it excludes observations for panelists who did not answer the claiming age question in either of the WDPK surveys). In this way, the model is comparable to that using the posterior measure.

Column 3 presents the results with the contemporaneous measure. The coefficient is 0.198, which, not surprisingly, is very similar to the result from the fourth column of Table 4. When using the posterior measure, however, the coefficient halves to about 0.10 -and becomes statistically insignificant-, which suggests at least some decay of the impact of the terminology. Particularly of interest is the persistence of the effects among the groups where the effects had been strongest. As can be seen in the second to last panel, the effect of the alternative terminology among those with low

levels of financial literacy remains statistically significant and almost unchanged when using the posterior survey.^{14,15}

Overall, the analysis of these subsequent datasets indicates a strong persistence of the effect on knowledge and a weaker persistence of the effects on claiming intentions.

E. Stated Preference for Terminology

In addition to its effects on knowledge and claiming intentions, we found survey respondents prefer the alternative terms and feel that they understand them better. After the initial experiments, we asked whether respondents preferred “Early Eligibility Age” or “Minimum Benefit Age”, and “Full Retirement Age” or “Standard Benefit Age”. Next, respondents were asked to compare the clarity of two equivalent statements, one using the term “Delayed Retirement Credits” and the other using the “Maximum Benefit Age term as shown below:

Statement A. “Individuals over 66 or 67 (depending on year of birth) can earn Delayed Retirement Credits by delaying claiming Social Security up to age 70, regardless of whether they are still working or not”

¹⁴ As before, it is important to keep in mind that the results presented here are on the differences between the two terminology groups. The fact that the persistence of the effect of the terminology is high among the less financially literate, does not imply that the persistence of the information treatment is higher among them, just that the difference across terminology groups persists.

¹⁵ For completeness, we linked our data with another UAS surveys that included questions on claiming intentions that was fielded after our experiment. The “SSA behavioral survey”, UAS101, was an experiment conducted about 11 months after ours. The purpose of that experiment was to study how much beneficiaries value the survivors benefit (<https://www.socialscisearch.org/trials/2941/history/29694>). That survey also included a question asking for the expected claiming age. Since the treatments in that experiment are randomized independently of our treatment, we are also able to use this variable as an outcome in our results. When using that variable, we find a coefficient of 0.196, (p-value of 0.153) for the overall sample, which implies a substantially higher persistence of the effects (results available upon request).

Statement B. “Individuals over 66 or 67 (depending on year of birth) can delay claiming Social Security and have their benefits increase up to the Maximum-Benefit Age (70), regardless of whether they are still working or not.”

The first column of Table 9 shows that Minimum Benefit Age was preferred to Early Eligibility Age by 61 percent to 39 percent; Standard Benefit Age to Full Retirement Age by 52 percent to 48 percent. Forty-six percent of respondents thought the statement with the term Maximum Benefit Age was clearer than the statement using Delayed Retirement Credits, while only 10 percent thought the opposite; 34 percent said both were equally clear and 11 percent said neither was clear.

Some status quo bias is apparent, as preferences for the current terms were higher among respondents initially exposed to them than those who had been exposed to the alternative terms. That is, the percentage who stated a preference for Early Eligibility Age, Full Retirement Age, and Delayed Retirement Credits was higher in the control group than in the treatment group. This can be appreciated by comparing columns two and three. However, even accounting for this, even those who had not been initially exposed to the alternative terms found Maximum Benefit Age significantly clearer than Delayed Retirement Credits, and close to half preferred Minimum Benefit Age to Early Eligibility Age. Among those in the *alternative terms* group, a clear majority preferred all of the alternative terms. Given the status quo bias, it is conceivable that the preferences for the alternative terms would become more pronounced if the alternative terminology was adopted in a broad range of dissemination materials.

IV. Conclusions

The terminology currently used to explain the trade-offs in the claiming decision does not help people to adequately understand their options and may be leading some people to claim Social Security retirement benefits earlier than optimal. Our findings show that a very simple intervention – slight

modifications of a few key words – can improve individuals’ understanding of the Social Security retirement claiming decision problem, and, as a result, change their intended claiming and retirement ages. Furthermore, at least some of these effects can persist over time. A key strength of this study is that we can experimentally demonstrate the impact of such an intervention in a relatively realistic setting with a sample of adults representative of the actual target population.

These behavioral changes could come about either because the revised terms make it easier to understand the incentives embedded in the benefit structure, or because of the increased saliency of the gains from delaying claiming. One limitation of this work is that the study is neither designed nor powered to differentiate between these two plausible mechanisms, though they do show that the alternative terminology leads to persistently improved understanding.

It is feasible to roll out this intervention uniformly at the national level, to immediate effect – improving clarity for millions of people, perhaps leading to improved decisions – while incurring only set-up costs. As such, it is likely to be cost-effective when compared to other practices such as mailing individual Social Security Statements.

