Expectations and Information Frictions Within Couples: Evidence from a Sequential Survey of Spouses*

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Abstract

This paper combines descriptive and experimental evidence to examine how expectations align and information flows within couples. Using an online survey of 2,200 middle-aged U.S. married couples, we focus on expectations about Social Security benefits. We first document substantial misalignment: the correlation between spouses' expectations about a given partner's benefits is 0.70, below full agreement, and varies systematically with couple characteristics, reaching as low as 0.45 for couples with below-median earnings. To identify causal information spillovers, we implement a randomized information experiment paired with a sequential survey design in which one spouse receives targeted information and the other is surveyed later. Information provided to one spouse partially spills over to the other, with the effect on the untreated spouse about half that on the treated one. Spillovers are larger when communication barriers are low and the information is more valuable. Finally, the information treatment improves conditions for more efficient intra-household decision-making.

Keywords: information spillovers, expectations, household decisions, frictions, Social Security benefits, retirement

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1 Introduction

Many economic decisions—such as fertility, saving, labor supply, and retirement timing—are made jointly within households. In recent decades, economists have increasingly adopted the collective model of household decision-making, which recognizes that households consist of individuals with distinct preferences. A central assumption in this framework is complete information: partners are assumed to share information freely and, therefore, to hold identical expectations about future outcomes (e.g., Lundberg and Pollak 1996; Chiappori and Mazzocco 2017). Yet empirical evidence remains limited as to whether—and to what extent—spouses' expectations align, how alignment varies across couples, and which factors or frictions impede information flow within couples. This is the case even as survey-based expectations data have become increasingly available (Bachmann et al., 2023).

In this paper, we aim to fill this knowledge gap by conducting an online survey of 2,200 middle-aged married couples in the U.S., in which both spouses report their expectations about the same outcomes. We have four primary research objectives. First, we use these novel data to document the extent of alignment in expectations within couples. Second, we investigate which couple characteristics are associated with greater or lesser alignment. Third, we provide experimental evidence on information spillovers between spouses and investigate the factors that facilitate or hinder information flow by combining a randomized information treatment with a sequential within-household survey design. Finally, we explore whether the provision of information can improve conditions for joint decision-making. Our empirical strategy combines two complementary components that together trace both the stock and the flow of information within couples. The descriptive analysis provides a cross-sectional, ecologically valid snapshot of expectation alignment within couples, reflecting the cumulative outcome of repeated interactions, information acquisition, communication, and learning. The experimental analysis, in contrast, introduces information exogenously and provides a clean measure of short-run information transmission within couples, allowing us to isolate the mechanisms underlying information flow.

Our primary focus is on expectations about Social Security benefits. This is motivated by several factors. First, Social Security benefits are a crucial component of financial security in retirement in the United States, with half of those aged 65 and older receiving at least 50% of their income from Social Security benefits, and a quarter relying on it for at least 90% (Dushi et al., 2017). Second, there is widespread evidence of misinformed and uncertain expectations regarding individual Social Security benefits, as well as pen-

sions in other contexts (e.g., Mitchell 1988; Guiso et al. 2013; Liebman and Luttmer 2015; Caplin et al. 2022). Third, expectations and uncertainty about individual Social Security benefits have been shown to play an important role in retirement planning (e.g., Bottazzi et al. 2006; Delavande and Rohwedder 2011; Luttmer and Samwick 2018).[1] Fourth, decisions regarding savings and retirement timing are often made jointly by spouses (e.g., Blundell et al., 2016). Moreover, couples may adopt strategies to maximize lifetime Social Security wealth, so decision-making depends on beliefs about both partners' benefits. Taken together, these features make Social Security benefits an ideal domain for studying information transmission within couples.

We start with a descriptive analysis of expectations. First, we show that individual expectations deviate significantly from the estimates provided by the SSA's Social Security Quick Calculator (SS Quick Calculator) based on earnings. On average, respondents expect to receive $2,350 per month if they claim at age 67, while they anticipate their spouse's age 67 benefits to be $2,270. For both their own and their spouse's benefits, approximately 45% of respondents overestimate their expected benefits compared to the Quick Calculator estimate, while about 50% underestimate them. The remaining 5% report expectations within $50 of the calculator's projection, indicating that only a small fraction have expectations closely aligned with the calculator forecast.

We then assess the extent of within-couple alignment in expectations within the control group. Only 35% of couples agree within $100 when reporting expectations for the *same* spouse's benefit, while nearly half differ by more than $200. The correlation of expectations for a given spouse's monthly benefits is 0.70, well below perfect alignment. Importantly, this correlation is significantly lower than the test-retest correlation of 0.88 in a group that reports these expectations multiple times. Thus, we can rule out measurement error as the sole driver of this imperfect alignment.

We then examine which types of couples are more or less aligned. We find substantial heterogeneity in the degree of alignment. Correlations range from 0.45 among below-median-earnings couples to 0.84 among those where both spouses report above-median marital satisfaction. For most subgroups, correlations remain well below the test-retest benchmark of 0.88. Alignment is weaker among couples with lower relationship quality—those reporting lower marital satisfaction or greater disagreement about total household

[1] Similarly, Social Security policy features or reforms, which change people's expectations about future Social Security benefits, have been shown to play an important role in retirement decision-making (e.g., Liebman et al., 2009; Mastrobuoni, 2011; Coyne et al., 2024; Deshpande et al., 2024).

earnings—a pattern consistent with communication frictions. By contrast, alignment is stronger among higher-earning couples. Notably, imperfect correlation does not appear to stem from Social Security benefits being financially unimportant: couples for whom benefits are likely to be a major source of post-retirement income (i.e., couples with below-median earnings) do not exhibit stronger correlations in their expectations.[2]

Importantly, we confirm that this level of correlation is not exclusive to Social Security benefit expectations. Our findings reveal comparable correlations, ranging from 0.39 to 0.64, for other decision-relevant expectations, including aggregate outcomes such as the unemployment rate, inflation, and stock market price growth, as well as household-level variables like household spending and income growth.

We complement the descriptive analysis with experimental evidence on spousal information spillovers, offering direct insights into how exogenously-provided, decision-relevant information diffuses between spouses and shapes their expectations. We implement a randomized information intervention alongside a sequential survey design. Couples are randomly assigned to treatment or control. In the treatment group, the first ("index") spouse receives personalized forecasts of their own and their partner's future Social Security benefits, with no instruction or incentive to share this information. In the control group, the index spouse receives placebo information instead. The second ("secondary") spouse is invited to complete the survey only after the first has responded, allowing any diffusion to occur endogenously, as it would in the "wild." By comparing the Social Security expectations of secondary spouses in treated couples to those in control couples, we can identify the extent of within-household information spillovers.

The treatment leads the index spouses to revise their expectations about own and spouse's Social Security benefits substantially, reducing the absolute gap between expectations and the forecast—the "perception gap"—by an average of 22 percentage points (39% of the baseline gap). Subsequently, we investigate whether this information spills over to the secondary spouse. Consistent with some information diffusion, having a treated spouse leads to a secondary spouse having an absolute perception gap that is 10-12 percentage points smaller compared to those in the control group. Thus, almost half of the treatment effect on the index spouse spills over to the secondary spouse, a pattern observed for both the index

[2]An imperfect correlation by itself does not necessarily imply inefficiency. Couples, for example, may specialize where one spouse knows the benefits and makes financial decisions, and the other does not (rationally) invest in the acquisition of Social Security information. We can rule this out in our data, since we find that spouses tend to be similarly misinformed. That is, if one partner overestimates or underestimates benefits, the other is also likely to do the same.

and secondary spouse's benefits.

Theory suggests that information transmission depends on its perceived value and on the presence of communication or cognitive frictions, as well as potential strategic considerations. We outline a simple theoretical framework to illustrate the factors that may play a role in information spillovers within couples, which provides us with clear, testable hypotheses. Consistent with our framework, we find significant heterogeneity in information spillovers across key dimensions. Spillovers are larger in couples where the information is more valuable. Additionally, spillovers increase when the index spouse learns that their own or their partner's benefits are lower than expected. This finding contradicts strategic motives for concealing unfavorable information, which would predict that individuals might withhold bad news about themselves to maintain bargaining power. Instead, for many couples, the cost of not adjusting financial plans in response to lower-than-expected benefits may be high, incentivizing greater information sharing.[3] Importantly, spillovers are significantly smaller in couples with markers of communication frictions, such as disagreement about relationship quality or about household earnings. Finally, we find no role for cognitive frictions in information spillovers.[4]

Taken together, the descriptive and experimental evidence shows that information transmission within couples is incomplete, heterogeneous, and systematically related to relationship and economic characteristics. Our findings are consistent with a cooperative model of household decision-making subject to information frictions, in which sharing is more likely when potential gains from re-optimizing behavior are larger and communication barriers are relatively lower.

Last, we investigate whether the information treatment enhances conditions for better intra-household decision-making. For this purpose, we focus on the alignment in expected claiming ages for one spouse (that is, the distance between the age at which spouse A expects to claim and the age at which spouse B expects spouse A to claim). It is unlikely that a couple is optimizing their financial planning for retirement if one expects their spouse to retire and claim much later or earlier than what is intended by the spouse themselves. We find that this alignment of expected claiming age increases in the treatment group for

[3]This could also be consistent with negative news being more salient, though evidence on asymmetric updating in response to good and bad news is quite mixed (Benjamin, 2019).

[4]It is important to note that our experimental setting shuts down the information acquisition channel. Cognitive factors may play a role if information had to be acquired. For example, Choukhmane et al. (2023) show that 20% of couples could improve retirement outcomes by reallocating contributions across spouses, with survey evidence suggesting that half of these inefficiencies arise from cognitive constraints.

couples whose expectations were misaligned at the baseline. This suggests that providing information to one spouse—and the resulting spillovers to the other—can create conditions that are more conducive to optimal intra-household decision-making.

An important contribution of this paper is to test and quantify the often-implicit assumption of alignment of economically-relevant expectations within couples. In the last few decades, there has been growing research on individual decision-making under uncertainty using subjective expectations data elicited in surveys (Manski, 2004; Bachmann et al., 2023). This literature demonstrates that individuals' expectations are central to understanding behavior. In particular, expectations measured for only one household member are typically used to predict household-level decisions such as fertility (Delavande et al., 2025), maternal labor supply (Boneva et al., 2025; Caplin et al., 2025), investments in children (Attanasio et al., 2020; Cunha et al., 2022), and retirement (Bottazzi et al., 2006). In these settings, however, the expectations of both partners are likely to matter. Due to data limitations, very few studies have compared spouses' expectations about the same outcomes. Our paper is the first to quantify the degree of alignment in spousal expectations for household-level outcomes that are central to household economic decision-making. Rather than small deviations from the benchmark of full information, we uncover systematic and sometimes sizeable misalignment. Our findings underscore the importance of incorporating information frictions into theoretical models and highlight the need to measure within-household heterogeneity in expectations when modeling household behavior and designing interventions.

Because data on the expectations of multiple household members are rarely available, we also know little about how expectations of different members within the same couple, or decision-making unit, affect choices. Some studies have approached this question indirectly by eliciting individuals' expectations about others' approval of a decision, such as parental approval (Delavande and Zafar, 2019), partner approval (Delavande, 2008), or peer approval (Miller et al., 2025). Direct evidence remains scarce. Notable exceptions include Giustinelli (2016) and Giustinelli and Manski (2018), which focus on teenagers' and parents' school choice under subjective risk about future choice-specific outcomes; Walker et al. (2024), which analyze intra-household allocation of parental investments under uncertainty about the productivity of those investments; and Ke (2025), which examines how disagreement in macroeconomic expectations affects household portfolio choice. Beyond expectations, imperfect knowledge about spousal preferences may also play a key role in joint decision-making (Michaud et al., 2020). Our study contributes to this work by demon-

strating how information provision, and the associated spillovers, can impact alignment in intended Social Security claiming age.

Our work also builds on a growing literature using within-survey randomized information provision, which has shown that survey respondents are not always well-informed about important variables and that they are responsive to new information (see Fuster and Zafar, 2023; Haaland et al., 2023 and Stantcheva, 2023 for recent reviews). This literature has primarily focused on how information provided to one person influences the beliefs or decisions of that person. In contrast, we study how information flows beyond the survey to other household members. This approach provides new insights into the process of expectations formation in real life—an area where significant gaps in understanding remain (Manski, 2023)—and, in particular, highlights the role of the household as an important but imperfect source of information sharing.

A growing literature shows that providing information to one individual in a network can shape the expectations of others (e.g., Mobius and Rosenblat 2014), but much less is known about how such information diffusion operates within the most central network of all: the household. We contribute to an emerging literature on information transmission within couples through exogenously-provided information (Conlon et al. 2022; Apedo-Amah et al. 2023; Ashraf et al. 2023; Fehr et al. 2024). This work has exclusively focused on the gender dynamics of information-sharing and suggests that husbands' information is more effectively transmitted than wives'. In contrast, we find only weak evidence of gender-based heterogeneity in information spillover for Social Security benefits, a key economic outcome for many households, suggesting that this gender disparity may vary depending on the context and outcome under consideration.[5,6] Our contribution is to open the "black box" of information sharing within couples in a context where mutual gains from sharing are plausibly high, systematically examining factors beyond gender that are grounded in theory—such as the value of information—to identify what impedes or facili-

[5]Consistent with context being relevant, Mustafi (2024) finds that in a stylized lab-in-the-field setting in India, households successfully pool information when it pertains to a gender-specific domain, but not when it is gender-neutral.

[6]Our prior is that spouses have an incentive to share information about Social Security benefits, and we test for this by considering strategic motives. Apedo-Amah et al. (2023) and Ashraf et al. (2023) focus on information flow in situations where spouses may have individual strategic incentives to withhold information due to differing preferences, e.g. regarding fertility. This work builds on research in development economics documenting barriers to spousal communication when spouses have private information they can strategically use to influence household decisions. This includes studies of temporary migrants who can easily hide pertinent information like earnings (e.g., Chen 2013; de Laat 2014; Ur Rehman 2023) or studies where the observability of choices or resources is experimentally manipulated (e.g., Ashraf 2009).

tates information flow.

Besides deepening our understanding of the impediments to information flow within households, our findings also raise new questions. For instance, our experimental design cannot disentangle whether imperfect spillovers arise from lack of or distorted communication by the index spouse, or the secondary spouse's discounting of the provided information. We hope future work will shed light on these mechanisms.

2 Data and Context

2.1 Social Security in the U.S.

The Old-Age, Survivors, and Disability Insurance (OASDI) program provides financial assistance to eligible individuals, focusing primarily on retirees, disabled individuals, and survivors. The program pays monthly retirement benefits to eligible workers. Eligibility for benefits is primarily contingent upon an individual's work history and contributions to Social Security through payroll taxes. Benefits are typically computed using average indexed monthly earnings. This average summarizes up to 35 years of a worker's indexed earnings. Eligible individuals can start claiming benefits as early as age 62, but this may lead to a reduction of up to 30% in monthly benefits compared to claiming at the *full retirement age* (67 for those born after 1960). Claiming benefits after the full retirement age may result in larger monthly benefits, with maximum benefits attained at age 70 (Social Security Administration, 2020).

A married person aged 62 or older can qualify for benefits based on both their own work record and their spouse's work record, given a minimum one-year marriage. Spousal benefits range from one-third to one-half of the worker's benefits. If the individual is also eligible for benefits based on own earnings, they will receive the higher benefit amount between own and spousal benefits (Social Security Administration, 2021). Divorced individuals who were married for at least 10 years are eligible for Social Security benefits based on their ex-spouse's record if they are unmarried and not entitled to a higher benefit on their own record when they become eligible.[7]

Various claiming options therefore exist for married couples, and determining the op-

[7] In the event of a spouse's or ex-spouse's death, the surviving widow is entitled to receive widow's benefits. The widow is eligible to receive a percentage ranging from 71 percent (at age 60) to the full 100 percent (at full retirement age) of the amount the deceased spouse was receiving before their passing (Social Security Administration, 2021).

timal strategy is complex, depending on factors such as each spouse's life expectancy, earnings history, health, discount rate, and leisure preferences. An essential aspect of formulating this strategy, as underscored by numerous online retirement planning advisors, involves a full understanding of both one's future Social Security benefits and those of one's spouse.

2.2 Research Design and Sample

Our survey was administered by NielsenIQ between January and July 2022. Respondents were recruited from two sources: (i) married participants rotated out of the New York Fed's Survey of Consumer Expectations who had previously consented to NielsenIQ contacting their spouses for a future survey, and (ii) a third-party panel used by NielsenIQ for other research. We refer to these participants as *index* spouses. Eligibility was restricted to individuals aged 38–62 who were not retired, not receiving Social Security income, and whose spouses were also not retired and receiving such income. We further required that index spouses provide a distinct email address for their spouse.

Eligible index spouses received a survey link and a $15 incentive. They were informed that their spouses (*secondary* spouses) would later receive a similar survey for $15, and that completion by both would earn the index spouse an additional $15. Once an index spouse completed the survey, an automatic survey link was sent the secondary spouse. The average lag between completion by the index spouse and initiation by the secondary spouse was 2.5 days, with about 10% exceeding eight days. On average, index spouses took 39 minutes (median = 33) to complete the survey, and secondary spouses took 29 minutes (median = 23); the time difference arises because the secondary spouse survey was shorter.

This process yielded 9,159 index spouses and 2,219 completed couples, roughly one-quarter of index spouses. Benchmarking this recruitment rate is difficult, as few online surveys recruit both spouses. For reference, the German Family Panel (pairfam) uses a similar sequential design in face-to-face mode and achieves a 58% spouse response rate among consenting index respondents, and 40% overall (Brüderl et al., 2023). Given that web-based surveys typically exhibit response rates roughly 40% lower than in-person surveys (Braekman et al., 2022), our completion rate is comparable to this high-quality benchmark. It is also slightly above that of the Understanding America Study (UAS), a nationally representative online panel inviting household members of main respondents, in which 17% of multi-person households have both spouses responding.

Both index and secondary spouses were randomly assigned to information treatments

(described in Section 2.3). Treatment assignment was made at the couple level, so both spouses received the same assignment. We assigned 22% of index couples to the control group and 78% to the treatment group. The larger treatment share reflects both the need to divide the treatment arm across two secondary-spouse treatment types and our reliance on within-individual variation in the analysis of expectations revision.