The actual magnitude of the effect of changing the terminology in “real life” is unknown. The effect on intended claiming age may translate into a smaller effect on actual claiming age, due to constraints not accounted for in this experiment. Yet it is conceivable the effects will be larger in practice. As we show, people better understand the trade-offs as information becomes clearer – and better understanding likely leads to better decision-making. Also, this effect may be amplified through repeated exposure to information from the SSA itself as well as other government agencies, NGOs such as AARP, and media providing education about claiming Social Security benefits, since all of them follow the SSA in terms of the terminology applied. Therefore, the effects of the new terms would be larger, reflecting multiple exposures at different points in time and through different

channels. The ultimate effect of the information would manifest not only from direct exposure, but also from indirect exposure as the cascade effects of social learning are likely to reinforce the direct impact of the initial change, especially if it reduces the amount of inaccuracies and erroneous information that can be passed along when people misunderstand the original information. Overall, the results of this study suggest micro-changes in information policy can have measurable effects on millions of adults' retirement decision-making and, potentially, on their financial security.

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Table 2. Demographic Characteristics

Characteristics	Current Terms	Alternative Terms	P-value of difference
Age	45.060	44.821	0.546
Male	0.402	0.432	0.079
Less than high school	0.032	0.028	0.453
High School graduate	0.188	0.195	0.644
Some college	0.376	0.384	0.637
College graduate or more	0.403	0.394	0.563
White	0.844	0.860	0.212
Black	0.112	0.095	0.105
Hawaiian/Pacific Islander	0.013	0.009	0.215
American Indian	0.056	0.056	0.915
Hispanic	0.103	0.109	0.585
Currently working	0.825	0.819	0.613
Unemployed (looking)	0.070	0.076	0.535
Retired	0.043	0.043	0.941
Expected Retirement Age	65.85	65.57	0.056
Miss Expected Retir Age	0.198	0.180	0.185
Expected Claim Age (Baseline)	65.826	65.756	0.425
Miss Expected Claim Age	0.508	0.495	0.460
Basic Knowledge SS Index (Baseline)	6.572	6.611	0.472
SS Claim Age Knowledge Index (Baseline)	1.505	1.494	0.834
Self-reported Health (1-5)	2.398	2.409	0.730
Cognitive score	51.05	51.32	0.357
Financial Literacy	14.27	14.27	0.992
Has tried to develop retirement plan	0.56	0.57	0.446
Ever sought information about ret. planning	0.13	0.12	0.281
Total Earnings (in \$)	45,400	44,400	0.656
Total Wealth (in \$)	251,402	245,098	0.793
Social Security Literacy Score	4.909	4.955	0.308
Observations	1,678	1,727	

Unweighted means. Test that all baseline variables jointly predict treatment status has a p-value of 0.89)

Table 3. Impacts of SS Terminology on Social Security Knowledge

Dependent Variable	Contemporaneous survey N=3240	WDPK (posterior) N=2252
Correct Answers to Test Questions		
Proportion correct	0.019*** (0.006)	0.016** (0.008)
Benefits affected by claiming age {T/F}	0.023** (0.010)	0.020* (0.011)
Benefits adjusted for inflation {T/F}	-0.002 (0.017)	-0.017 (0.019)
Benefits have to be claimed at retirement {T/F}	0.024** (0.011)	0.009 (0.014)
Benefit amount is the same if claim at 63 or 64 {T/F}	-0.012 (0.015)	- -
Claiming at 69 results in higher monthly benefit{T/F}	0.021 (0.015)	- -
Earliest age for receiving retirement benefits	0.023 (0.015)	0.007 (0.020)
Vignette: % increase in benefit for delaying claiming at 63 {multiple option}	0.022 (0.018)	0.039* (0.020)
Vignette: claiming and working at 68 {multiple option}	0.050** (0.018)	0.038** (0.020)

Each row represents separate regression equations. In Panel A, the dependent variables of interest are whether a question was answered correctly (or, in the case of first row, the average number of correct answers). The independent variable is the treatment status dummy (a dummy for *alternative terms* treatment). Models include baseline levels of Social Security as controls (pre-experiment)

Table 4. Impacts of SSA Terminology on Expected Claiming Age

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	All	Men	Women	All	Men	Women
Alternative terms	0.145 (0.090)*	0.331 (0.142)**	0.009 (0.123)	0.201 (0.081)**	0.279 (0.121)**	0.142 (0.109)
Controls	No	No	No	Yes	Yes	Yes
Observations	3,239	1,352	1,887	3,239	1,352	1,887
R-squared	0.001	0.004	0.000	0.239	0.282	0.212
Mean claiming age	66.49	66.52	66.46	66.49	66.52	66.46

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Independent variable is age at which respondent plans to claim Social Security retirement benefits. . Controls include baseline retirement and claiming age, demographic controls (age, gender, race, ethnicity, and highest education achieved) and other controls (labor force status dummies, and household income).

Table 5. Impacts of SSA Terminology on Expected Retirement Age

VARIABLES	(1) All	(2) Men	(3) Women	(4) All	(5) Men	(6) Women
Alternative terms	0.237 (0.174)	0.683 (0.275)**	-0.106 (0.225)	0.304 (0.166)*	0.635 (0.261)**	0.061 (0.214)
Controls	No	No	No	Yes	Yes	Yes
Observations	3,236	1,348	1,888	3,236	1,348	1,888
R-squared	0.001	0.005	0.000	0.100	0.109	0.101
Mean claiming age	66.64	66.92	66.45	66.64	66.92	66.45

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Independent variable is age at which respondent plans to retire Controls include baseline retirement and claiming age, demographic controls (age, gender, race, ethnicity, and highest education achieved) and other controls (labor force status dummies, and household income).

Table 6. Impacts of SS Terminology on Recommended Claiming Age to Fictional Characters

VARIABLES	(1) vignette average	(1) vignette average	(1) vignette average	(2) vignette1	(3) vignette2	(4) vignette3
	All	Men	Women	All	All	All
Alternative terms	0.171 (0.066)***	0.191 (0.101)*	0.160 (0.086)*	0.178 (0.089)**	0.307 (0.083)***	0.039 (0.088)
Observations	3,230	1,346	1,884	3,219	3,227	3,227
R-squared	0.061	0.080	0.050	0.038	0.050	0.030
mean	67.03	66.98	67.06	66.10	67.48	67.50

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The dependent variable is the age at which vignette characters should claim Social Security benefits. Regressions include: baseline retirement and age, the expected retirement age before the respondent received the information treatment, demographic controls (age, gender, race, ethnicity, and highest education achieved), and other controls (labor force status dummies and household income).

Table 7. Heterogeneity of the Terminology Impacts on Expected Claiming Age

Panel A. Interaction with Financial Literacy			
Financial literacy index	Range: 4 - 20	Mean = 14.3	Standard Deviation = 2.9
Alternative terms	Financial Literacy Index	Alternative Terms X Financial Literacy Index	
1.154***	0.091***	-0.066**	Observations = 3,233
(0.423)	(0.021)	(0.029)	R ² = 0.17
Panel B. Interaction with Baseline Social Security Knowledge			
Social Security Knowledge Simple Index	Range: 1-9	Mean = 6.6	Standard Deviation = 1.4
Alternative terms	SS-Knowledge Index	Alternative Terms X SS-Knowledge Index	
0.888**	0.087**	-0.099	Observations = 2,972
(0.406)	(0.044)	(0.060)	R ² = 0.17
Panel C. Interaction with cognitive ability			
Cognitive ability index	Range: 33-70	Mean = 51.2	Standard Deviation = 8.6
Alternative terms	Cognitive ability	Alternative Terms X Cognitive ability index	
0.805	0.038***	-0.012	Observations = 3,228
(0.513)	(0.007)	(0.010)	R ² = 0.17
Panel D. Interaction with years of education			
Years of education	Range: 3-20	Mean = 14.7	Standard Deviation = 2.3
Alternative terms	Financial Literacy Index	Alternative Terms X Years of education	
1.224**	0.152***	-0.069*	Observations = 3,239
(0.551)	(0.026)	(0.037)	R ² = 0.17
Panel E. Interaction with household wealth			
Logarithm of household wealth	Range: 1.8 - 16.1	Mean = 14.7	Standard Deviation = 1.9
Alternative terms	Log Household Wealth	Alternative Terms X Log Household Wealth	
1.526***	0.014	-0.113**	
(0.579)	(0.036)	(0.050)	

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Independent variable is age at which respondent plans to claim Social Security retirement benefits. Controls include baseline retirement, missing baseline retirement, demographics, education, and labor force status dummies. Means and standard deviation are unweighted.

Table 8. Impact of Terminology on Claiming Intentions on Posterior Surveys.

Dependent Variable		Does not know intended claiming age	Does not know spouse intended claiming age	Claiming Age Self (contemp)	Claiming Age Self (Posterior)
Sample		Full	Full	“Balanced panel”	“Balanced panel”
Survey of dependent variable		Posterior	Posterior	Contemporaneous	Posterior
All Respondents	Coef	-0.030	-0.027	0.198	0.099
	s.e.	(0.021)	(0.026)	(0.162)	(0.153)
	N	2285	1498	892	877
Male	Coef	-0.008	0.018	0.162	0.023
	s.e.	(0.031)	(0.037)	(0.217)	(0.202)
	N	978	732	456	450
Female	Coef	-0.040*	-0.064*	0.243	0.195
	s.e.	(0.024)	(0.036)	(0.243)	(0.231)
	N	1307	766	436	427
Low Financial Literacy	Coef	-0.038	-0.060	0.615**	0.624**
	s.e.	(0.031)	(0.040)	(0.295)	(0.263)
	N	1045	598	306	297
High Financial Literacy	Coef	-0.019	0.009	0.008	-0.146
	s.e.	(0.027)	(0.033)	(0.192)	(0.189)
	N	1227	893	580	574

[†] Models under the Balanced Sample are regressions where the dependent variable is in differences. The “Balanced Panel sample” includes only observations who provided a response to the claiming age intentions in both a prior and posterior survey.

Each row represents separate regression equations. The independent variable is the treatment status dummy (a dummy for *alternative terms* treatment). Models include baseline levels of Social Security claiming and retirement intentions as controls (pre-experiment). *** p<0.01, ** p<0.05, * p<0.1

Table 9. Preferred Terms by Survey Respondents.

	All	Current terms	Alternative terms
	%	%	%
Preferred term for earliest claiming age (62)			
(1) Early Eligibility Age	39.5	51.8	27.6
(2) Minimum Benefit Age	60.5	48.2	72.4
p-value of difference (1) vs (2)	0.000	0.191	0.000
Preferred term 66-67 age			
(1) Full Retirement Age	48.4	57.1	40
(2) Standard-Benefit Age	51.6	42.9	60
p-value of difference (1) vs (2)	0.059	0.000	0.000
Clearer statement for later claiming ages			
(1) Statement using Delayed Retirement Credits	9.7	12.4	7.1
(2) Statement using Maximum Benefit Age	46	42	49.8
(3) Neither	10.8	10.4	11.2
(4) Both are equally clear	33.5	35.2	31.9
p-value of difference (1) vs (2)	0.000	0.000	0.000

I. Online Appendix 1: Questionnaire

INTRODUCTION TO SURVEY

We are interested in understanding how and when people would like to start receiving their Social Security retirement benefits. In this survey, we sometimes ask questions that are difficult to answer exactly. Please take time to consider the questions and give us your best estimate even if you do not know the exact answer. Having your best estimate will be very helpful to us. Thank you very much for your participation!