TABLE 1: Demographic Characteristics of the Sample

	Index Spouse			Secondary Spouse		
	Control	Treated	P-Value	Control	Treated	P-Value
Female	0.59	0.58	0.92	0.41	0.43	0.51
White	0.88	0.89	0.66	0.86	0.88	0.24
Age $<$ 45	0.55	0.53	0.51	0.53	0.49	0.21
Age 45–50	0.21	0.19	0.37	0.21	0.21	0.88
Age $>$ 50	0.24	0.28	0.11	0.27	0.30	0.21
College degree	0.62	0.66	0.10	0.57	0.61	0.13
% Financially literate	0.29	0.32	0.24	0.29	0.32	0.18
% Working full-time	0.77	0.75	0.18	0.80	0.76	0.18
% With kids	0.31	0.35	0.13	0.31	0.35	0.13
Length of marriage	16.77	17.35	0.19	16.77	17.35	0.19
Perception of own financial savviness	5.15	5.32	0.04	4.97	5.07	0.24
Marital Satisfaction Index	–0.10	–0.04	0.22	0.01	0.07	0.26
Observations	492	1,727		492	1,727	

Note: Financial literacy is defined based on having the two financial questions included in the survey correct. There are four questions that ask participants to self-evaluate their relationship with the spouse in the survey. Marital satisfaction is an index created by the sum of the standardized values for these 4 questions. Financial savviness is measured with a 7-point Likert scale.

Table 1 presents demographic characteristics of our sample of couples. The majority of index spouses are female, white, college-educated, and under 45; over three-quarters of spouses work full-time. Couples have been married for an average of 17 years, and one-third have children under 18. About 30% are financially literate—defined by correct responses to two standard questions on compound interest and inflation (Lusardi and Mitchell, 2014)—and average self-assessed financial savviness is 5 on a 7-point scale.

We also measure marital satisfaction using a four-item scale from Funk and Rogge (2007) capturing happiness, warmth, reward, and satisfaction of the relationship. A standardized index (mean 0, variance 1) aggregates these responses. Variation across individuals and within couples is substantial: among index spouses in the top quartile of the index, only two-thirds of partners also fall in the same quartile, and 43% of couples fall in different quartiles (Appendix Table A2). We later use this within-couple variation as a proxy for communication frictions. Prior work has found such disagreement in reported marital satisfaction to correlate with higher divorce risk (Gager and Sanchez, 2003).

Control and treatment groups are well balanced across background characteristics for both spouses; the only statistically significant difference is a small, economically negligi-

ble increase in reported financial savviness among treatment-group index spouses. Regarding completion rates, secondary spouses in treatment couples were slightly more likely to complete the survey than those in control couples (25.5% vs. 22.6%, p = 0.004). Appendix Table A1 reports regressions of secondary-spouse completion on a rich set of index-spouse characteristics, showing no evidence of differential completion based on observables between treatment and control couples (no p-values below 0.10). In both groups, completion was higher when index spouses were more financially literate and had smaller absolute perception gaps in expected benefits. Marital satisfaction, however, did not predict completion, suggesting that our sample is not biased toward couples with higher satisfaction levels.

To assess how representative our respondents are of the broader U.S. population, we compare their demographic characteristics to married, non-retired household heads in the Current Population Survey (CPS). Table A3 shows that our respondents are broadly representative by geography and employment but tend to be younger, more educated, and more likely female, patterns typical of online samples. College-educated respondents earn slightly more than their CPS counterparts, while those without a degree earn slightly less, likely reflecting our exclusion of individuals receiving Social Security income (information unavailable in CPS).

2.3 Survey Design

We describe the Social Security expectations module and information treatment here. The questionnaire and some screenshots can be found in Appendix B.

The **index spouse**'s module started with a series of introductory questions regarding the percent chance of both themselves and their spouse being eligible to receive Social Security benefits, and from which record these benefits would be claimed. The module proceeded in the following stages (for a visual depiction, see Figure B1):

Stage 0: Index spouse baseline Social Security expectations. Respondents answered several Social Security-related expectations. These included their own and their spouse's expected monthly benefits, conditional on claiming at ages 62, 67, and 70 (e.g., *If you were to retire at age 67 and collect benefits, on average, how much do you expect the monthly payments to be in today's dollars?*; see Figures B2 and B3). Respondents also reported their expected claiming ages for themselves and their spouse, as well as the expected benefit amounts conditional on claiming at those ages.[8]

[8]For the expected claiming age and benefits, respondents were further asked a density of their beliefs.

Stage 1: Information on own Social Security benefits to index spouses. Respondents in the treatment group were presented with a table showing their projected Social Security benefits if they were to claim at ages 62, 67 or 70 (see Figure B4a). These projections are derived based on the earnings they reported, utilizing a formula similar to the one used by the SS Quick Calculator.[9] The screen also looks similar to what individuals can see when consulting the Quick Calculator; respondents were also provided with a link to the official Quick Calculator, in case they wanted to check it out themselves. Respondents in the control group were provided placebo information on men's soccer around the world (see Figure B5a).

Stage 2: Index spouse midline Social Security expectations. Respondents were re-asked their expected claiming ages and expected benefits for own and spouse conditional on claiming at their (potentially updated) expected claiming age, and conditional on claiming at age 67 (if different from expected claiming age).

Stage 3: Information on spouse's Social Security benefits to index spouses. Respondents in the treatment group were presented with a table showing the projected Social Security benefits for their spouse with a claiming age of 62, 67, and 70 (see Figure B4b). These estimates were derived from the earnings reported by the respondent for their spouse, utilizing the SS Quick Calculator formula. The display featured the spouse's benefits at the top and, as a reminder, the identical table from stage 1 at the bottom of the screen. Respondents in the control group were provided a placebo information on swimming in the Olympic games (see Figure B5b).

Stage 4: Index spouse endline Social Security expectations. Respondents were asked the same set of questions as in stage 2.

After the index spouse completed the survey, the secondary spouse was invited to participate. The Social Security module for the **secondary spouse** commenced with identical introductory questions as those in the index spouse's questionnaire and proceeded with the following stages:

Stage 5: Secondary Spouse baseline Social Security expectations. Respondents were asked the same set of questions as in the Index spouse Stage 0. This is Stage 5 of the experiment when viewed at the couple level but it is the first stage for the secondary

This involved indicating the likelihood of claiming within specific age ranges, or the benefits falling within designated intervals, as a way of measuring uncertainty in beliefs.

[9]The SS Quick Calculator is available online and provides a projection of Social Security benefits after users input their date of birth and earnings in the current year: https://www.ssa.gov/OACT/quickcalc.

spouse.

Stage 6: Information to secondary spouses. Half of the secondary spouses in the treatment group received information about projected benefits for both themselves and their spouse (T1 in Figure B1). The other half also received information about their spouse's claiming age expectations (T2); we do not study the impact of this treatment in this paper. Control participants again viewed placebo content.

Stage 7: Secondary spouse endline Social Security expectations. Respondents were asked the same set of questions as in stage 2.

Our primary interest is in understanding how information provided to the index spouse transmits to the secondary spouse. Accordingly, our main empirical analysis on spillovers focuses on data from Stages 0 to 5. However, when analyzing alignment in intended behavior, we also use data from stages 6 and 7 (for Control and T1 couples only).

2.4 Summary Statistics of Social Security Expectations

Table 2 displays the summary statistics for monthly Social Security expectations reported by index spouses at baseline (Stage 0). On average, respondents expect to receive $2,018 if claiming at age 62, $2,346 at age 67 (Full Retirement Age), and $2,691 at age 70. While respondents recognize that early claiming reduces benefits and delaying increases them, they underestimate the size of these adjustments on average. The expected reduction at age 62 is about 14% (versus the actual 30%), and the expected gain at age 70 is around 15% (compared to the actual 24%). Index spouses, on average, expect to claim at age 66.5, and 16.7% expect to claim at age 67. They expect their spouse to claim at age 66, on average, and the expected age 67 benefits for their spouse is $2,271. Full descriptive statistics for both own and spousal expectations are provided in Appendix Table A4.

In the bottom panel of Table 2, we show how respondents' expectations are different from the age 67 benefit amounts predicted by the SS Quick Calculator. For both own and spouses' benefits, the absolute gap (i.e., the absolute value of the difference between the benefits predicted by the SS Quick Calculator and the respondent's expected benefit) is sizable and amounts to an average of $1,210. Note that, the calculator might not be giving the most accurate prediction if individuals have private information about their past or future work behavior. For both their own and their spouse's benefits, around 45% of respondents overestimate their age 67 benefits compared to the projection from the calculator, while about half underestimate them. The remaining 5% of respondents report benefit expectations within $50 of the SS calculator prediction. These patterns are similar across treatment

TABLE 2: Index Spouse Social Security Expectations at Baseline (Stage 0)

	Index Spouse			
	All	Control	Treated	P-Value
Expected own age 62 benefits ($)	2017.6	1910.0	2048.2	0.19
Expected own age 67 benefits ($)	2345.9	2227.5	2379.6	0.15
Expected own age 70 benefits ($)	2690.9	2609.4	2714.2	0.37
Expected SS benefit claiming age	66.5	66.6	66.5	0.39
Expected age 67 benefits for the spouse ($)	2270.7	2279.3	2268.2	0.91
Expected SS benefit claiming age for the spouse	66.0	66.2	65.9	0.14
Own benefits				
Predicted age 67 benefits by the SSA calculator ($)	2036.5	2010.0	2044.1	0.51
Absolute gap in own age 67 benefits ($)	1209.2	1162.5	1222.6	0.38
Share overestimating	44%	44%	45%	0.71
Share underestimating	49%	49%	49%	0.80
Benefits for the spouse				
Spouse's predicted age 67 benefits by the SSA calculator ($)	1930.7	1876.3	1946.2	0.15
Absolute gap in spouse's age 67 benefits ($)	1210.6	1198.0	1214.1	0.81
Share overestimating	45%	47%	44%	0.24
Share underestimating	50%	47%	50%	0.17
Observations	2,219	492	1,727	

Note: The table shows the average expected benefits and the average expected claiming age of the index spouses. In the bottom panel of the table, absolute gap is defined as the absolute value of the difference between the predicted benefits by the SS Quick calculator and the benefit expectations of the respondent. Table A4 presents the expectations for age 62 and 70 benefits along with predicted benefits and absolute gaps in addition to what is included in this table.

and control groups.

In Figure A1, we examine the distribution of the perception gap between the prediction of age 67 benefits by the SS Quick Calculator and the respondents' age 67 benefit expectations (for themselves and for their spouses, separately) as a share of the prediction by the SS Quick Calculator. We see that index spouses' average perception gap in own age 67 benefits is -8.1% (i.e., an average overestimation of benefits by 8.1 percent) and the average gap in spouse's age 67 benefits is -7.3%. However, the distributions of the gap for own and spouse's benefits are both highly dispersed: for example, 20% of index spouses overestimate their age 67 benefits by at least 50% and 19% of index spouses underestimate their age 67 benefits by at least 50%. Overall, these sizable gaps suggest potential lack of knowledge about the Social Security system.

Appendix Table A5 further illustrates how the absolute perception gap varies across different characteristics. There is no gender difference. Older and more financially-literate index spouses tend to have smaller absolute perception gaps. Similarly, those without a college degree or in households with below-median earnings show smaller absolute gaps, possibly because Social Security benefits represent a more critical resource for them.

3 Correlation of Spousal Expectations: Descriptive Evidence

This section examines how spouses' expectations align for the same outcome–expected Social Security benefits at age 67 (the Full Retirement Age). To avoid potential spillovers from the information treatment, the analysis uses only control-group couples. The descriptive evidence provides a naturally occurring cross-sectional view of alignment in expectations, capturing the long-run processes through which information is acquired, processed, and shared within couples.

3.1 Social Security Benefits Expectations

We begin by examining the histogram of the distance between spouses' age 67 benefit expectations for the same spouse, presented in Figure 1a. Specifically, we compute the distance:

Spouse A's exp about A's benefit – spouse B's exp of spouse A benefit.

We use stage 0 expectations for the index spouse and stage 5 expectations for the secondary spouse. The distribution is nearly symmetric around zero, resulting in an average difference of approximately \$18 between spouses' benefit expectations for the same spouse. However, the variation is substantial, with a standard deviation of \$1,540. Around 35% of respondents have distance within the $[-\$100, 100]$ range and 55% of the couples have an absolute distance of over \$200. Furthermore, the average absolute difference is \$830. This significant disparity in spouses' expectations for the same outcome suggests that within-couple expectations may not be perfectly aligned, potentially indicating (communication or information) frictions within households.

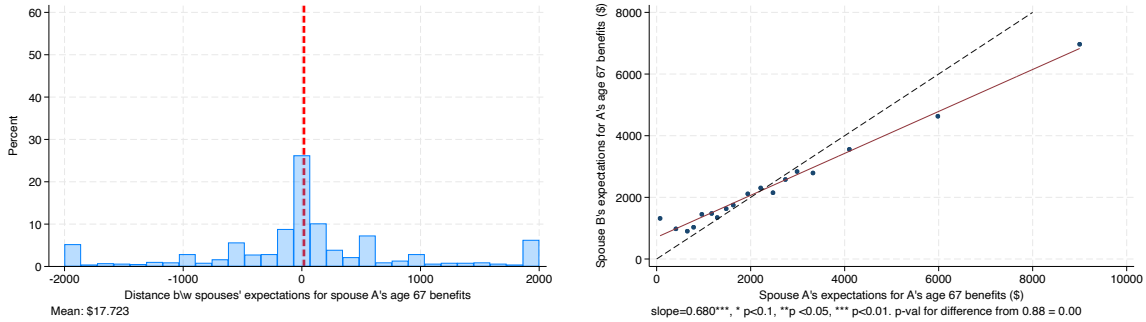
In Figure 1b, we plot the binscatter of spouses' expectations for the same spouse's age 67 benefits. The correlation between spouses' expectations is 0.70 and the slope of the regression line is 0.68. These are statistically different from 0.88, the test-retest correlation in expectations of the control group index spouses (who answer the same question regarding age 67 benefits in Stages 0 and 4). This correlation provides further descriptive evidence against the equality of expectations within a couple.[10] When we restrict the sample to cou-

[10]This correlation is likely an upper bound since, even in the control group, taking the survey might have spurred some discussions about Social Security benefits within a couple.

FIGURE 1: Within-Couple Expectations for Age 67 Benefits

(A) Distance between spouses' benefit expectations

(B) Correlation between spouses' benefit expectations



Note: The dashed red line in the left panel shows the mean of the distance between age 67 benefit expectations for the same spouse. Both panels only use data for control group couples. For ease of exposition, in the first panel we winsorize the distance at -2000 and 2000, but report the mean of the unwinsorized distance. The right panel shows a binned scatter plot of both spouses' expectations for the same spouse's age 67 benefits. The correlation coefficient between the two variables used in the binscatter is 0.70, which is statistically different than 0.88 (p-value=0.00).

ples with benefit expectations below $4,000,[11] to reduce the effect of outliers on the slope of this relationship, we find that the correlation is largely unchanged at 0.66. We present a similar exercise for spouses' expectations for Social Security wealth of the couple, which we define as the sum of the age 67 benefits of the spouses within a couple, in Appendix Figure A2. Here, we find the within-couple correlation in expectations to be 0.74, slightly higher than the correlation in benefit expectations. Once again this correlation is statistically different than 0.88, providing evidence against the equality of expectations within a couple.

But how should this correlation be interpreted—high or low? To contextualize, we compare it to a scenario where couples are randomly matched based on the observed patterns of assortative matching in our sample. Assortative matching could contribute to the observed correlation, as individuals with similar characteristics may naturally hold similar expectations, even without direct communication. Simulating random matches based on gender, age, education, and employment status yields a correlation of just 0.12 (Appendix Figure A3). This stark contrast suggests that the observed correlation is far higher than what assortative matching alone would predict, indicating meaningful information flow within households.

Even in the absence of any frictions, there are several reasons why the correlation in spouses' expectations may be imperfect. One possible explanation is that respondents re-

[11]The maximum monthly age 67 Social Security benefit in the U.S. in 2023 was $3,627, while the average benefit was $1,706.

port their beliefs with measurement error, which would naturally reduce the correlation to below the full information-sharing benchmark. To assess whether this is the case, we perform an exercise where we assume both spouses have the same expectations, but that the second spouse reports beliefs with a classical measurement error (distributed normally with mean zero and standard deviation σ, added to log beliefs about benefits) while the index spouse reports beliefs without any errors. In this setup, the σ that would generate the correlation of 0.70 we observe in the data is 0.61, which implies that 51% of the observed variation in secondary spouse benefits would have to be due to noise.[12] To put these numbers in context, the test-retest correlation of 0.88 for the control group index spouses would imply a σ of 0.35 if we followed the same steps. This would imply that only 23.3% of the variation in the control group index spouse beliefs about benefits is due to measurement error. Given the difference in the variation in beliefs due to noise in these two cases, we conclude that measurement error is unlikely to be the sole driver of this imperfect alignment.

Lastly, these misperceptions persist even among couples who accurately perceive their spouse's earnings, a key determinant of future Social Security benefits. Among the control group, the correlation between spouses' beliefs about one spouse's earnings is 0.81. When we restrict our sample to couples with accurate earnings perceptions (i.e., those couples where there is no discrepancy between what an individual says they earn and what their spouse reports their earnings to be, representing 46.5% of our sample), the correlation in Social Security benefits expectations remains at 0.75. This correlation is still statistically different than 0.88, further indicating misalignment in expectations even among couples with accurate earnings perceptions (see Appendix Figure A4).

Another mechanism that would generate imperfect correlation in spouses' expectations is specialization within the household. If one spouse makes all the financial and economic decisions of the household, it would be natural for spouses to have different expectations for the same outcomes.[13] However, our analysis of within-couple correlations of Social Security wealth, presented as a heat map in Figure 2, suggests a different story. Here we

[12] We simulate secondary spouse benefits, B_s^{me} in this setup with measurement error as $\log(B_s^{me}) = \log(B_i) + \varepsilon$, where B_i is the benefit expectations of the index spouse and $\varepsilon \sim N(0, \sigma^2)$. We first find the σ value that generates the observed correlation in the data as the average of 1,000 bootstrap repetitions. We then decompose the variance of second spouse benefits as $var(B_s^{me}) = \mathbb{E}[var(B_s^{me}|B_i)] + var(\mathbb{E}[B_s^{me}|B_i])$, following the law of iterated variances. The ratio $\frac{\mathbb{E}[var(B_s|Bi)]}{\mathbb{E}[var(B_s|Bi)]+var(\mathbb{E}[B_s|B_i])}$ gives us the share of the variance of B_s, not attributed to the B_i.