Q.1.1. Social Security status

In this survey, the term "Social Security benefits" includes any benefits that you yourself receive or will receive from the Social Security program in retirement, including retired worker, disability, spouse, or survivor benefits. Which of the following statements best describes you?

1 I am currently receiving Social Security benefits.

2 I don't receive Social Security benefits now, but I will be eligible to receive them in the future.

3 I will never be eligible under current law to receive Social Security benefits, because I have not worked in a job where I paid Social Security taxes

IF SS_STATUS = 1 END THE SURVEY

IF SS_STATUS = 2 GO TO Q.1.2.

IF SS_STATUS = 3 THEN | |

Although you currently do not expect to be eligible to receive Social Security benefits, please assume in the following questions that you are. Please imagine that you would get a Social Security benefit of \$1,500 per month if you start receiving Social Security benefits at age 62.

GO TO SECTION II

Q.1.2. Did you have any earnings in the last year?

1 Yes

2 No

IF YES = GO TO Q.1.3

IF NO = GO TO Q.1.4

Q.1.3. What were your total earnings last year?

GO TO Q.1.5

Q.1.4. Please enter your earnings for the last year in which you worked. [Enter 0 if you have never worked]

Q.1.5. At what age do you plan to start receiving Social Security retirement benefits? [Please give an approximate age even if you do not know]

→ if outside of 62 to 70 range. → Probe: You have stated that you would start claiming Social Security benefits at age [], do you want to revise your response?

1. Yes → Specify age [] -> Go to Section II
2. No -> continue → Go to Section II

SECTION II: RANDOMIZED EXPERIMENT (INFORMATION TREATMENT)

Randomization 1: Randomize 1/4 into Treatment A/B/C/D

Randomization 2: Randomize 1/4 into Treatment 1 and 2 (see description in the following section) and a and b.

INTRODUCTION

Now we will show you some basic information about claiming Social Security retirement benefits. Please read with care. This information may or may not influence your thoughts on when you would like to start claiming benefits.

[ASSIGNED TREATMENT/INFORMATION SCREEN IS SHOWN HERE – SEE CHAPTER 6 OF THIS DOCUMENT]

[NOTE: THE SECTIONS THAT FOLLOW AIM TO CAPTURE RESPONDENTS' VIEWS AFTER THEY RECEIVE THE INFORMATION TREATMENT]

SECTION III. HYPOTHETICAL CLAIMING AGE FOR SELF

In the next few questions, we are going to ask you to make a number of choices about Social Security benefits.

Q.3.1. Given the information you have just seen, at what age do you plan to start receiving Social Security benefits?

Q.3.2. How confident do you feel that this decision is right for you?

- 1 Very confident
- 2 Somewhat confident
- 3 Not too confident
- 4 Not at all confident

Q.3.3. At what age do you plan to fully retire, i.e. stop working? Note: This can be different than the age you plan to start Social Security benefits.

Q.3.4. How confident do you feel that this decision is right for you?

- 1 Very confident
- 2 Somewhat confident
- 3 Not too confident
- 4 Not at all confident

SECTION IV: KNOWLEDGE/UNDERSTANDING QUESTIONS & SELF-EFFICACY ON SOCIAL SECURITY CLAIMING BEHAVIOR

The following questions ask about aspects of the Social Security program. Please choose whether you feel you are very knowledgeable, somewhat knowledgeable, not too knowledgeable, or not at all knowledgeable about each aspect.

Q.4.1_intro. How knowledgeable do you feel about how the Social Security programs work? Do you feel very knowledgeable, somewhat knowledgeable, not too knowledgeable or not at all knowledgeable?

- 1 Very knowledgeable
- 2 Somewhat knowledgeable
- 3 Not too knowledgeable
- 4 Not at all knowledgeable

Group of questions presented on the same screen

How knowledgeable do you feel about the following aspects of the Social Security retirement program? Do you feel very knowledgeable, somewhat knowledgeable, not too knowledgeable or not at all knowledgeable?

Q.4.2a. The age when can you first claim Social Security retirement benefits

- 1 Very knowledgeable
- 2 Somewhat knowledgeable
- 3 Not too knowledgeable
- 4 Not at all knowledgeable

Q.4.2b. The age after which the amount of your monthly Social Security retirement benefit no longer increases

- 1 Very knowledgeable
- 2 Somewhat knowledgeable
- 3 Not too knowledgeable
- 4 Not at all knowledgeable

Q.4.2c. (How much your monthly Social Security retirement benefits will be)

How much your monthly Social Security retirement benefits will be

- 1 Very knowledgeable
- 2 Somewhat knowledgeable
- 3 Not too knowledgeable
- 4 Not at all knowledgeable

Q.4.2d. (How your benefits change if you claim Social Security benefits sooner or later)

How your benefits change if you claim Social Security benefits sooner or later

- 1 Very knowledgeable

- 2 Somewhat knowledgeable
- 3 Not too knowledgeable
- 4 Not at all knowledgeable

Group of questions presented on the same screen

Q.4.3_intro. (true/false statements intro)

Next, please tell us if you believe the following statements to be true or false. If you don't know for sure, please give us your best guess as to what the correct answer might be.

Q.4.3a. (Social Security monthly benefits are not affected by the age at which someone starts claiming.)

Social Security monthly benefits are not affected by the age at which someone starts claiming.

- 1 True
- 2 False

Q.4.3b. (Social Security benefits are adjusted for inflation.)

Social Security benefits are adjusted for inflation.

- 1 True
- 2 False

Q.4.3c. (Social Security benefits have to be claimed as soon as someone retires.)

Social Security benefits have to be claimed as soon as someone retires.

- 1 True
- 2 False

Q.4.3d. (Social Security monthly benefits are the same if someone starts claiming at 63 or 64)

The amount of one's Social Security monthly benefits is the same whether someone starts claiming at 63 or 64.

- 1. True
- 2. False

Q.4.3e. (Social Security monthly benefits are higher if someone starts claiming at 69 instead of at 68)

Claiming at age 69 instead of at age 68 results in a permanently higher Social Security monthly benefit.

- 1. True
- 2. False

End of subgroup of questions

Q.4.4. To the best of your knowledge, what is the earliest age at which a person can start receiving Social Security retirement benefits?

[numeric answer]

Q.4.5. Imagine an individual, Mr. John Smith, retired from work. He is 63 years of age today. John expects his monthly Social Security benefit would be about \$2,000 if he claims now. How much should he expect his monthly benefits to be if he decides to wait another year and claim when he is 64 years old?

- 1 It would stay the same
- 2 Approximately \$2,120 (6% higher)
- 3 Approximately \$2,020 (1% higher)
- 4 Approximately \$2,300 (15% higher)

Q.4.6. Imagine an individual, Ms. Helen Johnson, who is 68 and earning \$50,000 per year from her full-time job. She has never claimed Social Security benefits but has found out that she will be entitled to a \$1,600 monthly retirement benefit if she starts claiming when she turns 70. Which statement is correct?

- 1 She cannot claim before 70 unless she stops working
- 2 She can start claiming now, and should start claiming right away since her monthly benefit will not increase by waiting longer
- 3 She should start claiming at 72 since her benefit at that age will be higher than if she claims earlier
- 4 She can claim now, but her benefit will be lower than if she waits until she turns 70

SECTION V: VIGNETTES FOR CLAIMING DECISIONS

We will now give you some additional examples of individuals with different retirement situations. We would like to know when you think the following individuals should start claiming Social Security benefits. Unlike the previous examples, in the following examples there are no single “correct” answers. Please assume that all amounts shown are after tax (i.e., you would not owe any tax on any of those benefits).

Q.5.1. Mr. Pete Cox is considering whether to retire and start claiming Social Security benefits and is 62 years of age. He is in good health now and expects to be in good health for the foreseeable future. He currently works and earns a monthly salary of \$2,300, but could also receive a monthly benefit of about \$2,000 if he stops working and starts claiming Social Security retirement benefits now.

If you were Mr. Pete Cox, at what age would you start claiming your Social Security retirement benefits?

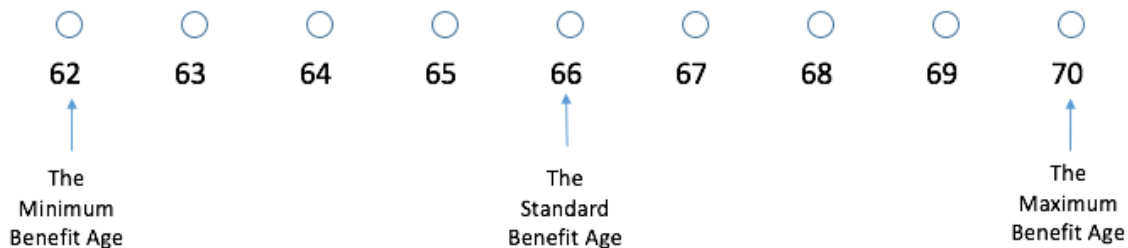
[NOTE: THE RESPONSE OPTIONS BELOW ARE SHOWN ONLY AS AN EXAMPLE. ACTUAL OPTIONS DIFFER BY RANDOMIZATION GROUP – use relevant PowerPoint]



Q.5.2. Imagine Ms. Mary Hopkins, who is 61, in good health and working full-time. She is not yet eligible to claim Social Security retirement benefits but has found out that she will be entitled to a \$2,000 monthly benefit if she starts claiming at 62 - (when she is first entitled to her Social Security retirement benefits/the Early Eligibility Age/the Minimum Benefit Age). Her current job pays her about \$3,500 per month (after taxes). She supports her teenage grandchild, who lives with her. She has no retirement savings.

If you were Mary Hopkins, at what age would you start claiming your Social Security retirement benefits?

[NOTE: THE RESPONSE OPTIONS BELOW ARE SHOWN ONLY AS AN EXAMPLE. ACTUAL OPTIONS DIFFER BY RANDOMIZATION GROUP – use relevant PowerPoint]



Q.5.3. Imagine Mr. Gary Osborne, a single man approaching age 62 and planning his retirement. Mr. Osborne currently earns \$55,000 a year after tax and has a 401(k) plan that would give him \$1,000 per month after he retires. The sliding scale below shows you how much his monthly benefit from Social Security would be depending on what age he decides to start claiming.