[13] Investing in financial knowledge can be viewed as a deliberate choice, analogous to other forms of human capital investment (Lusardi et al., 2017).

FIGURE 2: Correlation in spouses' perception gaps about Social Security wealth of the couple



Note: The figure shows a heat map of both spouses' perception gaps regarding the couple's Social Security wealth.

define Social Security wealth as the sum of two spouses' monthly benefits. Specifically, we assign each spouse a decile based on the size of their perception gap regarding Social Security wealth (i.e., the gap between their expected Social Security wealth and the Social Security wealth predicted by the calculator). The figure reveals that most couples cluster along the 45-degree line, indicating a high degree of correlation in their perception gaps. This finding implies that specialization within the household is unlikely to explain the observed discrepancies. In addition, the heat map suggests that "errors" might be amplified within couples, making some couples particularly vulnerable by having both members over or under-estimating their Social Security wealth.

3.2 Heterogeneity

Having established that the imperfect correlation is unlikely solely due to measurement error or specialization-based explanations, we next conduct heterogeneity analysis in spousal alignment. This analysis assesses whether misalignment systematically varies across couples and offers suggestive evidence on the underlying sources of informational frictions. Table 3 shows the correlation in Social Security wealth expectations across different subsamples. Two key patterns emerge. First, there is substantial heterogeneity in the correlations, varying from 0.45 among below-median earnings couples to 0.84 among couples where both spouses report above-median marital satisfaction. Second, the correlations in most cases are significantly different from 0.88, the test-retest correlation in the control group, indicating that misalignment is widespread even among relatively homogeneous couples.

Panel A of Table 3 examines heterogeneity by couple-specific characteristics. The cor-

TABLE 3: Heterogeneity in the correlation of spouses' Social Security wealth expectations

	Corr in Exp in SS wealth	p-value of difference from 0.88	p-value of differences between groups	Median abs perc gap for age 67 SS benefits
Overall	0.740***	0.00		38.6
Panel A				
At least one spouse no college	0.654***	0.02		36.7
Both spouses have college degrees	0.726***	0.01	0.51	40.8+
Couple below-median earnings	0.449***	0.00		36.4
Couple above-median earnings	0.760***	0.03	0.00	40.6
Below median earnings diff btw spouses	0.790***	0.06		40.8
Above median earnings diff btw spouses	0.671***	0.01	0.20	34.7++
Both spouses below age 55	0.737***	0.00		42.2
At least one spouse above age 55	0.723***	0.07	0.89	27.4+++
Panel B				
Less agreement in total hh earnings	0.602***	0.00		35.7
More agreement in total hh earnings	0.795***	0.14	0.05	38.9
Less agreement in marital satisfaction	0.664***	0.01		38.1
More agreement in marital satisfaction	0.772***	0.04	0.26	38.7
At least one spouse below-median marital sat.	0.642***	0.00		38.8
Both spouses above-median marital sat.	0.836***	0.44	0.02	38.3
Couple below-median marital length	0.675***	0.00		39.8
Couple above-median marital length	0.796***	0.12	0.17	36.8

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The asterisks in the first column denote the statistical difference of the correlations from 0. The third column shows the p-value of the differences in the correlation in spouses' expectations for couple's Social Security wealth between the mutually exclusive groups. The asterisks in the last column denote whether the median absolute perceptions gaps are statistically different between the mutually exclusive groups.

relation is higher among couples with above-median earnings (0.76 versus 0.45 for below-median earnings, a statistically significant difference); the correlation is also weakly higher among couples in which both spouses hold a college degree. These patterns may reflect a combination of lower financial stress, greater engagement in joint financial planning, and exposure to shared information sources among higher-earning couples, all of which may facilitate more aligned expectations. The correlation is also moderately higher among couples with smaller earnings differences between spouses, suggesting that information may flow more effectively in more equal partnerships. By contrast, we find little systematic variation by age, with older couples no more aligned than younger ones. This suggests that proximity to retirement, by itself, does not eliminate informational frictions about Social Security benefits.

Panel B shows that proxies of relationship quality are strongly associated with alignment in expectations. Couples reporting higher marital satisfaction or greater agreement about total household earnings exhibit substantially higher correlations in expectations. In

fact, for both groups, we cannot reject equality with the 0.88 test–retest benchmark, consistent with lower communication costs and more effective information flow.

The last column of Table 3 reports the median absolute perception gap (as a share of the prediction of the Quick Calculator) for each subgroup. The comparison reveals no systematic relationship between belief alignment and perception gap: couples who are more similar in their expectations are not necessarily better informed on average. For example, while couples with at least one spouse over age 55 display markedly smaller perception gaps, they are no more aligned than younger couples. This distinction highlights that information acquisition and information sharing may be related but distinct processes within couples.

3.3 Correlations in Expectations for other Decision-relevant Outcomes

We now show that the imperfect within-household correlation is not unique to Social Security benefit expectations, but extends to expectations of other decision-relevant variables as well. Our survey measures expectations about the year-ahead unemployment rate, interest rate changes, stock price growth, inflation, housing price growth, and tax payment growth. Additionally, we measure household-level expectations: household spending growth and income growth over the next 12 months. Table 4 shows that misaligned expectations are not specific to Social Security benefits and the equality of expectations is, in fact, rejected for other aggregate and household-related expectations as well. The correlations in spouses' other expectations range from 0.39 to 0.63 for macro-level variables and from 0.53 to 0.64 for household-level variables. They are all statistically different than 0.88, which is the test-retest benchmark.

We further examine one particular type of expectation which is relevant to our study: expected Social Security claiming age. Respondents were asked at what age they expect to claim Social Security benefits, and at what age they expect their spouse to claim. The timing of claiming is an important choice variable for financial well-being in retirement, since delaying claiming increases monthly benefits up to age 70. We depict the alignment in expected claiming age in the control group, i.e., the distance between the age at which spouse A expects to claim and the age at which spouse B expects spouse A to claim. In Figure 3, we show the distance between spouses' expected claiming age of the *same* spouse (Panel A) and the binscatter (Panel B). The left panel highlights the misalignment in expectations about claiming ages, with approximately 67% of couples having different expectations and 38% diverging by more than two years. Panel B shows that the slope of this relationship

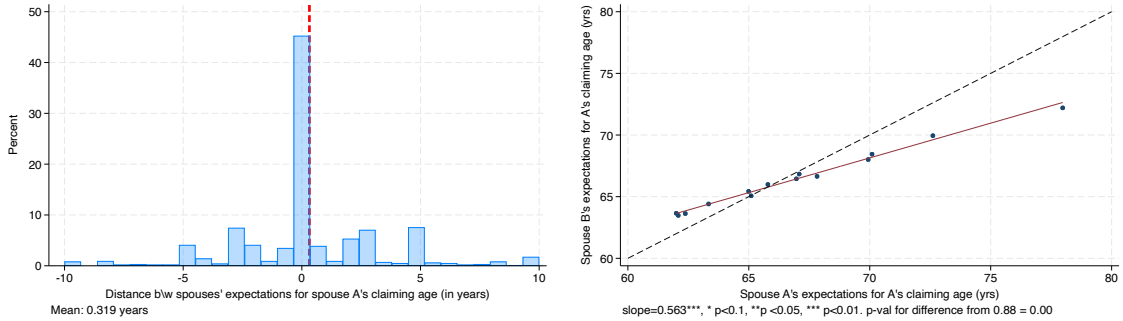
TABLE 4: Correlation in spouses' other decision-relevant expectations

	Correlation in Expectations
Unemployment rate higher	0.546***
Interest rate higher	0.464***
Stock Prices higher	0.509***
Inflation	0.388***
National home price growth	0.587***
Tax payment growth	0.631***
Household income growth	0.639***
Household spending growth	0.533***

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, show the statistical difference of the correlations from 0. All correlations are also statistically different from 1 (p-val=0.00 for all rows). Unemployment rate higher, interest rate higher and stock prices higher denote the probabilistic expectations for the U.S. unemployment rate, average interest rate on savings account and average stock prices in the U.S. stock market being higher 12 months from now, respectively. Inflation refers to the 12-month ahead inflation expectations, national home price growth refers to the 12-month ahead expected average home price growth in the U.S. and tax payment growth refers to the 12-month ahead expected growth in total amount of taxes paid keeping household income constant. Household income and spending growth expectations refer to the 12-month ahead nominal household income and spending growth expectations. All expectations are elicited as point forecasts.

FIGURE 3: Distance between spouses' expected claiming age

(A) Distance between spouses' expected claiming age **(B)** Correlation between spouses' claiming age



Note: The left panel shows the difference between spouses' expected claiming age for the same spouse in the control group. The dashed red line denotes the mean distance in the control group. For ease of exposition, we cap the histogram at -10 and 10 years. The right panel shows a binned scatter plot of both spouses' expectations for the same spouse's claiming age. The correlation coefficient between the two variables used in the binscatter is 0.56, which is statistically different than the test-retest benchmark of 0.88 (p-value=0.00).

and the overall correlation are both 0.56, and again statistically different than 0.88.

4 Information Spillovers from a Randomized Experiment

The descriptive evidence in Section 3 reveals incomplete alignment of expectations within couples, consistent with barriers to information flow. In this section, we use a randomized information experiment to directly test whether exogenously provided information to one spouse spills over to the other. This experimental design, while shutting

down endogenous information acquisition for the index spouse, enables us to isolate the causal effect of providing information to one spouse on the expectations of the other, and to identify the factors that facilitate or hinder such spillovers.

4.1 Conceptual Framework

We first present a simple framework illustrating the updating of expectations and intra-household information transmission when one spouse receives new information, focusing for simplicity on stage 1 information provision and the index spouse's benefits.

Consider the index spouse i and the secondary spouse s in couple c. The couple is assigned to either the information treatment group T or the control group C. At Stage 0, the index spouse holds prior beliefs $B_{ic(J),0}$, for $J = \{T, C\}$, regarding their future Social Security benefits, while the secondary spouse holds beliefs $B_{sc(J),0}$, for $J = \{T, C\}$, about their spouse's Social Security benefits.

At stage 1, the index spouse in the treatment group receives an exogenous signal, $x_{ic(T)}$, about their future Social Security benefits (i.e., the predicted benefits according to the SS Quick Calculator). In a typical belief-updating framework, the posterior belief of the index spouse, measured at stage 2, is a weighted combination of the prior belief and the new signal:

$$B_{ic(T),2} = (1 - \gamma_{ic(T)})B_{ic(T),0} + \gamma_{ic(T)}x_{ic(T)}, \tag{1}$$

where the parameter $\gamma_{ic(T)} \in [0, 1]$ represents the weight put on the signal. $\gamma_{ic(T)} = 0$ implies no learning, while $\gamma_{ic(T)} = 1$ implies full updating to the provided signal. Under Bayesian learning, $\gamma_{ic(T)}$ is a function of the precision of the prior and the signal.

The index spouse in the control group receives a signal unrelated to their Social Security benefits so does not revise their beliefs about their future Social Security benefits:[14]

$$B_{ic(C),2} = B_{ic(C),0}. \tag{2}$$

To measure how close beliefs are to the signal, we define the absolute perception gap at any survey stage st for spouse j as follows:

$$PG_{jc(J),st} = \frac{|x_{ic(J)} - B_{jc(J),st}|}{x_{ic(J)}} \qquad J \in \{C, T\},\ j \in \{i, s\}, \tag{3}$$

[14]To keep the exposition simple, we ignore measurement error and survey noise here. However, the empirical analysis will take them into account.

where $x_{ic(T)}$ is the signal received by the index spouse in the treatment group and $x_{ic(C)}$ is the hypothetical signal index spouses in the control group would have received about their Social Security benefits had they been in the treatment group (which is observed by the researcher but not the survey respondent).

We test whether the treated index spouses' Social Security benefit beliefs align more closely with the signal than the control group's by comparing the absolute perception gaps. Specifically, we exploit the within-person variation between stages and focus on changes in the absolute perception gap to test the following one-sided hypothesis:

Hypothesis 1 (Index-spouse updating).

$$H_0 : \overline{\Delta PG_{ic(T),2,0}} = \overline{\Delta PG_{ic(C),2,0}}$$

$$H_1 : \overline{\Delta PG_{ic(T),2,0}} < \overline{\Delta PG_{ic(C),2,0}},$$

where $\overline{\Delta PG_{ic(J),2,0}} = \overline{PG_{ic(J),2} - PG_{ic(J),0}}$ is the average revision in the absolute perception gaps of the treatment group from stage 0 to stage 2 in group $J \in \{C, T\}$. Our prediction is that, on average, the post-information beliefs of index spouses in the treatment group are closer to the signal, and so the average absolute perception gap in stage 2 after receiving the signal, $\overline{PG_{ic(T),2}}$, is smaller than the average absolute perception gap in stage 0.[15]

While Hypothesis 1 focuses on belief revision by index spouses, our primary interest lies in how information provided to one spouse may spill over to the other. To capture any potential heterogeneity in spillovers, we introduce a vector of couple-level variables, $Z_c = (V_c, S_c, Comm_c, Cog_c, C_c)$, where V_c denotes the value of the information for the couple, S_c reflects strategic motives that may affect information flow, $Comm_c$ captures communication barriers, Cog_c represents cognitive constraints, and C_c collects remaining couple characteristics. These variables may shape whether information is shared, what is communicated, and how the secondary spouse incorporates the message, affecting spillovers at multiple stages of the process.

Upon receiving their signal, the index spouse i in the treatment group may choose to communicate with their spouse s, and transmit some information $m_{ic(T)}$. We assume information transmission occurs with probability $p_{ic(T)} = p(Z_c)$. No spillovers arise if the index

[15] In our experimental design, additional information is provided to index spouses at Stage 3, and their beliefs are re-measured at Stage 4. This allows us to extend Hypothesis 1 by testing whether perception gaps further narrow between Stages 2 and 4

spouse does not share information ($p_{ic(T)} = 0$). Conditional on sharing, the communicated message may be the signal itself, the index spouse's updated posterior (reported at stage 4, the end of the index spouse survey), or some transformation of the two, and its content may depend on the couple-level variable vector Z_c. We flexibly model the content of this information as follows:

$$m_{ic(T)} = f(B_{ic(T),4}, x_{ic(T)}, Z_c). \tag{4}$$

Upon receiving message $m_{ic(T)}$, the secondary spouse may update their original prior beliefs $B_{sc(T),0}$—beliefs held before stage 5, not observed in our survey (note that stage 5 corresponds to the first elicitation of beliefs from the secondary spouse, as shown in Figure B1). The secondary spouse's expected stage-5 beliefs, averaging over the probability $p_{ic(T)}$ that communication occurs, can be written as:

$$B_{sc(T),5} = p_{ic(T)} \left[(1 - \delta_{sc(T)})\, B_{sc(T),0} \;+\; \delta_{sc(T)}\, m_{ic(T)} \right] \;+\; \left(1 - p_{ic(T)}\right) B_{sc(T),0}, \tag{5}$$

where $\delta_{sc(T)} = \delta(Z_C) \in [0, 1]$ is the weight put by the secondary spouse on the information provided by the treated index spouse. Secondary spouses may discount ($\delta_{sc(T)} < 1$) some or all of the information provided by the index spouse for several reasons, for example if they question its accuracy or their partner's financial competence, or if there are cognitive constraints that limit their ability to process the information.

To test for information spillovers from the index spouse to the secondary spouse, we compare secondary spouses' stage 5 beliefs in the treatment and control groups. Specifically, we test whether secondary spouses in treated couples exhibit smaller absolute perception gaps than those in control couples, corresponding to a one-sided alternative of improved alignment with the information provided by their partner:

Hypothesis 2 (Information spillovers).

$$H_0 : \overline{PG_{sc(T),5}} = \overline{PG_{sc(C),5}}, \qquad H_1 : \overline{PG_{sc(T),5}} < \overline{PG_{sc(C),5}}.$$

Our prediction is that, secondary spouses in treated couples have smaller absolute perception gaps, on average, than those of their counterparts in control couples at stage 5.

Couple-level variables Z_c may affect the extent of spillovers in multiple ways. Standard economic theory suggests that sharing ($p_{ic(T)} > 0$) is more likely when information is valuable to the couple (higher V_c) and can generate gains from re-optimizing decisions

such as saving and labor force participation. Sharing, however, may be deterred by psychological, time, or cognitive costs, such as when discussions risk conflict or require effort (higher $Comm_c$), or when the information is difficult to convey or understand (higher Cog_c). Strategic motives (S_c) may also lead the index spouse to withhold information. For example, they may choose not to disclose negative news about their future benefits to preserve their bargaining power within the relationship. Cognitive, strategic, or relational factors embedded in Z_c may also affect how fully or accurately the index spouse conveys the information through $m_{ic(T)}$, or the weight the secondary spouse assigns to the message, reflected in $\delta_{sc(T)} < 1$.

Overall, information spillovers from the index spouse to the secondary spouse should be larger when the information is more valuable for household decision-making (higher V_c), or when frictions that impede communication and learning are lower, namely cognitive frictions (Cog_c) and communication frictions ($Comm_c$). Strategic motives (S_c) may lead to either a higher or lower likelihood of spillovers, depending on the type of information.

To formalize these predictions, let $\Delta(z_c) \equiv \left(\overline{PG_{sc(T),5}} - \overline{PG_{sc(C),5}}\right) \Big| \; z_c$ denote the average treatment–control difference in secondary spouse perception gaps for couples with characteristic z_c, where $z_c \in Z_c$. A more negative value of $\Delta(z_c)$ indicates larger information spillovers. Using the between-subject design as in Hypothesis 2, we compare $\Delta(z_c)$ across subgroups. For the hypotheses below, we conduct one-sided tests for the first two hypotheses, with alternatives reflecting the prediction that spillovers are larger when information is more valuable or when frictions to transmission are lower. The third hypothesis tests whether strategic considerations generate differential spillovers.