At what age do you think he should start claiming his Social Security retirement benefit?



SECTION VI: PREFERRED TERMS

[Randomize between the following set of terms –options A and B.]

Q.6.1. Individuals can start claiming Social Security retirement benefits when they turn 62, but the monthly benefit amount will be lower compared to claiming later. Which term would you prefer be used to describe this age?

- 1 Early Eligibility Age
- 2 Minimum-Benefit Age
- 3 None. Both are confusing
- 4 Both are equally suitable

Q.6.2. According to Social Security rules, people are entitled to ‘unreduced’ retirement benefits if they start these benefits at age 66 or 67, depending on the year of birth. Which term do you think better captures the 66-67 age for claiming Social Security retirement benefits?

- 1 Full Retirement Age
- 2 Standard-Benefit Age
- 3 Neither.
- 4 Both are equally suitable

Q.6.3. Which of the following statements seems clearer to you?

- 1 Individuals over 66 or 67 (depending on year of birth) can earn Delayed Retirement Credits by delaying claiming Social Security up to age 70, regardless of whether they are still working or not.
- 2 Individuals over 66 or 67 (depending on year of birth) can delay claiming Social Security and have their benefits increase up to the Maximum-Benefit Age (70), regardless of whether they are still working or not.
- 3 Neither.
- 4 Both are equally clear.

II. Online Appendix 2. Assessing the Validity of Intended Claiming Ages

The objective of this appendix is to analyze whether intended claiming ages, obtained through survey responses, can be expected to be good proxies for actual claiming ages, derived from administrative data.

First of all, we compare how intended claiming ages measures (pre-intervention) compare with actual claiming ages in the population. One obvious problem for making this comparison is that existing data from actual claiming ages necessarily correspond to different cohorts than the survey-based intended claiming ages (for recent survey respondents). Individuals completing surveys recently about when they are likely to start claiming are from more recent cohorts than individuals who have already reached the ages when they can make the decision to claim. Munnell and Chen (2015) show that there are substantial differences in claiming behavior between recent and older cohorts of claimants, with the trend pointing towards fewer people claiming at the Early Eligibility Age of 62.

Despite these differences, we make the comparisons in Figure A.2.1 and show some important similarities and differences between actual and intended claiming ages. The first series shown in the figure, is the age distribution of men claiming retired-worker benefits in 2013 as reported by Munnell and Chen. This distribution shows a higher than 40% of people claiming at 42. However, these numbers combine individuals from several cohorts. Through their analysis, they estimate that among the latest cohort, the percentage who claimed at 62 would be reduced to 35.6%. The second series (in orange) shows this number and estimates the percentage claiming at other ages based on that analysis.¹ The third series is calculated using the “intended claiming age” variable in the first round of the “What do People Know about Social Security” survey in the UAS (UAS-66). It shows the weighted distribution of responses to the question of when individuals would plan to start claiming Social Security retirement benefits. For those who had already become age-eligible for claiming by 2013, the Full Retirement Age was 65 or 66, depending on their cohort. For survey respondents, on the other hand, the Full Retirement Age lies between 66 for the older respondents and 67 for the younger ones. Since the FRA ranges is different in the “actual” and “intended” cohorts, we combine the respondents to those age groups (65-67) in all the series.

We show that the “intended” and “actual” distributions have some similarities but also some important differences. Both in the distributions based on “actual” and “intended” claiming ages, it is the case that the most frequent ages are 62 –the EEA- and the ages between 65 and 67, which encompass the Full Retirement Age. The proportion who were 62 and eligible to claim in 2013, who did so, was 35.6% according to the analysis of claiming data by Munnell and Chen (2015). This proportion is 10 percentage points higher than the average intention among the younger cohorts as revealed by survey data. At least part of this difference may be due to true differences among the cohorts, which would be consistent with the reported downward trend in early claiming. But part of it may be due to the inherent differences between the intended and

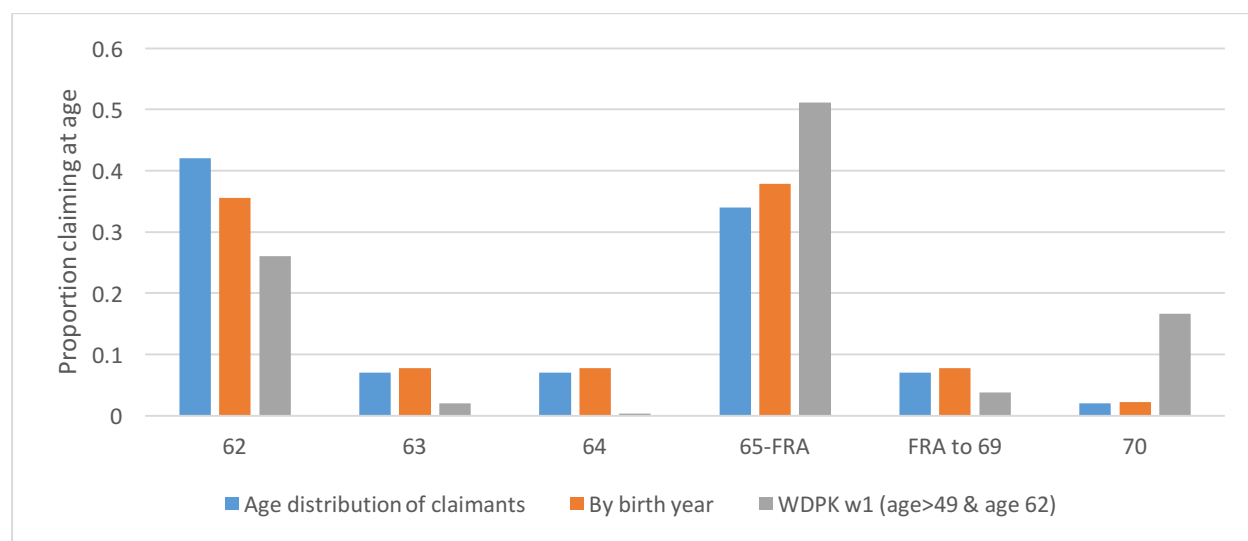
¹ The series takes the 35.6% value estimated by Munnell and Chen (2015) for those eligible to claim at 62, and then assumes that the remaining 64.4% conditionally distribute throughout the 63-70 age ranges as in the “Age distribution of claimants” series.