Hypothesis 3 (Value of Information). For $V_c > V_c'$,

$$H_0 : \Delta(V_c) = \Delta(V_c'), \qquad H_1 : \Delta(V_c) < \Delta(V_c').$$

Hypothesis 4 (Frictions). For any friction $F_c \in \{Cog_c,\, Comm_c\}$ with $F_c < F_c'$,

$$H_0 :\; \Delta(F_c) = \Delta(F_c'), \qquad H_1 :\; \Delta(F_c) < \Delta(F_c').$$

Hypothesis 5 (Strategic Motives). For $S_c > S_c'$,

$$H_0 : \Delta(S_c) = \Delta(S_c'), \qquad H_1 : \Delta(S_c) \neq \Delta(S_c').$$

To summarize, in our conceptual framework, information received by the index spouse may fail to reach the secondary spouse—or may reach them only in an attenuated form—for several reasons. First, the index spouse may not fully internalize the signal they receive, as captured by the updating parameter $\gamma_{ic(T)}$. Second, information transmission may break down along three channels. The index spouse may choose not to share the information ($p_{ic(T)} = 0$); conditional on sharing, they determine the content of the message $m_{ic(T)}$; and even when information is communicated, the secondary spouse may not fully update toward it, as reflected in the discounting parameter $\delta_{sc(T)}$. While we can identify $\gamma_{ic(T)}$ from our within-subject design, disentangling the contributions of the three transmission channels is not feasible with our setup and is therefore beyond the scope of this paper. In the remainder of this section, we draw on beliefs measured at different stages for both index and secondary spouses, combined with rich couple-level characteristics, to test the empirical implications of the framework outlined here.

In addition, because improved information flow should ultimately shape how couples coordinate on future decisions, spillovers should enhance the alignment of spouses' retirement plans, including expectations about future claiming behavior of a given spouse. To capture this behavioral implication, we consider whether spouses' expectations about the claiming age of the *same* spouse move closer together in treated couples compared to control couples. This forms the basis of our final hypothesis.

Hypothesis 6 (Alignment in claiming age).

H_0 : Treated and control couples experience the same improvement in alignment of expected claiming ages,

H_1 : Treated couples experience greater improvement in alignment than control couples.

The empirical implementation of this hypothesis is presented in Section 5, where we introduce the alignment measure and describe how it leverages the survey design.

4.2 Treatment Effect on Index Spouses' Social Security Benefits Expectations

We first investigate the causal effect of the information provision on belief-updating of the index spouse (hypothesis 1). Understanding this initial response is critical, as it serves as a necessary "first stage" to assess potential information spillovers to the secondary spouse. Without belief updates from the index spouse, it would be impossible to evaluate

spillover effects. Our primary outcome of interest is the absolute perception gap for the age 67 benefits, defined in equation (3), which quantifies the deviation of the index spouse's expectations from the information provided in the treatment, namely:

$$PG = \frac{|\text{Predicted benefits by the SS Calculator - Expected benefits}|}{\text{Predicted benefits by the Social Security Calculator}}.$$

We focus on the revision in absolute perception gaps across the various survey stages, expecting a larger reduction in the absolute perception gap for treated respondents. For index spouse i in couple c we are interested in the absolute perception gap for their own benefits ΔPG_{ic}^{own} and for their spouse ΔPG_{ic}^{spouse}.[16] We first examine the revision from stages 0 to 2 ($\Delta PG_{ic,2,0}$) and then from stages 2 to 4 ($\Delta PG_{ic,4,2}$). As shown in Figure B1, for the treatment group, the former is the updating as a result of information about own Social Security benefits only, and the latter is the updating as a result of additional information about spouse's Social Security benefits. We estimate the following specifications:

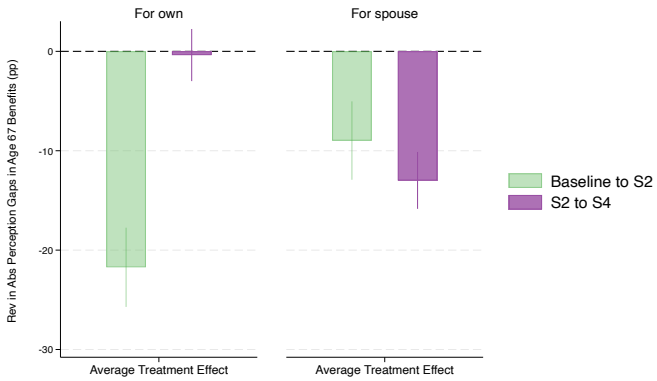
$$\Delta PG_{ic,s,s-2}^{h} = \eta_1 + \beta_1 T_{ic} + \theta_1 X_{ic} + \epsilon_{ic}, \quad s \in \{2,4\}, h \in \{own, spouse\}, \tag{6}$$

where T_{ic} is a dummy indicating if the index spouse i is in the treatment group, and X_{ic} is a vector of index and secondary spouse's characteristics, including education, age, ethnicity, gender, and financial literacy. We use heteroskedasticity-robust standard errors. In equation (6), η_1 measures the mean revisions in the control group and soaks up any effects attributable to the mere act of taking the survey or of reporting expectations multiple times. The parameter of interest is β_1, which measures the treatment effect on the revision of the absolute perception gap.

Figure 4 displays the treatment effects for expected benefits conditional on claiming at age 67. In the left panel, the green bars represent the treatment effect for own expected benefits from stages 0 to 2, while the purple bars represent stages 2 to 4. The right panel illustrates the analogous treatment effects on index spouse's absolute perception gaps for the secondary spouse's benefits. The figure reveals considerable revisions to expectations in the treatment group. The left panel shows that the stage 1 information treatment (on own benefits) had a large and precise effect on the average revision in the absolute perception gap for own benefits, with a reduction of 21.7 percentage points (green bar), or 39% of the baseline mean. However, the stage 3 information treatment (on spouse's benefits) shows no

[16] For simplicity, we drop the assignment to the treatment or control in the notation here.

FIGURE 4: Treatment effect on index Spouse's absolute perception gaps



Note: The figure shows the average treatment effects from stage 0 to 2 (in green) and from stage 2 to 4 (in purple), estimated using equation (6), separately for index spouse benefits and secondary spouse benefits. The spikes on each bar show 95% confidence intervals. Appendix Figure A5 shows the average treatment effects from baseline (stage 0) to endline (stage 4). Appendix Table A6 presents the estimates.

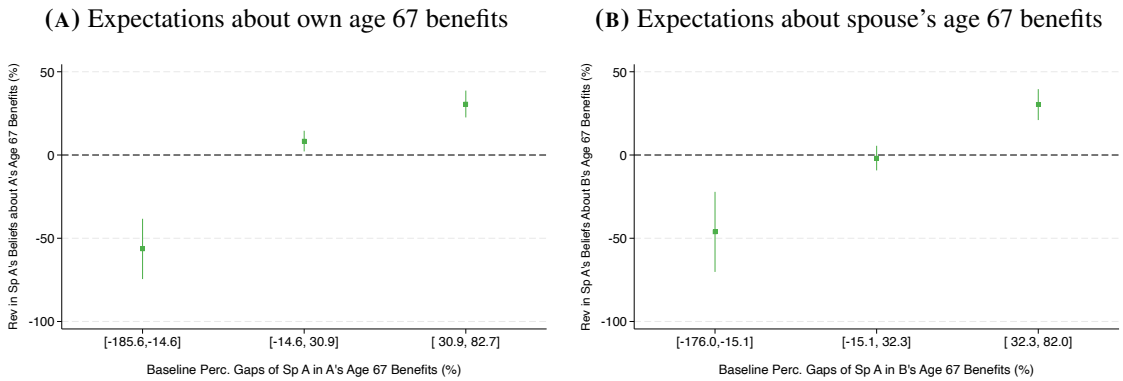
additional effect, with a treatment effect close to zero (purple bar). This is quite sensible: treated index spouses' expectations about their own benefits become more aligned with the provided information on own benefits, with no further revision upon receiving information on spouse's benefits.

The right panel shows that the index spouses revise their beliefs about their spouse's benefits upon receiving information about both own and spouse's benefits. Although the stage 1 information treatment was about own benefits, it led a reduction of 9 percentage points or 16% of the baseline mean in the absolute perception gap for spousal benefits (green bar). This suggests that treated index spouses perhaps gain a more comprehensive understanding of the Social Security formula when initially learning about their own benefits. Moreover, the stage 3 information treatment specifically targeting spousal benefits leads to an additional reduction of approximately 13 percentage points or 23% of the baseline control mean. Consequently, the index spouses' expected benefits for their spouse become more closely aligned with the information provided. Overall, the revisions of absolute perception gap from stages 0 to 4 are of similar magnitude, about 22 pp, for own and spouse's expected benefits (Appendix Figure A5).

Figure 4 presents the average treatment effect (and Appendix Table A6 shows the corresponding estimates), but we anticipate heterogeneous treatment effects based on the baseline perception gap. Individuals with initial expectations lower (respectively, higher) than the provided information should update their expectations upward (respectively, downward). Figure 5 presents the treatment effect for the (Stage 4 - Stage 0) revision in index

spouse's beliefs as a function of the baseline perception gap. As anticipated, index spouses who initially overestimated (negative perception gap) adjusted their beliefs downward (average treatment effect of -56 percentage points for own benefit expectations). Conversely, those who initially underestimated (positive perception gap) updated their beliefs upward, with a treatment effect of +30 percentage points for own Social Security benefit beliefs. There is a treatment effect of essentially zero for individuals whose baseline beliefs were already closely aligned with the provided information. Overall, the updating patterns are consistent with index spouses responding to the informational content in the signal that is given to them.

FIGURE 5: Heterogeneity in the treatment effect on index spouse's benefit expectations, by terciles of baseline perception gaps



Note: The figure shows the average treatment effects (from baseline to endline) interacted with terciles of baseline perception gaps, estimated using equation (6), separately for index spouse benefits and secondary spouse benefits. The spikes show 95% confidence intervals. Appendix Table A7 shows the average treatment effects interacted with terciles of the baseline perception gaps separately from stage 0 to 2 and from stage 2 to 4.

Appendix Figure A6 explores the heterogeneity in the treatment effect for index spouses for own benefit expectations based on observable characteristics (Appendix Table A8 shows the corresponding estimates). For this analysis, we estimate equation (6) for different subsamples with the relevant characteristics. A more negative estimate suggests a larger decline in the absolute perception gap (that is, a larger treatment effect as the expectation becomes more aligned with the provided information). Looking across the various subsamples, we see that that the estimate is less negative (i.e., a smaller treatment effect) if the index spouse is in a couple where at least one spouse is above the age of 55 or if the couple's total earnings are below median. This may be due to these groups being better informed (see Tables 3 and A5).

We also see that the estimates are more negative (i.e., larger treatment effects) if the

index spouse trusts the information or is the financial decision-maker in the household, or if they are negatively surprised (i.e., they learn that their benefits will be lower than what they had expected). While none of these patterns are significant at conventional levels, they are quite sensible.

4.3 Information Spillover to Secondary Spouses

The main objective of the experimental analysis is to investigate whether information spills over to the secondary spouse. Specifically, we compare the *stage 5* beliefs of secondary spouses for treatment and control groups (hypothesis 2). This stage corresponds to the first elicitation of expectations from the secondary spouse, as highlighted by the orange cells in Figure B1.

For a secondary spouse s in couple c with an absolute perception gap $PG^h_{sc,st}$ at stage st and demographic characteristics X_{sc}, we run the regression:

$$PG^h_{sc,st} = \eta + \beta T_c + \theta X_{sc} + \epsilon_{jc,st}, \quad st \in \{5, 7\},\ h \in \{own, spouse\}, \tag{7}$$

where T_c is a dummy indicating if a couple was treated (that is, the index spouse in the couple received information), and X_{sc} is a vector of individual/couple-level characteristics, including education, age, ethnicity, gender, financial literacy and numeracy skills of both spouses. We use heteroskedasticity-robust standard errors. The parameter of interest is β. In the absence of spillovers, this will be zero for $st = 5$, i.e., when only the index spouse has received information. However, in the presence of spillovers, we expect this to be negative: that is, the absolute gaps of secondary spouses in treated couples should be smaller than those of secondary spouses in control couples.

Table 5 shows the estimates of this regression for $st = 5$. The dependent variable in the first two columns is the absolute perception gap in percentages for secondary spouse's beliefs about index spouse's and own benefits, respectively. We see that baseline (i.e., Stage 5) perception gaps of secondary spouses in treated couples are smaller by about 13 percentage points in both cases. Given that the baseline absolute perception gaps of control secondary spouses is about 53 to 55 percent, this is a sizable decline.

In addition, given that the average revision of 22 percentage points in the index spouse's absolute perception gap (Appendix Figure A5), this suggests that nearly half of the treatment is transmitted to the secondary spouse. This estimate is likely biased downwards since survey beliefs are reported with error. In a simulation exercise, we find that the spillover

TABLE 5: Information spillovers to the secondary spouse

	Percents		Dollars	
	(1)	(2)	(3)	(4)
	Index Sp Ben.	Sec Sp Ben.	Index Sp Ben.	Sec Sp Ben.
Treated Couple	-12.8^{***}	-12.6^{***}	-318.4^{***}	-299.2^{***}
	(2.4)	(2.7)	(63.4)	(69.1)
TE as % of CG Abs PG	-24.0	-22.9	-26.5	-25.2
Demog. Controls	✓	✓	✓	✓
Control Dep. Var Mean	53.3	55.1	1199.3	1189.5
Adj. R-Squared	0.0	0.1	0.1	0.1
Observations	2,029	2,006	2,029	2,006

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in the first two columns is the absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits as share of the predicted benefits by the SS Quick Calculator. The dependent variable in the last two columns is the absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits in dollars. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy for both the index and the secondary spouses. The observations numbers in the table might differ from the observation number of the sample of couple completes due to missing observations in the dependent variables.

would be much higher (with a median equivalent to 70% and a 90th percentile equivalent to 82% of the index spouse treatment effect, out of 1000 bootstrap repetitions) if there was full information-sharing and beliefs were reported with measurement error, suggesting that the incomplete sharing of information between spouses cannot be fully explained by measurement error alone.[17]

These results point to the presence of information spillovers, but also highlight substantial frictions in the flow of information within couples. To further benchmark the magnitude of the observed spillovers, we compare it to the belief updating that occurs when the secondary spouse receives the information directly. This occurs in treatment T1, where the secondary spouse is presented with the same information at stage 6 that the index spouse received earlier (see section 2.3). We re-estimate the regression in Equation (7) using stage $st = 7$ beliefs (post-information) and report the results in Table 6. We find that directly informing the secondary spouse reduces the absolute perception gap by approximately 28 percentage points compared to the control group, more than twice the size of the spillover

[17]To assess the potential role of measurement error, we assume full information sharing between spouses but that expectations are reported with error. We first assume the secondary spouses' stage 5 expectations are equal to the index spouses' stage 4 expectations, but that they are reported with classical measurement error, modeled as normally distributed with a standard deviation of 0.35, which corresponds to the standard deviation of the test-retest classical measurement error of the control index spouses as discussed in Section 3. We re-estimate equation (7) 1,000 times with different draws for the measurement error from the same distribution and obtain larger spillovers 905 times for index spouse benefits and 987 times for secondary spouse benefits . The histograms showing the distribution of spillovers as a share of the index spouse treatment effect are presented in Appendix Figure A7.

effect estimated in Table 5. This treatment effect serves as an upper bound for what information transmission could achieve in the absence of frictions.

TABLE 6: Secondary spouse average treatment effect - Stage 6 information for T1

	Percents		Dollars	
	(1) Index Sp Ben.	(2) Sec Sp Ben.	(3) Index Sp Ben.	(4) Sec Sp Ben.
Treated Couple	-27.4^{***}	-28.3^{***}	-663.5^{***}	-640.1^{***}
	(3.0)	(3.2)	(79.3)	(78.2)
TE as % of CG S7 Abs PG	-48.6	-48.7	-51.9	-52.2
Demog. Controls	✓	✓	✓	✓
Control Dep. Var Mean	56.3	58.0	1277.3	1225.6
Adj. R-Squared	0.1	0.1	0.1	0.1
Observations	961	954	961	954

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The sample used in the regressions includes the control group and T1 treatment group secondary spouses. The dependent variable in the first two columns is the stage 7 absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits as share of the predicted benefits by the SS Quick Calculator. The dependent variable in the last two columns is the stage 7 absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits in dollars. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy for both the index and the secondary spouses. The observations numbers in the table might differ from the total number of control group and T1 treatment group secondary spouses in the sample of couple completes due to missing observations in the dependent variables.

The fact that the spillovers fall far short of this upper bound provides strong evidence that there are substantive barriers to effective information flow between spouses. As outlined in our conceptual framework in section 4.1, these frictions may arise from limited communication, strategic considerations, or cognitive barriers, which we analyze below. Importantly, this pattern allows us to reject the idea that most couples fully share information but use it differently because, for example, they have different beliefs about the underlying data generation process.[18] If that were the case, the direct and indirect treatment effects would be of similar magnitude. Instead, the large gap between them suggests that information fails to circulate effectively within households.

One concern could be that the gap between spouses' surveys is relatively short, potentially limiting opportunities for communication. A longer interval could give the index spouse more time to share information, but it might also reduce recall. Although the time gap might be endogenous to treatment, we find no significant differences in its length by treatment status, nor do we find that the determinants of the gap vary across treatment and control groups (Appendix Table A10). To explore this further, we split the sample into terciles based on the time gap and re-estimate the spillover effects (Appendix Table A11).

[18]For instance, one spouse might anticipate a collapse of the Social Security system while the other does not.

Spillovers are largest for couples in the first tercile of the time gap distribution—that is, those with the shortest time between survey completions. This suggests that a longer time gap between spouses' surveys is unlikely to mitigate the frictions that we document.

4.4 Heterogeneity in Spillovers

Motivated by our conceptual framework, we next explore the heterogeneity in spillovers to better understand which types of couples experience larger information spillovers.

4.4.1 Heterogeneity Analysis

Figure 6 presents the heterogeneity analysis for the index spouse's expected benefits, with corresponding regressions in Appendix Tables A12-A16, panel A. As before, a larger negative treatment effect on the secondary spouse baseline absolute perception gap indicates greater spillovers. Appendix Figure A8, focusing on spillovers about the secondary spouse's benefits, shows overall similar patterns.

Value of Information: We explore whether information spillovers are greater in couples for whom the information holds higher value (hypothesis 3). We begin by considering treatment-related factors. Panel A of Figure 6 investigates heterogeneity by whether the index spouse finds the provided information credible.[19] About 60% of the index spouses find the information credible. Such individuals are precisely the ones who are leading to spillovers: in such couples, the absolute perception gap is lower by more than 18 percentage points versus by less than 4 percentage points for their counterpart couples. Additionally, spillovers are five times larger among couples where the index spouse's initial beliefs were less accurate (i.e., further from the predicted benefits presented), and for whom we expect the information to be more useful. The pattern and magnitude are the same for spillovers regarding the secondary spouses' benefits (see Figure A8).

Next, we explore the characteristics of couples for whom the information is likely more valuable—particularly those less familiar with the topic and with more time to adjust their savings or labor force participation, such as couples farther from retirement. Indeed, the figure shows that spillovers are primarily driven by couples under the age of 55, where the perception gap is lower by 16 percentage points. Additionally, the information on the index spouse's benefits is likely to be more valuable when both partners intend to claim on the

[19]The question was: "On a scale of 1 to 5 (where 1 is "Not At All" and 5 is "Fully""), how much do you trust this information?" An index spouse who selects 4 or 5 on this scale is coded as having found the information credible.

index spouse's record. Spillovers are around 50% larger when the secondary spouse plans to claim on the index spouse's record; however, this difference is not statistically significant at conventional levels (p-value of 0.13).

Overall, this aligns with the theoretical argument that information with higher perceived value is more likely to spill over from one spouse to the other.

Strategic Motivations: We next explore whether strategic motivations play a role in how information is shared (hypothesis 5). This relates to a literature, primarily from low-income countries, on the strategic concealment of information from spouses (e.g., Chen, 2013; de Laat, 2014; Ashraf, 2009). In situations of asymmetric information, there is typically a trade-off between maximizing individual gains and maximizing overall efficiency. In our context, an individual might seek to maximize personal utility by concealing information that weakens their bargaining position within the couple (e.g., discovering their own Social Security benefits are lower than expected, or their partner's benefits are higher).[20] However, withholding such information can be inefficient. For instance, sharing negative income shocks (e.g., that their own or their spouse's benefits are much lower than they had expected) may be beneficial, as failing to re-optimize the couple's choices in light of this information could have significant costs (especially when utility over consumption is concave). In contrast, the cost of not re-optimizing may be lower if the new information is positive (e.g., that benefits are higher than expected).[21]

The first two cuts in Panel B of Figure 6 investigate if the nature of spillovers differs by whether the index spouse received positive news (i.e., learning their predicted Social Security benefits are higher than their expectations) or negative news about their benefits. We find significantly larger spillovers when the news about the index spouse's benefits is negative. Similarly, spillovers are also greater when the index spouse learns negative information about their partner's Social Security benefits. The average reduction in the absolute perception gap is about 19-22 percentage points for negative news as opposed to 7-8 percentage points for positive news. These patterns are consistent with efficient sharing of information within the household, where individuals are more likely to share when the

[20] Conversely, they might be more likely to share information that strengthens their position (e.g., that their own benefits exceed expectations or their partner's benefits fall short).

[21] Individuals who experience a negative shock are more likely to have under-saved relative to the optimal saving-consumption path, while those who experience a positive shock are more likely to have over-saved. A priori, it is unclear whether under-saving or over-saving leads to greater welfare losses. However, for most agents with concave utility, bequest motives, borrowing constraints, and patience, under-saving is expected to be more detrimental. It can result in sharp consumption drops, unfulfilled bequest intentions, and limited flexibility to adjust consumption due to borrowing constraints.

cost of not re-optimizing decisions is likely higher. It is also possible that negative news, which tends to be more salient, is more likely to be shared; indeed, some papers in the literature on asymmetric belief updating tend to find more responsiveness to negative news (Benjamin, 2019).

To further test for the strategic motivations, we compare spillovers between more equal and less equal couples—specifically, whether both spouses are working or if there is a large difference in earnings. The rationale is that income or labor market differences between partners may proxy for differences in bargaining power within the household (Lundberg and Pollak, 1996), potentially leading to a greater motivation to hide in less-equal couples. However, we find no significant difference in information spillovers, suggesting that strategic motivations play a minimal role in sharing information about Social Security benefits.

Communication Frictions: Next, we examine potential costs that may hinder communication (hypothesis 4). These costs can arise from concerns of sparking conflict, stress from discussing financial topics, or diverging interests, as pointed out in our open-ended questions (see discussion in section 4.4.2). Panel C presents various analyses based on proxies for the absence of communication frictions within couples, such as agreement on the quality of their marital relationship, alignment in beliefs about total household earnings, and agreement on whether the index spouse handles financial decisions. Agreement on these factors likely indicates regular and effective communication, suggesting lower communications costs in such couples.

A couple is coded as being in less agreement if the difference between the marital satisfaction index for each spouse is above the sample median or if the difference in the two spouses' perception of the total household earnings is above the median. In each of the heterogeneity analyses in Panel C, spillovers are larger when the couple is in agreement. For example, the average reduction in the absolute perception gap of the secondary spouse is 19.0 percentage points in couples who are in more agreement regarding marital satisfaction versus 7.4 percentage points for those who are in less agreement. It is worth noting that the level of marital satisfaction is not a predictor of larger spillovers (see Panel E). This suggests that it is couples agreeing on the quality of the relationship (and not the quality level per se) that matters for information spillovers.

Cognitive frictions: We analyze heterogeneity in spillovers by potential cognitive costs (hypothesis 4), as the complexity of the Social Security system may pose challenges. Effective information transmission depends on the index spouse's ability to understand and

communicate the information, and the secondary spouse's ability to process it. Couples with higher education or financial literacy are likely better equipped to handle this process.

Panel D of Figure 6 shows heterogeneity based on couples' education, financial literacy, and the index spouse's comprehension of the information, as measured by follow-up questions. Overall, there is little evidence that cognitive frictions significantly influence information spillovers, as no clear patterns in treatment effects are observed across these groups.

Couple-based factors: Panel E concludes the analysis by investigating whether certain characteristics of the index spouse or couple influence information spillovers. Prior work has found evidence of larger spillovers in couples when the information is provided to the male (Conlon et al., 2022; Fehr et al., 2024). Spillovers are somewhat larger when the index spouse is male—reducing the perception gap by 16 percentage points compared to 10 percentage points when the index spouse is female—but this difference is not statistically significant (p = 0.24). The result is similar when looking at the secondary spouse Social Security benefits (Appendix Table A16, Panel D).

We also find that spillovers are weakly larger among couples with children under the age of 18 and among those with above-average net worth, suggesting that family structure and financial resources may influence how information is shared and internalized.

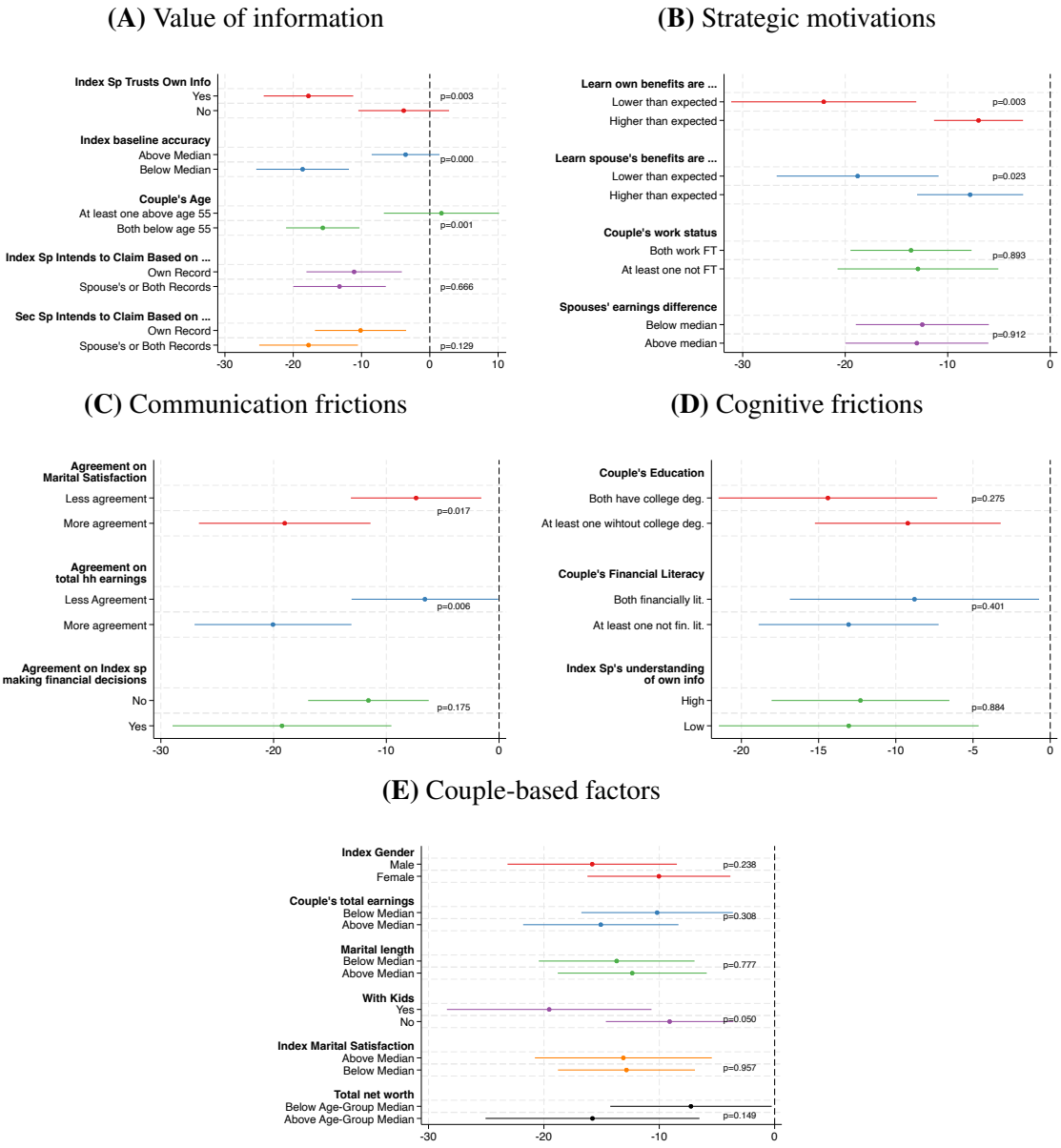
4.4.2 Alternative Interpretations

We now explore alternative interpretations for the results of our heterogeneity analysis. First, we investigate whether the observed smaller impact on some secondary spouse's perception gaps is due to the index spouse revising their expectations less following the information treatment, rather than actual lower spillovers of information between spouses. To address this, Appendix Figure A9 (and corresponding Appendix Tables A12-A16, panel B) presents the heterogeneity analysis of spillovers in the index spouse's benefits while controlling for the index spouse's baseline perception gap. The rationale for adding this control is that index spouses with larger perception gaps tend to update their expectations substantially more.[22]

The main effects are largely unchanged when controlling for the index spouse baseline

[22]We prefer not controlling for the index spouse's *revision* in perception gap as it is not pre-determined with respect to treatment (and is in fact endogenous), but note that the main results and heterogeneity analysis are similar when controlling for it.

FIGURE 6: Heterogeneity in information spillovers to the secondary spouse



Note: Figures show the spillovers in index spouse benefits estimated using equation (7) separately for different groups. Spikes show 95% confidence intervals and p-values are for testing difference in spillovers across mutually exclusive groups. Appendix Figure A8 shows the spillovers in secondary spouse benefits for the same groups.

perception gap (see Appendix Table A9). Moreover, with this new specification, the patterns remain identical to those described earlier, suggesting that the heterogeneity arises from processes occurring *after* the index spouse revises their beliefs.

Second, we examine whether the larger spillovers are mechanical, specifically whether

they are driven by groups with initially larger perception gaps, giving them more margin to adjust their expectations. This could change the interpretation of our findings. For instance, do younger couples have larger spillovers because the information is inherently more valuable to them, or because their initial perception gap is wider? To investigate this, we replicate our heterogeneity analysis using a within-group normalized perception gap as the dependent variable. Specifically, for each subgroup (e.g., younger vs. older couples), we calculate a z-score for the perception gap, with a mean of zero and a standard deviation of one. Appendix Tables A12-A16 panels C and F show the heterogeneity analysis in spillovers with this adjusted dependent variable. Our conclusions remain largely unchanged. For example, we still find significantly larger spillovers among couples where both spouses are under the age of 55 compared to older couples, or among couples whose index spouse's baseline perception gap in own benefits was below the median. Estimates for the subgroup receiving negative news are less precise but remain qualitatively consistent.

4.4.3 Dominant Factors in Information Spillovers and Multiple Hypothesis Testing

As we explore heterogeneity along many different characteristics, we face issues of multiple hypotheses testing. To mitigate this concern, we create summary indices by combining variables for each of the factors shown in panels (A)-(D) of Figure 6. Panel E variables are directly controlled for in this analysis, since it is not clear how to create a weighted index of couple-based factors.

For ease of interpretation, the indices are each standardized with mean 0 and standard deviation 1, and are constructed as follows:

- **Lack of Cognitive Barriers:** This index adds the following components: (i) both spouses have a college degree, (ii) the index spouse is financially literate, and (iii) the index spouse shows high comprehension in the information understanding checks (after receiving information about their own or their spouse's benefits). We sum these indicators and standardize the total.

- **Lack of Communication Frictions:** This index adds: (i) below-median disagreement in marital satisfaction, (ii) below-median disagreement in reported household earnings, and (iii) agreement that the index spouse is responsible for household financial decisions.

- **High Value of Information:** This index adds the variable from panel (A) of Figure 6 with one point for each of the following: (i) at least one spouse is under age 55, (ii) the index spouse's expected age 67 benefits are less accurate (i.e., below-median accuracy), (iii) the index spouse intends to claim based on the spouse's record, and (iv) the secondary spouse intends to claim based on the spouse's record.[23]

- **Negative News:** This index is based on whether the benefit information received is less favorable than initially expected. For index spouse spillovers, this reflects whether their projected benefits are lower than expected. For secondary spouse spillovers, it reflects whether the spouse's projected benefits are lower than initially expected.

- **Equal Couples:** This index includes one point each if (i) both spouses work full-time, and (ii) the earnings differential between them is below the median.

We bring all this together in Table 7 where the absolute perception gap for the secondary spouse is regressed onto an indicator for whether the index spouse was treated, and its interaction with the various indices (the indices are also included by themselves). We show the results in columns 1 and 2 for the index spouse's benefits and 3 and 4 for the secondary spouse's benefits. Columns 2 and 4 control in addition for the couple-based factors as in panel (E) of Figure 6.

The table reveals that the primary drivers of spillovers are the absence of communication frictions, a high value of information and receiving negative news. A one standard deviation increase in the lack of communication frictions index leads to spillovers that are 46% larger for index spouse's benefits (column 2) and 80% larger for secondary spouse's benefits (column 4). Similar, but slightly smaller, effect sizes are observed for the High Value of Information and Negative News indices. Given that sharing negative news likely yields greater informational benefits than sharing positive news, our results suggest that the value of information plays a crucial role in driving spillovers.

Overall, our results are consistent with cooperative models of decision-making with information frictions. Notably, despite focusing on a cognitively complex decision, our findings suggest that these frictions are not cognitive in nature but instead stem from barriers to communication. However, cognitive factors may still play a role in household information acquisition (for example, see Fuster and Zafar, 2023).

[23]When analyzing spillovers in secondary spouse benefit expectations, we use the secondary spouse's

TABLE 7: Factors in spillovers to the secondary spouse

	Index Sp Benefits		Sec Sp Benefits	
	(1)	(2)	(3)	(4)
Treated	-11.6^{***}	-13.9^{**}	-9.8^{***}	-10.2
	(2.6)	(6.4)	(2.9)	(6.8)
Treated × Lack of cogn barriers	0.6	1.1	3.5	3.2
	(2.1)	(2.3)	(2.4)	(2.8)
Treated × Lack of comm frictions	-6.4^{***}	-6.4^{***}	-7.6^{***}	-8.2^{***}
	(2.3)	(2.4)	(2.5)	(2.6)
Treated × High value of info	-5.5^{**}	-5.4^{**}	-5.4^{**}	-5.3^{*}
	(2.3)	(2.4)	(2.7)	(2.7)
Treated × Negative news	-5.2^{**}	-5.6^{**}	-6.6^{**}	-7.5^{***}
	(2.5)	(2.5)	(2.8)	(2.9)
Treated × Equal couples	2.6	2.0	-0.5	-1.0
	(2.3)	(2.3)	(2.5)	(2.5)
Couple-based Factors		✓		✓
Control Dep. Var Mean	53.3	53.3	55.1	55.1
Adj. R-Squared	0.1	0.1	0.1	0.1
Observations	2,029	2,029	2,006	2,006

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the Social Security quick calculator. The specifications also include the uninteracted indices. Robust standard errors are in parentheses. Appendix Table A17 shows the estimates when we also control for index spouse's baseline perception gaps in own or spouse's benefits. Demographics include the ethnicity and perception of own financial savviness of both the index and the secondary spouses. The observations numbers in the table might differ from the observation number of the sample of couple completes due to missing observations in the dependent variables.

4.4.4 Qualitative Evidence from the open-ended questions

To complement the findings from our analysis, we included several open-ended questions in a follow-up survey, focusing on within-couple communication. This approach aligns with recent work in economics that uses open-ended questions to explore what is top of mind for individuals (Haaland et al., 2025). 153 couples were successfully re-interviewed between May 29 and July 31, 2024, about 27 months after the first survey. These respondents look largely similar to our original sample. Specifically, respondents were asked: "*Tell us a little bit about how often you discuss financial issues with your spouse. Specifically, what kinds of issues do you discuss, who has more information typically, who ends up taking advice from the other spouse, etc.*"

These open-ended responses are consistent with our heterogeneity analysis of spillover effects. Couples frequently emphasize that financial discussions revolve around managing savings and planning for retirement, suggesting that information on Social Security benefits could be particularly valuable. Additionally, many responses indicate joint decision-

benefit accuracy instead of the index spouse's.

making in this area, highlighting the importance of sharing information between partners. However, the responses also point out key barriers to communication. Stress and fear of conflict are prominent reasons for avoiding financial discussions. Furthermore, the fact that many couples discuss finances on a weekly or monthly basis suggests the existence of a fixed cost of initiating such conversations. We summarize the findings in greater detail, together with word clouds in Appendix C.

5 Alignment of Intended Claiming Ages

We have shown that there are substantial spillovers of the provided information to the secondary spouse, and that there is meaningful heterogeneity in the spillovers. We now examine how information transmission (or lack thereof) within couples affects intra-household decision-making. To investigate this, we focus on the alignment in expected claiming ages for a given spouse, as discussed in Section 3.3. While we do not know the optimal claiming ages for couples, it must be the case that couples are not optimizing their current saving and labor supply decisions if one spouse expects the other spouse to retire and/or claim much later or earlier than what is intended by the spouse themselves.