actual claiming variables, either because some respondents do not reveal their true intentions, or because conditions change and some people claim earlier than intended.

Another similitude is the large proportion claiming at around the Full Retirement Age. This number lies around 35% in the actual claiming data, and about 50% within the intention data from the survey. The 15 pp difference may be explained by a number of factors. Among them, some people may truly intend to wait to 65 or their FRA, but then receive an economic shock and claim earlier for liquidity constraint reasons. Others may not truly know when they are going to claim and just respond “65” in surveys as that is a common retirement age.

Another interesting difference is the very small percentage of respondents saying they intend claim at ages 63 and 64, and 68 to 69. This may be intuitive since these are not round numbers nor salient for any other reasons. Hence very few people may plan to claim at that age when thinking about it from years or decades in advance. In practice, however, people who may have expected to claim at 65, their FRA or at 70, may change their plans and actually claim a year or two earlier or later. Likewise, shocks may explain the lower actual than intended claiming at 70, though this may also reflect “true” differences across cohorts given the trends and changes in policy that has resulted in more recent cohorts claiming at later ages, and the real improvement in the annuity values of delaying caused by increases in life expectancies

Figure A.2.1. Comparison of Intended and Actual Claiming Ages for Men



Note: Figure shows claiming age distribution according to three methods. The first series, “Age distribution of claimants”, is the distribution reported by Munnel and Chen (2015). The second series adapts the first series in two ways: it assigns the proportion claiming at 62 using the proportion of eligible 62-year olds who claimed in 2013, as calculated by Munnel and Chen. It then uses the proportions in the first series multiplied by a factor to reflect the larger proportion of those not claiming at 62. The third series, in gray, is intended claiming ages from the WDPK-w1 survey in the UAS (UAS66), weighted to representative of all men nationally.

More than the similarities of its distribution with those of actual claiming, what makes it appealing as an outcome variable for an experiment such as ours, is the finding that intended claiming ages correlate to other variables in expected ways. Even though intended claiming ages do not translate exactly into actual claiming ages, to the extent that it is correlated to other variables in the same way as actual claiming ages do, it is indicative of having enough of a “signal” and makes us think that changing intentions may indeed translate into changes in actual claiming behavior.

Given that annuitizing is only a good idea for those who can expect to live long enough after starting to receive benefits, it should be the case that those with higher (subjective) life expectancy are those with higher expected claiming ages. Indeed, Goda et al (2018) find that early (actual) claiming is strongly related to subjective survival probabilities.² We analyze this relationship by linking the data of the intended claiming behavior used above with the questions on subjective survival probability to age 75 on the HRS surveys in the UAS³. Table A.2.1 shows the results of estimating a regression of intended claiming age against the subjective probability of living to age 75. As expected, it shows a strongly significant positive effect. This suggests that those who would expect to live long enough to take advantage of the annuity are also those who expect to acquire it (by claiming later). The result survives when adding control variables (column 2). Columns 3 and 4 show that the effect is present both among the relatively younger population (under 50) and the older ones (50 to 62).

Goda et al (2018) also find that good health is a good predictor of later claiming, as expected given that having good health is related to higher probabilities of having long lives. We use an indicator of good health, constructed as having reported health to be “good”, “very good”, or “excellent”. As in the case of survival probabilities, we find a statistically significant and robust relationship with intended claiming age in the expected direction, which is also fairly consistent across age groups.

Table A.2.1, Determinants of intended claiming age and other factors.

Panel A . Subjective probability of survival to age 75				
Coef	0.009	0.007	0.005	0.016
S.E.	(0.001)***	(0.001)***	(0.002)***	(0.003)***
Obs	3,179	3,162	1,953	1,021
R ²	0.017	0.052	0.011	0.040
Panel B .Self-Reported Health Indicator of “good health”				
Coef	0.386	0.208	0.313	0.437
S.E.	(0.111)***	(0.113)*	(0.137)**	(0.217)**
Obs	3,150	3,142	1,833	1,017
R ²	0.005	0.048	0.008	0.009
Panel C . Subjective probability of survival to age 75				
Coef	0.023	0.024	0.019	0.039
S.E.	(0.011)**	(0.011)**	(0.015)	(0.022)*
Obs	1,136	1,134	615	381
R ²	0.008	0.075	0.010	0.014

² See their Table 3 “Relationship between early claiming and individual characteristics” in Goda et al (2018).