Before turning to alignment, we first examine whether information provision leads index spouses to update their expected claiming ages. Specifically, we estimate the same specification as in Equation (6), but with revision in index spouses' expectations for their own and for their spouses' claiming ages as the dependent variable, respectively. Appendix Table A18 shows that index spouses revise their expected claiming age upward by 0.35 years (around 4 months) and their expectations about their spouses' claiming age by 0.45 years (around 5.4 months) after receiving the stage 1 and stage 3 information treatments.

Next, we consider alignment in spouses' expectations (hypothesis 6). Our measure of alignment is the absolute distance between spouses' reported expected claiming ages for the *same* spouse. For example, |index spouse's own claiming age expectation at stage 0 - secondary spouse's claiming age expectation for index spouse at stage 5| is the absolute distance in index and secondary spouses' beliefs about index spouse's claiming age at the baseline of their respective surveys (i.e., before they directly receive any information). We denote this as $D_{c,0,5}$.[24] Likewise, $D_{c,4,5}$ is the absolute distance between the index spouse's updated expectation at stage 4 (after receiving information) and the secondary spouse's baseline expectation at stage 5. The change in alignment due to the information treatment

[24]Because secondary spouses are first interviewed at stage 5, we do not observe their baseline expectations at stage 0, and therefore cannot construct a $D_{c,0,0}$ measure of alignment.

to the index spouse is captured by $D_{c,4,5} - D_{c,0,5}$. A decrease in this measure indicates improved alignment as a result of information provision and/or spillovers.

We run the same specification as in equation (7) except that this misalignment measure is the dependent variable; we cluster standard errors at the couple level.[25] Only T1 and Control couples are used for this analysis.[26] Estimates are presented in the first column of Table 8. We observe an average decrease of 1.1 months in misalignment when the index spouse is provided with information. When we restrict our sample to couples which had misalignment in their baseline expectations, in column 2, we find an economically and statistically decrease in misalignment of 3.4 months (roughly 9% of the control group baseline average). This is a meaningful effect and suggests that some efficiency gains are possible (that is, misalignment can decrease) when only one spouse is targeted with information.

An important question is whether additional gains—specifically, further reductions in misalignment—can be achieved when both spouses receive the information. To explore this, we leverage the T1 treatment, in which the secondary spouse was also provided with the same information as the index spouse at stage 6. The dependent variable of interest is $D_{c,4,7} - D_{c,0,5}$, i.e., the change in misalignment when both spouses have received and processed the information (stage 4 for the index spouse and stage 7 for the secondary spouse, as shown in Figure B1). Columns 3 and 4 of Table 8 show a reduction in the absolute distance, significant for couples with misaligned beliefs at the baseline, implying that providing information to both spouses closes the baseline misalignment gap by around 5.2 months (13.4% of the control group baseline average). Even though the estimates in columns 2 and 4 are not statistically different (p-value=0.17), this suggests that informing both spouses may lead to weakly greater alignment in expected claiming age compared to informing only one spouse, even in the presence of information spillovers.

[25]Here, the dependent variable is a vector of the absolute distance between spouses' reported expected claiming ages for both the index and the secondary spouse. This implies that, for couples with non-missing information, there will be 2 observations per couple.

[26]We exclude secondary spouses in T2 since they received a different information treatment. This restriction allows us to compare the effect of providing the same information to one spouse versus both spouses in the same sample.

TABLE 8: Alignment in beliefs about Social Security benefit claiming age

	Only Index Sp Receives Info		Both Sp Receive Info	
	(1)	(2)	(3)	(4)
	$D_{c,4,5} - D_{c,0,5}$	$D_{c,4,5} - D_{c,0,5} \mid D_{c,0,5} \neq 0$	$D_{c,4,7} - D_{c,0,5}$	$D_{c,4,7} - D_{c,0,5} \mid D_{c,0,5} \neq 0$
Treatment	-1.1	-3.4^{**}	-1.8	-5.2^{***}
	(1.3)	(1.6)	(1.5)	(2.0)
Demog. Controls	✓	✓	✓	✓
Control Gr Baseline Mean	24.1	38.9	24.1	38.9
Adj. R-squared	0.01	0.01	0.00	0.01
Observations	2,683	1,692	2,683	1,692

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The sample used in the regressions includes couples in the control group and T1 treatment group. There are two observations for each couple (if the dependent variable is not missing). The dependent variable in the first column is the difference in the absolute distance between index spouse's stage 4 and secondary spouse's stage 5 claiming age expectations and in the second column it's the same difference as in column 1, conditional on the absolute distance between index spouse's stage 4 and secondary spouse's stage 5 claiming age expectations being different than 0. In the third column, the dependent variable is the difference in the absolute distance between index spouse's stage 4 and secondary spouse's stage 7 claiming age expectations and the absolute distance between index spouse's stage 0 and secondary spouse's stage 5 claiming age expectations and in the last column it is the same difference as in column 3, but conditional on the absolute distance between index spouse's stage 0 and secondary spouse's stage 5 claiming age expectations being different than 0. Standard errors are clustered at the couple level. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy for both the index and the secondary spouses. The observations numbers in the table might differ from the total number of index and secondary spouses from couples that are in the control group and T1 treatment group in the sample of couple completes due to missing observations in the dependent variables.

6 Conclusion

This paper combines descriptive and experimental evidence to shed light on how expectations align and how information flows within couples. Contrary to traditional economic models assuming perfect information flow within couples, we document significant misalignment in expectations about Social Security benefits. In our sample of U.S. middle-aged couples, the correlation of Social Security expectations is 0.70, on average. Heterogeneity analysis reveals systematic differences: couples with higher earnings and greater marital satisfaction exhibit stronger alignment, with the correlation falling to 0.45 among lower-earning couples. Comparable correlations, ranging from 0.39 to 0.64, emerge for expectations concerning unemployment, inflation, stock market prices, household spending growth, and earnings growth. These descriptive findings fill an important gap in our understanding of expectation formation within households.

We complement this descriptive evidence with a randomized information experiment to isolate the causal transmission of information within couples. When one spouse receives exogenous information about future Social Security benefits, roughly half of the treatment effect spills over to the untreated spouse. The magnitude of this spillover depends primarily on the value of the information and communication frictions within couples, with little evidence of strategic motives to hide (or share). While most of the limited literature on

this topic has focused on gender dynamics, our results highlight broader patterns of heterogeneity in spillovers. Importantly, we also find that the information treatment enhances conditions for better intra-household decision-making.

The descriptive and experimental analyses offer complementary perspectives and key insights on the same underlying process. In the descriptive data, alignment reflects the cumulative outcome of long-run information acquisition and communication, while the experiment isolates short-run causal mechanisms when information is introduced exogenously. For some subgroups—such as lower-earning couples who display weaker baseline alignment but similar spillovers as their counterparts—the results suggest that couples may not always recognize the value of information they acquire on their own. When information is provided exogenously, its relevance becomes salient, prompting communication that might not occur in everyday contexts. Taken together, the two approaches reveal a consistent pattern: within-household information frictions are pervasive but heterogeneous, and communication costs play a central role in shaping how expectations are formed and updated.

Generally, while information experiments have become central to the empirical study of expectations, much less is known about the determinants of information *acquisition*, which is an essential aspect of expectations formation. Our experimental design, like others in this literature, shuts down the acquisition channel for the index spouse to focus cleanly on information spillovers. However, by examining spillovers to the secondary spouse–whose updating presumably depends on both endogenous information acquisition and processing– we extend existing work. Acquiring information from one's spouse is likely an important pathway through which households form expectations relevant for joint decisions. Future work should examine more directly the dynamics and determinants of information acquisition within households.

Our results have implications for both theory and policy. From a modeling perspective, they call for extending cooperative models of household decision-making to incorporate information frictions and heterogeneous beliefs, much as collective models already accommodate heterogeneous preferences. Modeling information flow as a frictional process, shaped by incentives, communication costs, and relationship quality, could provide new insights into how households aggregate information. More work is also needed to understand how expectations are aggregated for joint-decision-making process. From a policy perspective, our findings highlight that intra-household information barriers can limit the effectiveness of interventions that target only one household member. Policies that facili-

tate shared access to information, such as synchronized benefit statements, joint financial portals, or coordinated communications, may enhance both information transmission and the quality of joint decisions. More broadly, our results underscore the need to incorporate household dynamics into the design and evaluation of financial information policies.

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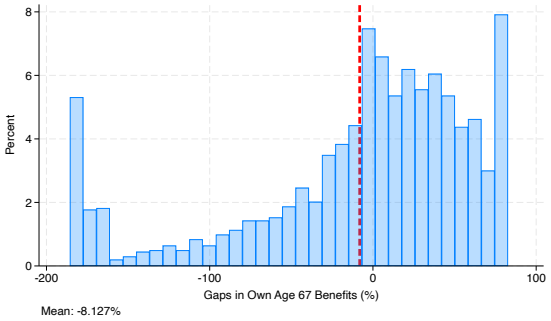
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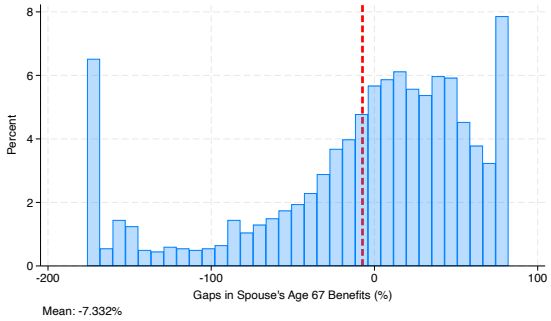
Appendix A Figures and Tables

FIGURE A1: Perception gaps in own and spouse's age 67 benefits

(A) Own benefits

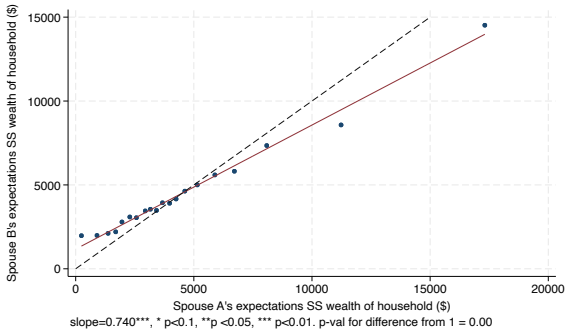


(B) Spouse's benefits



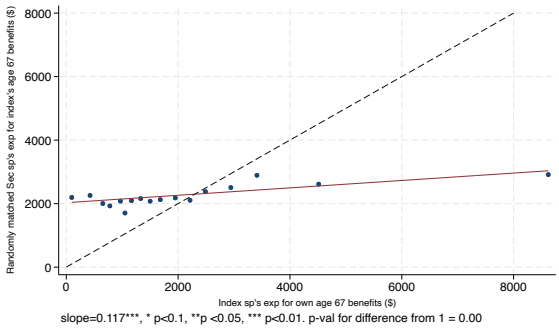
Note: The figures show the histograms for respondents' perception gaps in their own (left panel) and in their spouses' (right panel) age 67 benefits. Gaps are defined as $\frac{\text{Predicted benefits by the SSA calculator - Expected benefits}}{\text{Predicted benefits by the SSA calculator}}$. Gaps are winsorized at the top and bottom 5%. The red, vertical, dashed lines represent the mean of respondents' own (left panel) and spouses' (right panel) perception gaps.

FIGURE A2: Within-couple expectations for Social Security wealth



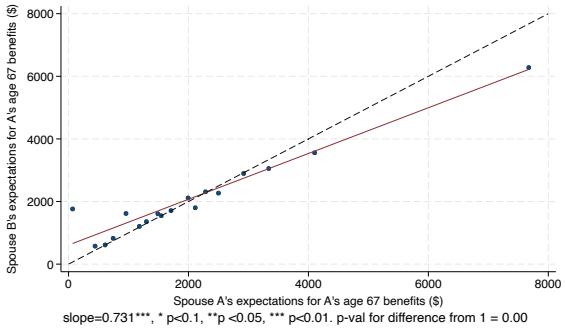
Note: The correlation between spouses' expectations for household's SS wealth is 0.74 (same as the regression slope shown in the figure) and this correlation falls to 0.68, when we exclude couples with SS wealth expectations above $8,000. The correlation coefficient between the two variables used in the binscatter is 0.74, which is statistically different than 1 (p-value=0.00).

FIGURE A3: Correlation between spouses' benefit expectations - Randomly matching spouses



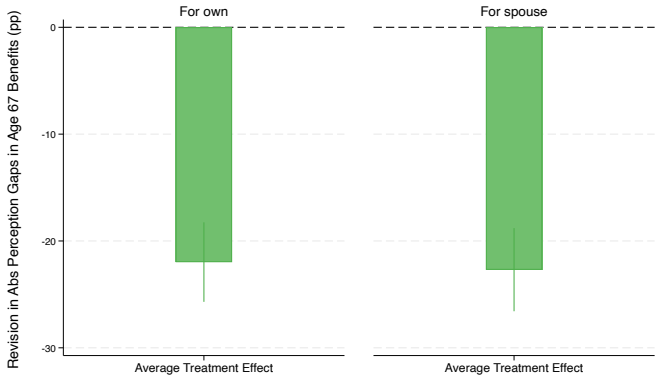
Note: The correlation coefficient between spouses' expectations for a given spouses' age 67 benefits falls to 0.12, when we randomly match secondary spouses to primary spouses based on the index spouses' characteristics (gender, age, education and employment status). This correlation is statistically different than 0.70 (p-value=0.00), which is the observed correlation coefficient between spouses' expectations in the data.

FIGURE A4: Correlation between spouses' benefit expectations - Couples with accurate earnings perceptions



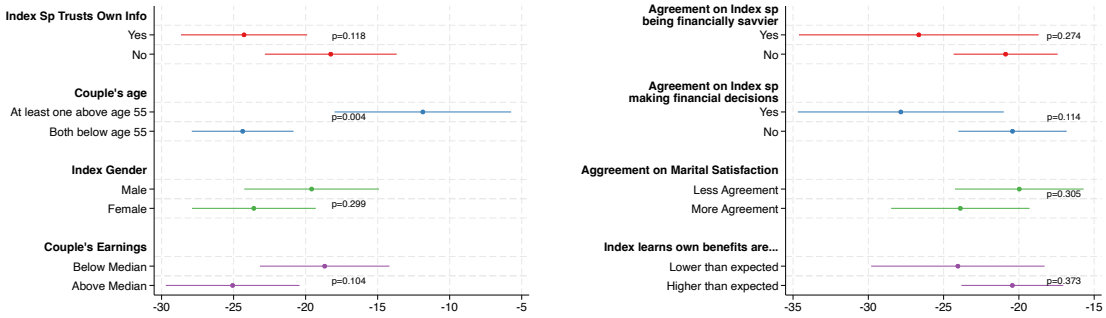
Note: The correlation coefficient between spouses' expectations for a given spouses' age 67 benefits is 0.75, when we restrict our sample to couples with accurate earnings perceptions. This correlation is statistically different than 1 (p-value=0.00).

FIGURE A5: Treatment Effect on index spouse's absolute perception gaps



Note: The figure shows the average treatment effects from baseline to the endline, estimated using equation (6), separately for index spouse benefits and secondary spouse benefits.

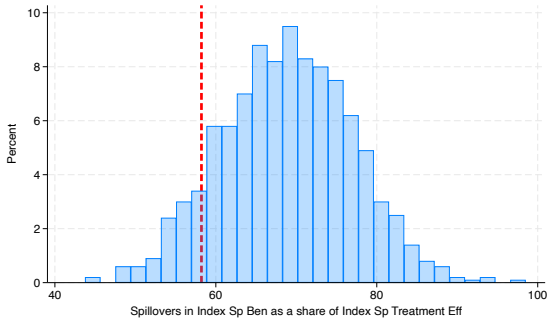
FIGURE A6: Heterogeneity in the treatment effects on index spouse's absolute perception gaps about own age 67 benefits



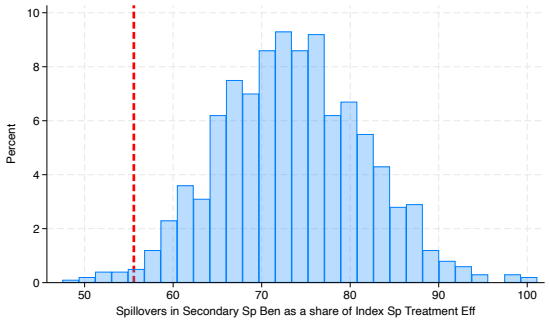
Note: The figure shows the average treatment effects for the index spouse benefits from Stage 0 to Stage 4, estimated using equation (6), separately by different index spouse or couple characteristics. The figures include the 90% confidence intervals. Appendix Table A8 presents the estimates.

FIGURE A7: Information spillovers to the secondary spouse - With test-retest measurement error

(A) Index spouse benefits



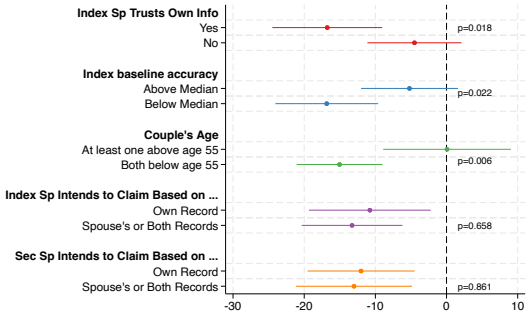
(B) Index spouse benefits



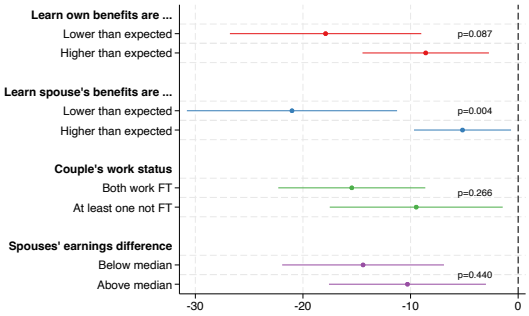
Note: The figure shows the histograms of spillovers in index spouse benefits (left) and secondary spouse benefits (right) as a share of the index spouse's revision in own or spouse's benefits from Stage 0 to Stage 4, across 1000 bootstrap repetitions. For this exercise, we assume that there are full spillovers, but that secondary spouses report their beliefs with measurement error with a standard deviation equal to the test-retest measurement error. The red vertical dashed lines represent the estimated spillovers as a share of the index spouse treatment effect. In the left panel, spillovers with measurement error are higher than the actual spillovers 90.5% of the repetitions, while on the right spillover with measurement error are higher than the actual spillovers 98.7% of the repetitions.

FIGURE A8: Heterogeneity in information spillovers to the secondary spouse - Secondary spouse benefits

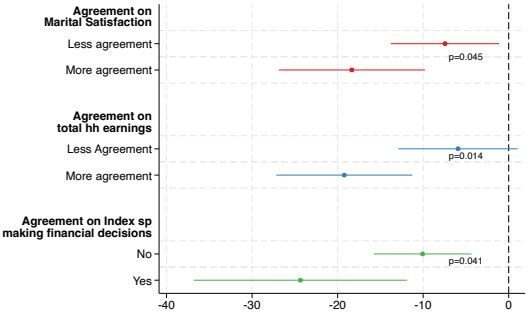
(A) Value of information



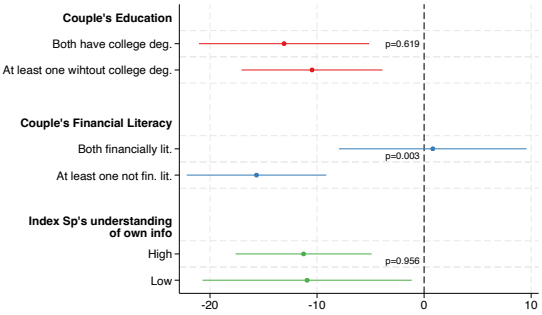
(B) Strategic motivations



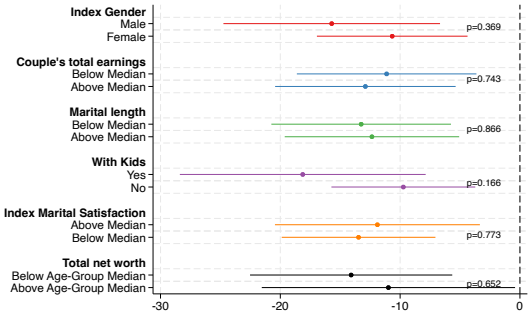
(C) Communication frictions



(D) Cognitive frictions

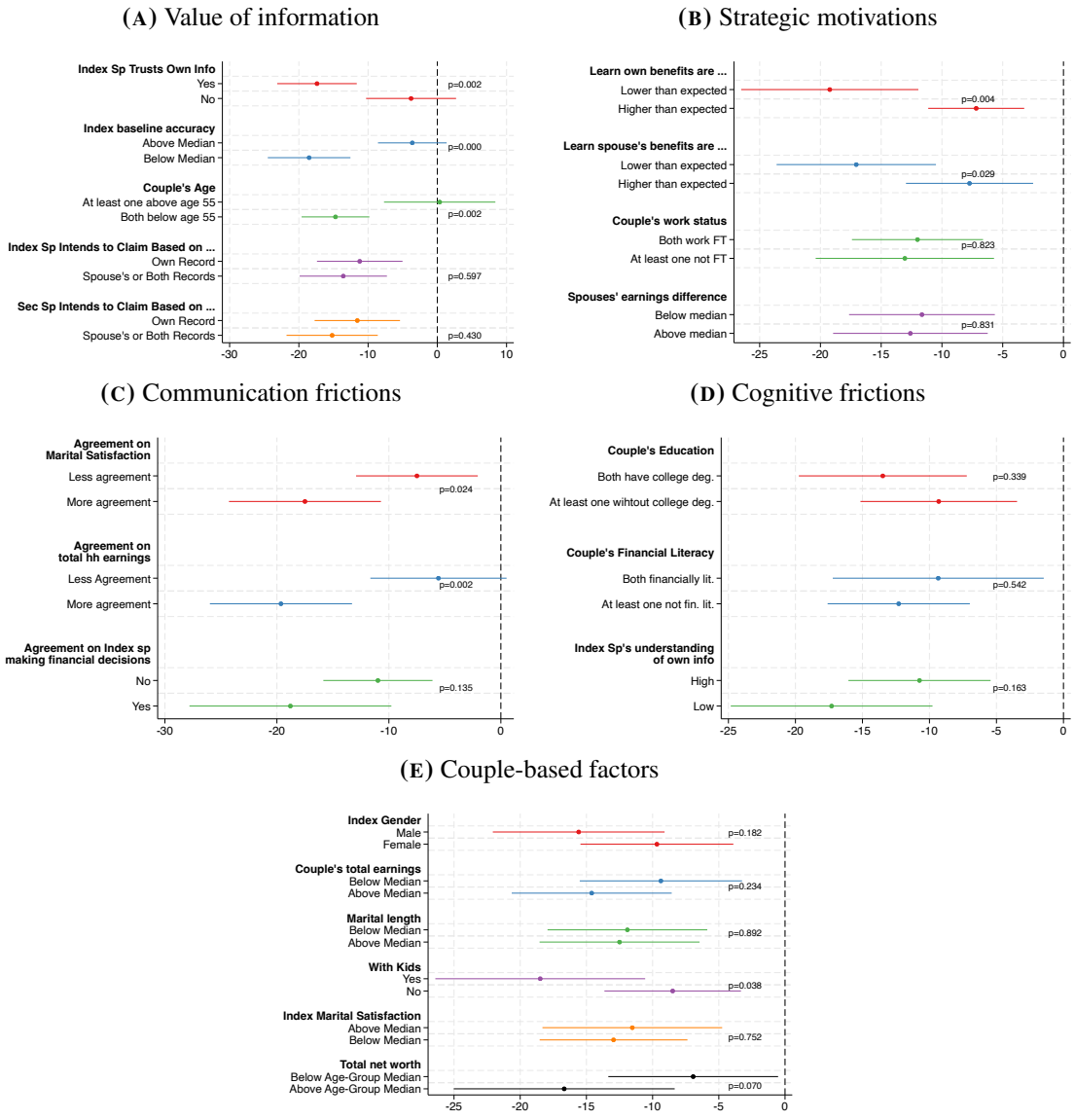


(E) Couple-based factors



Note: Figures show the spillovers in secondary spouse benefits estimated using equation (7) separately for different groups.

FIGURE A9: Heterogeneity in information spillovers about index spouse's benefits to the secondary spouse - Controlling for index spouse's baseline perception gap



Note: Figures show the spillovers in index spouse benefits estimated using equation (7) and controlling for index spouse's baseline perception gap in own benefits, separately for different groups.

TABLE A1: Selection of secondary spouses into completing the survey

	Pr(sec spouse responding) Control	Pr(sec spouse responding) Treatment	p-val of differences btw C and T
Female	-1.765	-1.061	0.78
	(2.03)	(1.15)	
College Grad.	2.205	2.635*	0.89
	(2.35)	(1.38)	
Age above 45	0.695	3.445***	0.22
	(1.89)	(1.13)	
Have child under age 6	-0.919	-1.911	0.68
	(2.38)	(1.33)	
Age expected to start claiming SS benefits	-0.121	0.005	0.76
	(0.35)	(0.16)	
Age expected for sp to start claiming SS benefits	0.117	-0.337*	0.31
	(0.40)	(0.18)	
Above median earnings	1.788	-2.607**	0.10
	(2.33)	(1.25)	
Work full-time	-3.815	-4.597**	0.83
	(3.25)	(1.93)	
Reports making financial dec.	-0.647	-3.758***	0.15
	(1.92)	(1.10)	
Financially literate	10.228***	10.538***	0.94
	(2.53)	(1.39)	
Above median marital satisf.	-1.608	0.036	0.26
	(1.85)	(1.08)	
Abs perception gap in own benefits (%)	-0.036***	-0.013*	0.10
	(0.01)	(0.01)	
Abs perception gap in spouse's benefits (%)	0.030**	0.011	0.28
	(0.02)	(0.01)	
Below median marital length	-1.514	0.440	0.38
	(1.89)	(1.10)	
% Chance of Receiving SS Benefits	-0.059	-0.043	0.80
	(0.06)	(0.03)	
% Chance of Spouse Receiving SS Benefits	0.044	0.066**	0.71
	(0.06)	(0.03)	
Dep. Var. Mean	22.568	25.522	
R^2	0.043	0.041	
Observations	2,220	6,939	

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is a binary variable showing whether the secondary spouse completed the survey. The observable characteristics included in the regression are index spouse's characteristics. All spouse-related variables are reported by the index spouse.

TABLE A2: Comparison of marital satisfaction of spouses within a couple

Quartiles of Secondary Sp's Marital Satisfaction	Quartiles of Index Sp's Marital Satisfaction			
	Q1	Q2	Q3	Q4
Q1	17.5	4.6	2.2	0.7
Q2	6.8	11.4	5.7	1.2
Q3	2.5	6.9	18.3	2.9
Q4	0.7	2.0	6.6	10.0

Note: The table shows within-couple variation in the marital satisfaction index. Each cell in the table shows the share of couples with each spouses' marital satisfaction index in the specified quartiles. A higher value of the index indicates greater satisfaction.

TABLE A3: Comparison to the CPS

	Survey	2022 CPS
Female	0.59	0.42
White	0.88	0.80
Age < 45	0.54	0.28
Age 45-50	0.19	0.26
Age > 50	0.27	0.45
College degree	0.65	0.47
Employed	0.85	0.86
Weekly earnings ($) for College Grads	2033.95	1804.50
Weekly earnings($) for Non-College	975.99	1098.74
Unemployed	0.03	0.02
Midwest	0.31	0.21
South	0.37	0.38
West	0.20	0.23
Observations	2,219	104,937

Note: The table compares the background characteristics of the index spouses from our survey to the married, non-retired household heads in the 2022 CPS. The left-out Census region is Northeast.

TABLE A4: Index Spouse Social Security Expectations at Baseline (Stage 0)

	Index Spouse			
	All	Control	Treated	P-Value
Expected own age 62 benefits ($)	2017.6	1910.0	2048.2	0.19
Expected own age 67 benefits ($)	2345.9	2227.5	2379.6	0.15
Expected own age 70 benefits ($)	2690.9	2609.4	2714.2	0.37
Expected SS benefit claiming age	66.5	66.6	66.5	0.39
Expected age 62 benefits for the spouse ($)	1865.5	1839.1	1873.1	0.69
Expected age 67 benefits for the spouse ($)	2270.7	2279.3	2268.2	0.91
Expected age 70 benefits for the spouse ($)	2631.8	2641.9	2628.9	0.91
Expected SS benefit claiming age for the spouse	66.0	66.2	65.9	0.14
Own benefits				
Predicted age 62 benefits by the SSA calculator ($)	1403.6	1385.2	1408.9	0.51
Absolute gap in own age 62 benefits ($)	1131.2	1074.7	1147.3	0.36
Share overestimating	52%	51%	52%	0.56
Share underestimating	41%	42%	40%	0.55
Predicted age 67 benefits by the SSA calculator ($)	2036.5	2010.0	2044.1	0.51
Absolute gap in own age 67 benefits ($)	1209.2	1162.5	1222.6	0.38
Share overestimating	44%	44%	45%	0.71
Share underestimating	49%	49%	49%	0.80
Predicted age 70 benefits by the SSA calculator ($)	2559.3	2525.3	2568.9	0.50
Absolute gap in own age 70 benefits ($)	1409.9	1371.7	1420.8	0.49
Share overestimating	40%	40%	39%	0.83
Share underestimating	55%	54%	55%	0.77
Benefits for the spouse				
Spouse's predicted age 62 benefits by the SSA calculator ($)	1331.9	1293.4	1342.8	0.14
Absolute gap in spouse's age 62 benefits ($)	1017.5	1005.7	1020.8	0.80
Share overestimating	52%	53%	52%	0.59
Share underestimating	40%	40%	41%	0.73
Spouse's predicted age 67 benefits by the SSA calculator ($)	1930.7	1876.3	1946.2	0.15
Absolute gap in spouse's age 67 benefits ($)	1210.6	1198.0	1214.1	0.81
Share overestimating	45%	47%	44%	0.24
Share underestimating	50%	47%	50%	0.17
Spouse's predicted age 70 benefits by the SSA calculator ($)	2431.1	2362.9	2450.5	0.15
Absolute gap in spouse's age 70 benefits ($)	1439.0	1410.0	1447.3	0.61
Share overestimating	40%	42%	40%	0.35
Share underestimating	54%	52%	55%	0.31
Observations	2,219	492	1,727	

Note: The table shows the average expected benefits of the index spouses. In the bottom panel of the table, absolute gap is defined as the absolute value of the difference between the predicted benefits by the SS Quick calculator and the benefit expectations of the respondent.

TABLE A5: Heterogeneity in index spouses' absolute perception gaps in own age 67 benefits

	Average Abs Gap in Own Age 67 benefits	p-value of differences across groups
Overall	53.332***	
Male	53.350***	
Female	53.314***	0.98
Below age 55	54.837***	
Above age 55	42.546***	0.00
Couple below-median earnings	49.273***	
Couple above-median earnings	56.731***	0.00
No college	44.196***	
College grad.	57.830***	0.00
Not financially lit.	58.428***	
Financially lit.	43.027***	0.00

Note: The table shows the average absolute perception gaps of index spouses for their own age 67 benefits as a share of the benefits predicted by the SSA calculator. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, show the statistical difference of the average absolute perception gaps from 0. The last column shows the p-value of the differences in the average absolute gaps across the mutually exclusive groups, as defined in the first column.

TABLE A6: Average treatment effects on index spouse's absolute perception gaps in own and spouse's age 67 benefits

	(1) Rev in Abs PG in own age 67 ben (pp) S0-S2	(2) Rev in Abs PG in own age 67 ben (pp) S2-S4	(3) Rev in Abs PG in own age 67 ben (pp) S0-S4	(4) Rev in Abs PG in sp age 67 ben (pp) S0-S2	(5) Rev in Abs PG in sp age 67 ben (pp) S2-S4	(6) Rev in Abs PG in sp age 67 ben (pp) S0-S4
Average Treatment Effect	-21.73***	-0.37	-21.98***	-8.98***	-12.99***	-22.69***
	(2.03)	(1.34)	(1.90)	(2.01)	(1.46)	(1.98)
Baseline Control Abs PG	55.2	54.4	54.6	55.3	55.1	54.1
Dep. Var. Mean	-17.46	0.08	-17.51	-6.53	-6.95	-14.04
R^2	0.06	0.01	0.06	0.02	0.05	0.06
Observations	1,507	1,438	1,535	1,558	1,466	1,553

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in the first column is the revision in the absolute perception gap (PG) of the index spouse in their own age 67 benefits from Stage 0 to Stage 2; in the second column the dependent variable is the revision in absolute PG in index spouse's own age 67 benefits from Stage 2 to 4 and in the third column it is the revision from Stage 0 to 4. The dependent variables in the fourth, fifth and the sixth columns are the equivalent of the dependent variables in the first three columns, for secondary spouse's benefits. The absolute perception gaps in all columns are measured as the absolute perception gaps as shares of benefits calculated by the SSA Quick Calculator. Demographics are also included in all columns and these include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses.

TABLE A7: Treatment effects on index spouse's beliefs about own and spouse's age 67 benefits, by terciles of the baseline perception gap

	(1) Rev in Exp about own age 67 ben (pp) S0-S2	(2) Rev in Exp about own age 67 ben (pp) S2-S4	(3) Rev in Exp about own age 67 ben (pp) S0-S4	(4) Rev in Exp about sp age 67 ben (pp) S0-S2	(5) Rev in Exp about sp age 67 ben (pp) S2-S4	(6) Rev in Exp about sp age 67 ben (pp) S0-S4
Treatment × PG for Own $< p33$	-33.34***	-4.73	-56.41***			
	(5.50)	(3.40)	(9.23)			
Treatment × PG for Own $\in [p33, p66]$	4.88	2.73	8.37***			
	(3.01)	(2.19)	(3.16)			
Treatment × PG for Own $> p66$	26.21***	4.06**	30.63***			
	(3.59)	(1.98)	(4.11)			
Treatment × PG for Spouse $< p33$				-14.44**	-22.09***	-46.18***
				(6.36)	(4.57)	(12.26)
Treatment × PG for Spouse $\in [p33, p66]$				-0.76	-0.94	-1.85
				(3.25)	(2.47)	(3.77)
Treatment × PG for Spouse $> p66$				19.84***	8.61***	30.28***
				(4.13)	(2.20)	(4.73)
Baseline Control Exp.	2408.8	2380.7	2395.6	2333.0	2331.0	2311.2
Dep. Var. Mean	-3.76	1.86	-3.38	4.02	-0.28	1.63
R^2	0.32	0.02	0.21	0.18	0.06	0.10
Observations	1,507	1,436	1,535	1,558	1,464	1,553

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in the first column is the revision in index spouse's beliefs about their own age 67 benefits from Stage 0 to 2; in the second column the dependent variable is the revision in beliefs about own age 67 benefits from Stage 2 to 4 and in the third column it is the revision from Stage 0 to 4. The dependent variables in the fourth, fifth and the sixth columns are the equivalent of the dependent variables in the first three columns, for index spouse's beliefs about the secondary spouse's benefits. The revision in beliefs are measured as percentage point changes. Demographics are also included in all columns and these include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses. All columns also include dummies for the terciles of the baseline perception gaps.