³ See the UAS Comprehensive File, available at uasdata.usc.edu

Sample	All	All	Under 50	Between 50 and 62
Controls	Age, Age squared	Demographic and labor status	Age and age squared	Age and Age squared

Note: Different Panels show separate regressions. Intended claiming ages are derived from the survey UAS16: “What do People Know about Social Security” wave 1.

Finally, for married men, we estimate the age difference between the respondent and his wife. Given that claiming age affects the benefits that his spouse can claim both from spousal benefit and survivor benefits, and that the younger the wife is the more time she would have to recoup the investment implicit in the husband’s delayed claiming, it should be the case that the larger the difference in ages (respondents minus wife’s), the larger the incentive to claim later. We do this only for married men, as this reasoning only applies to the primary earner in the couple, which is in a majority of cases the husband, particularly among our married sample. We find that it is indeed the case that the age difference is a significant predictor of intending claiming ages, and that the relationship is robust to adding control and breaking by age groups.

Overall, the analysis in this appendix shows that intended ages behave as they should, at least in terms of having significant relations with the variables that are expected (and have been shown to be) determinants of actual claiming ages, and in showing a distribution that has (at least some) similarities to that of actual claiming ages.

III. Online Appendix 3. Further Results.

We find that the impact of changing the retirement terms used by Social Security was not sensitive to the type of information we provided. Table A2.1 shows the impact of the alternative terms does not occur exclusively under one of the types of information treatment. The interaction term between the second information treatment and the alternative term is not statistically significant for any of the outcome variables we are testing.

Table A.3.1. Interaction Between Information Treatment and Alternative Terms

VARIABLES	(1) claiming age	(2) vignette average	(3) correct avg
Alternative terms	0.09 (0.129)	0.083 (0.095)	0.01 (0.009)
Information treatment 2	0.065	-0.125	0.008

	(0.130)	(0.096)	(0.009)
Alternative terms X Information treatment 2	0.071 (0.182)	0.143 (0.134)	0.013 (0.013)
Observations	3,222	3,213	3,223
R-squared	0.062	0.046	0.214
mean	66.49	67.03	0.745

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Information treatment 2 indicates whether respondent received the longer and more intuitive explanation that uses a graph. *Alternative terms X Information treatment 2* is the interaction with the *alternative terms* treatment. Regressions include demographic controls (age, gender, race, ethnicity, and highest education achieved), and labor force controls.

Table A.3.2. Impact of Alternative Terms on the Difference between Retirement and Claiming Age

VARIABLES	(1) Retirement minus Claiming	(2) Retirement minus Claiming	(3) (Retirement=Claiming)	(4) (Retirement=Claiming)
Alternative terms	0.089	0.345	-0.016	-0.011
Sample	(0.162) All	(0.258) Men	(0.017) All	(0.026) Men
Observations	3,233	1,348	3,233	1,348
R-squared	0.000	0.001	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Information treatment 2 indicates whether respondent received the longer and more intuitive explanation that uses a graph. *Alternative terms X Information treatment 2* is the interaction with the *alternative terms* treatment. Regressions include demographic controls (age, gender, race, ethnicity, and highest education achieved), and labor force controls.

Table A.3.3. Demographic Characteristics among Sample with “Posterior” Responses

Characteristics	Current Terms	Alternative Terms	P-value of difference
Age	45.817	45.588	0.622
Male	0.417	0.448	0.119
Less than high school	0.030	0.024	0.350
High School graduate	0.188	0.184	0.816
Some college	0.379	0.384	0.827
College graduate or more	0.403	0.408	0.782
White	0.851	0.873	0.118
Black	0.113	0.088	0.042
Hawaiian/Pacific Islander	0.011	0.010	0.868
American Indian	0.051	0.059	0.427
Hispanic	0.071	0.092	0.050
Currently working	0.829	0.839	0.485
Unemployed (looking)	0.063	0.066	0.791
Retired	0.047	0.045	0.838
Expected Retirement Age	65.931	65.611	0.042
Miss Expected Retir Age	0.166	0.158	0.625
Expected Claim Age (Baseline)	65.859	65.739	0.270
Miss Expected Claim Age	0.465	0.443	0.266
Basic Knowledge SS Index (Baseline)	6.628	6.650	0.720
SS Claim Age Knowledge Index (Baseline)	1.563	1.538	0.675
Self-reported Health (1-5)	2.405	2.382	0.529
Cognitive score	51.432	51.802	0.287
Financial Literacy	14.453	14.409	0.698
Has tried to develop retirement plan	1.545	1.551	0.746
Ever sought information about ret. planning	0.139	0.129	0.481
Total Earnings (in \$)	46706	45515	0.624
Total Wealth (in \$)	281649	242884	0.161
Social Security Literacy Score	4.931	4.983	0.307
Observations	1231	1212	

Unweighted means. Test that all baseline variables jointly predict treatment status has a p-value of 0.38)

IV. References to the Appendix

- Goda, G. S., Ramnath, S., Shoven, J. B., & Slavov, S. N. (2018). The financial feasibility of delaying Social Security: evidence from administrative tax data. *Journal of Pension Economics & Finance*, 17(4), 419-436.
- Munnell, A. H., & Chen, A. (2015). "Trends in social security claiming". *Issue in Brief Center for Retirement Research at Boston College* (15-8).