TABLE A8: Heterogeneity in the treatment effects on index spouse's absolute perception gaps about own age 67 benefits

PANEL A:	Index Spouse Benefits									
	(1) Index Trusts Own Info	(2) Index Doesn't Trust Own Info	(3) Index Sp Above Med Uncertainty	(4) Index Sp Below Med Uncertainty	(5) At least one above 55	(6) Both sp below 55	(7) Index Gender Male	(8) Index Gender Female	(9) Total Earn. Below Med	(10) Total Earn. Above Med
Treated	−24.3***	−18.3***	−23.4***	−20.4***	−11.9***	−24.4***	−19.6***	−23.6***	−18.7***	−25.1***
	(2.7)	(2.8)	(3.1)	(2.4)	(3.8)	(2.1)	(2.8)	(2.6)	(2.7)	(2.8)
Difference Between Groups		6.0		3.1		−12.5***		−4.0		−6.4
TE as % of CG PG	−39.9	−39.4	−38.0	−41.9	−29.5	−42.4	−34.0	−45.0	−37.8	−42.6
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control Dep. Var Mean	0.8	−1.8	−0.3	−0.4	−6.6	0.9	−1.6	0.7	−0.0	−0.3
Adj. R-Squared	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
Observations	931	604	751	784	270	1,265	650	884	687	806

PANEL B:	Index Spouse Benefits							
	(1) Sp Agree Index Sp Fin. Savvier	(2) Sp Disagree Index Sp Fin. Savvier	(3) Aggr on Index Making Fin. Dec.	(4) Less Aggr on Index Making Fin. Dec.	(5) Less Aggr. on Mar. Sat	(6) More Aggr. on Mar. Sat	(7) Index Learns Own Ben Lower than exp	(8) Index Learns Own Ben Higher than exp
Treated	−26.6***	−20.9***	−27.8***	−20.4***	−20.0***	−23.9***	−24.1***	−20.4***
	(5.0)	(2.1)	(4.2)	(2.2)	(2.6)	(2.8)	(3.5)	(2.1)
Difference Between Groups		5.8		7.4		−3.9		3.6
TE as % of CG PG	−53.9	−37.7	−50.0	−37.6	−38.1	−41.8	−33.5	−49.9
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓
Control Dep. Var Mean	2.3	−0.9	0.1	−0.5	0.1	−0.8	−2.0	1.0
Adj. R-Squared	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Observations	220	1,304	317	1,218	785	749	693	841

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the revision in index spouse's beliefs about their own age 67 benefits from Stage 0 to 4. The revision in beliefs are measured as percentage point changes. Demographics are also included in all columns and these include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses. In column titles, "Sp Agree Index Sp Fin. Savvier" refers to "Spouses Agree Index Spouse is Financially Savvier" and "Mar. Sat" refers to marital satisfaction.

TABLE A9: Information spillovers to the secondary spouse - Controlling for index spouse's baseline perception gap

	Percents		Dollars	
	(1) Index Sp Ben.	(2) Sec Sp Ben.	(3) Index Sp Ben.	(4) Sec Sp Ben.
Treated Couple	-12.2^{***}	-10.4^{***}	-304.8^{***}	-236.4^{***}
	(2.2)	(2.4)	(57.2)	(62.3)
TE as % of CG PG	-22.9	-18.9	-25.4	-19.9
Demog. Controls	✓	✓	✓	✓
Control Dep. Var Mean	53.3	55.1	1199.3	1189.5
Adj. R-Squared	0.2	0.2	0.2	0.2
Observations	2,029	2,006	2,029	2,006

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in the first two columns is the absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits as share of the predicted benefits by the SS quick calculator. The dependent variable in the last two columns is the the absolute perception gap of the secondary spouse in index spouse's or their own age 67 benefits in dollars. All four regressions also control for the index spouse's baseline perception gap in their own (columns 1 and 3) or their spouse's (columns 2 and 4) benefits. Demographics include the ethnicity, education, gender, age group, and numeracy of both the index and the secondary spouses.

TABLE A10: Time gap between surveys and couple characteristics

	Time gap btw index survey end sec survey start	
	(1) Control	(2) Treatment
With kids	-0.23	-0.22
	(0.50)	(0.31)
Below median marital length	-0.68	-0.20
	(0.46)	(0.30)
Total earnings below med.	-0.57	-0.09
	(0.47)	(0.33)
Index spouse male	-0.27	0.40
	(0.43)	(0.30)
At least one sp above age 55	0.05	0.34
	(0.56)	(0.38)
Both college grads	0.67	0.10
	(0.47)	(0.34)
Both financially lit.	-0.10	-0.17
	(0.56)	(0.31)
Less agreement on marital sat.	0.28	0.27
	(0.44)	(0.29)
Both work FT	0.29	0.15
	(0.50)	(0.32)
Total net worth below age gr. med.	0.43	-0.21
	(0.53)	(0.35)
Index trusts Stage 1 info	-0.21	-0.46
	(0.47)	(0.33)
Dep. Var. Mean	2.49	2.53
R^2	0.020	0.005
Observations	446	1,583

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in both columns is the time gap between the end of the index spouse's survey and the start of the secondary spouse's survey. Robust standard errors are in parentheses.

TABLE A11: Information spillovers to the secondary spouse based on time gap between surveys

	Index Spouse Benefits			Secondary Spouse Benefits		
	(1) Time gap btw index survey end sec survey start first tercile	(2) Time gap btw index survey end sec survey start second tercile	(3) Time gap btw index survey end sec survey start third tercile	(4) Time gap btw index survey end sec survey start first tercile	(5) Time gap btw index survey end sec survey start second tercile	(6) Time gap btw index survey end sec survey start third tercile
Treated	-17.0^{***}	-12.1^{***}	-7.3^{*}	-20.1^{***}	-8.2^{*}	-9.2^{**}
	(4.2)	(4.6)	(3.8)	(4.6)	(4.8)	(4.5)
Difference Between Groups		4.9	9.6^{*}		11.8^{*}	10.9^{*}
spillover as % of index TE	0.6	0.6	0.3	0.4	0.4	0.4
Control Dep. Var Mean	53.4	54.0	52.6	56.4	54.6	54.5
Demog. Controls	✓	✓	✓	✓	✓	✓
Observations	673	672	684	664	666	676

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, financial literacy for both the index and the secondary spouses.

TABLE A12: Information spillovers to the secondary spouse by value of information

PANEL A:	Index Spouse Benefits									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Index Trusts Own Info	Index Doesn't Trust Own Info	Exp. Ben. Accuracy Above Median	Exp. Ben. Accuracy Below Median	At least one above 55	Both sp below 55	Index Claim Based on Own Record	Index Claim Based on Sp or Both Record	Sec Sp Claim Based on Own Record	Sec Sp Claim Based on Sp or Both Records
Treated	-17.8^{***}	-3.8	-3.5	-18.6^{***}	1.7	-15.7^{***}	-11.1^{***}	-13.2^{***}	-10.1^{***}	-17.8^{***}
	(3.3)	(3.4)	(2.5)	(3.5)	(4.4)	(2.7)	(3.6)	(3.5)	(3.4)	(3.7)
Difference Between Groups		13.9^{***}		-15.1^{***}		-17.4^{***}		-2.1		-7.6
Control Dep. Var Mean	58.2	47.4	33.5	72.6	34.6	57.2	50.0	55.5	51.0	57.2
PANEL B:	Index Spouse Benefits, controlling for baseline PG									
Treated	-17.4^{***}	-3.8	-3.6	-18.5^{***}	0.3	-14.7^{***}	-11.2^{***}	-13.6^{***}	-11.6^{***}	-15.2^{***}
	(2.9)	(3.3)	(2.5)	(3.0)	(4.2)	(2.5)	(3.1)	(3.2)	(3.1)	(3.4)
Difference Between Groups		13.6^{***}		-14.9^{***}		-15.1^{***}		-2.4		-3.6
Control Dep. Var Mean	58.2	47.4	33.5	72.6	34.6	57.2	50.0	55.5	51.0	57.2
PANEL C:	Index Spouse Benefits, normalized using z-scores									
Treated	-0.4^{***}	-0.1	-0.1	-0.4^{***}	0.1	-0.3^{***}	-0.2^{***}	-0.3^{***}	-0.2^{***}	-0.4^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.3^{**}		-0.3^{**}		-0.4^{***}		-0.0		-0.2
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control Dep. Var Mean	0.2	0.1	0.1	0.2	-0.0	0.2	0.2	0.2	0.1	0.2
Observations	1,214	815	1,010	1,019	376	1,653	903	972	1,005	867
PANEL D:	Secondary Spouse Benefits									
Treated	-16.8^{***}	-4.5	-5.2	-16.8^{***}	0.1	-15.0^{***}	-10.8^{**}	-13.3^{***}	-12.0^{***}	-13.0^{***}
	(3.9)	(3.4)	(3.5)	(3.7)	(4.6)	(3.1)	(4.4)	(3.6)	(3.8)	(4.2)
Difference Between Groups		12.3^{**}		-11.6^{**}		-15.1^{***}		-2.5		-1.0
Control Dep. Var Mean	63.3	45.7	40.0	68.6	35.1	59.5	54.4	55.3	50.0	61.0
PANEL E:	Secondary Spouse Benefits, controlling for baseline PG									
Treated	-15.3^{***}	-3.4	-3.3	-15.0^{***}	-0.8	-12.1^{***}	-9.8^{***}	-11.1^{***}	-10.5^{***}	-10.2^{***}
	(3.4)	(3.3)	(3.2)	(3.3)	(4.5)	(2.8)	(3.8)	(3.4)	(3.4)	(3.9)
Difference Between Groups		11.9^{**}		-11.6^{**}		-11.2^{**}		-1.4		0.2
Control Dep. Var Mean	63.3	45.7	40.0	68.6	35.1	59.5	54.4	55.3	50.0	61.0
PANEL F:	Secondary Spouse Benefits, normalized using z-scores									
Treated	-0.3^{***}	-0.1	-0.1	-0.3^{***}	0.0	-0.3^{***}	-0.2^{**}	-0.3^{***}	-0.3^{***}	-0.3^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.2^{*}		-0.2^{*}		-0.3^{**}		-0.1		0.0
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control Dep. Var Mean	0.2	0.1	0.1	0.2	0.0	0.2	0.1	0.1	0.2	0.1
Observations	1,165	841	964	1,042	380	1,626	853	986	1,010	835

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, and numeracy for both the index and the secondary spouses. Panels A-C show the spillovers in index spouse's benefits and D-F show the spillovers in secondary spouse's benefits. Panels A and D show estimates from equation (7), panels B and E show estimates from equation (7) also controlling for the baseline perception gap of the index spouse and panels C and F show the estimates from equation (7) by using within-group normalized (using a z-score) perception gaps as the dependent variable. In column titles, "Sec sp" refers to secondary spouse, "Age Gr Med" refers to Age Group Median.

TABLE A13: Information spillovers to the secondary spouse by strategic motivation

PANEL A:	Index Spouse Benefits							
	(1) Learn Own Ben Lower than exp	(2) Learn Own Ben Higher than exp	(3) Learn Sp Ben Lower than exp	(4) Learn Sp Ben Higher than exp	(5) Both sp work FT	(6) At least one sp not work FT	(7) Sp Earn Diff Below Median	(8) Sp Earn Diff Above Median
Treated	-22.1^{***}	-7.0^{***}	-18.8^{***}	-7.8^{***}	-13.6^{***}	-12.9^{***}	-12.5^{***}	-13.0^{***}
	(4.6)	(2.2)	(4.0)	(2.6)	(3.0)	(4.0)	(3.3)	(3.6)
Difference Between Groups		15.1^{***}		11.0^{**}		0.7		-0.5
Control Dep. Var Mean	67.2	43.5	61.5	46.0	53.6	52.7	53.2	53.1
PANEL B:	Index Spouse Benefits, controlling for baseline PG							
Treated	-19.2^{***}	-7.2^{***}	-17.1^{***}	-7.7^{***}	-12.0^{***}	-13.1^{***}	-11.6^{***}	-12.6^{***}
	(3.7)	(2.0)	(3.3)	(2.7)	(2.7)	(3.8)	(3.1)	(3.2)
Difference Between Groups		12.1^{***}		9.3^{**}		-1.0		-0.9
Control Dep. Var Mean	67.2	43.5	61.5	46.0	53.6	52.7	53.2	53.1
PANEL C:	Index Spouse Benefits, normalized using z-scores							
Treated	-0.398^{***}	-0.225^{***}	-0.356^{***}	-0.228^{***}	-0.296^{***}	-0.313^{***}	-0.275^{***}	-0.303^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.174		0.128		-0.017		-0.027
Control Dep. Var Mean	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓
Observations	875	1,149	928	1,085	1,220	809	973	1,007
PANEL D:	Secondary Spouse Benefits							
Treated	-17.9^{***}	-8.6^{***}	-21.0^{***}	-5.2^{**}	-15.5^{***}	-9.5^{**}	-14.4^{***}	-10.3^{***}
	(4.5)	(3.0)	(5.0)	(2.3)	(3.5)	(4.1)	(3.8)	(3.7)
Difference Between Groups		9.3^{*}		15.9^{***}		6.0		4.1
Control Dep. Var Mean	66.0	46.8	72.2	41.8	57.2	51.7	55.7	54.0
PANEL E:	Secondary Spouse Benefits, controlling for baseline PG							
Treated	-14.2^{***}	-8.4^{***}	-17.6^{***}	-6.1^{***}	-11.2^{***}	-9.5^{**}	-11.7^{***}	-9.0^{***}
	(4.0)	(3.0)	(4.2)	(2.1)	(3.1)	(3.9)	(3.4)	(3.5)
Difference Between Groups		5.8		11.5^{**}		1.8		2.7
Control Dep. Var Mean	66.0	46.8	72.2	41.8	57.2	51.7	55.7	54.0
PANEL F:	Secondary Spouse Benefits, normalized using z-scores							
Treated	-0.316^{***}	-0.228^{***}	-0.351^{***}	-0.156^{**}	-0.309^{***}	-0.212^{**}	-0.295^{***}	-0.217^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.088		0.195^{*}		0.097		0.078
Control Dep. Var Mean	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓
Observations	897	1,097	860	1,143	1,202	804	944	1,020

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, and numeracy for both the index and the secondary spouses. Panels A-C show the spillovers in index spouse's benefits and D-F show the spillovers in secondary spouse's benefits. Panels A and D show estimates from equation (7), panels B and E show estimates from equation (7) also controlling for the baseline perception gap of the index spouse and panels C and F show the estimates from equation (7) by using within-group normalized (using a z-score) perception gaps as the dependent variable.

TABLE A14: Information spillovers to the secondary spouse by communication factors

PANEL A:	Index Spouse Benefits					
	(1) Less Aggr. on Mar. Sat	(2) More Aggr. on Mar. Sat	(3) Less Aggr on Total Earn	(4) More Aggr on Total Earn	(5) Less Aggr on Index Making Fin. Dec.	(6) Aggr on Index Making Fin. Dec.
Treated	-7.4^{**}	-19.0^{***}	-6.6^{**}	-20.1^{***}	-11.6^{***}	-19.3^{***}
	(2.9)	(3.9)	(3.3)	(3.5)	(2.7)	(5.0)
Difference Between Groups		-11.7^{**}		-13.5^{***}		-7.7
Control Dep. Var Mean	50.2	56.9	51.7	54.6	52.9	54.7
PANEL B:	Index Spouse Benefits, controlling for baseline PG					
Treated	-7.5^{***}	-17.5^{***}	-5.6^{*}	-19.6^{***}	-11.0^{***}	-18.8^{***}
	(2.8)	(3.5)	(3.1)	(3.2)	(2.5)	(4.7)
Difference Between Groups		-10.2^{**}		-14.0^{***}		-7.6
Control Dep. Var Mean	50.2	56.9	51.7	54.6	52.9	54.7
PANEL C:	Index Spouse Benefits, normalized using z-scores					
Treated	-0.178^{**}	-0.405^{***}	-0.146^{**}	-0.480^{***}	-0.257^{***}	-0.485^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		-0.228^{**}		-0.334^{***}		-0.228
Control Dep. Var Mean	0.1	0.2	0.1	0.3	0.1	0.4
Demog. Controls	✓	✓	✓	✓	✓	✓
Observations	1,026	1,002	966	946	1,627	402
PANEL D:	Secondary Spouse Benefits					
Treated	-7.4^{**}	-18.3^{***}	-5.9^{*}	-19.2^{***}	-10.1^{***}	-24.3^{***}
	(3.2)	(4.4)	(3.6)	(4.1)	(2.9)	(6.5)
Difference Between Groups		-10.9^{**}		-13.3^{**}		-14.3^{**}
Control Dep. Var Mean	51.5	59.4	53.1	56.9	52.1	66.7
PANEL E:	Secondary Spouse Benefits, controlling for baseline PG					
Treated	-6.0^{**}	-15.2^{***}	-3.1	-17.6^{***}	-7.3^{***}	-23.9^{***}
	(3.0)	(3.9)	(3.4)	(3.6)	(2.6)	(5.9)
Difference Between Groups		-9.4^{*}		-14.5^{***}		-16.6^{***}
Control Dep. Var Mean	51.5	59.4	53.1	56.9	52.1	66.7
PANEL F:	Secondary Spouse Benefits, normalized using z-scores					
Treated	-0.166^{**}	-0.359^{***}	-0.120^{*}	-0.414^{***}	-0.209^{***}	-0.513^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		-0.192^{*}		-0.294^{***}		-0.304^{**}
Control Dep. Var Mean	0.1	0.2	0.0	0.3	0.1	0.4
Demog. Controls	✓	✓	✓	✓	✓	✓
Observations	1,027	978	982	957	1,627	379

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses. Panels A-C show the spillovers in index spouse's benefits and D-F show the spillovers in secondary spouse's benefits. Panels A and D show estimates from equation (7), panels B and E show estimates from equation (7) also controlling for the baseline perception gap of the index spouse and panels C and F show the estimates from equation (7) by using within-group normalized (using a z-score) perception gaps as the dependent variable.

TABLE A15: Information spillovers to the secondary spouse by cognitive factors

PANEL A:	Index Spouse Benefits					
	(1) Both college	(2) At least one not college	(3) Both Fin. Lit	(4) At least one Not Fin. Lit	(5) Index unders. check high score	(6) Index unders. check low score
Treated	-14.4^{***}	-9.2^{***}	-8.8^{**}	-13.1^{***}	-12.3^{***}	-13.0^{***}
	(3.6)	(3.1)	(4.1)	(3.0)	(2.9)	(4.3)
Difference Between Groups		5.2		-4.3		-0.8
Control Dep. Var Mean	58.6	47.6	45.9	55.4	51.3	56.7
PANEL B:	Index Spouse Benefits, controlling for baseline PG					
Treated	-13.5^{***}	-9.3^{***}	-9.3^{**}	-12.3^{***}	-10.7^{***}	-17.3^{***}
	(3.2)	(3.0)	(4.1)	(2.7)	(2.7)	(3.9)
Difference Between Groups		4.2		-3.0		-6.6
Control Dep. Var Mean	58.6	47.6	45.9	55.4	51.3	56.7
PANEL C:	Index Spouse Benefits, normalized using z-scores					
Treated	-0.3^{***}	-0.3^{***}	-0.2^{**}	-0.3^{***}	-0.3^{***}	-0.3^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.0		-0.1		0.0
Control Dep. Var Mean	0.2	0.2	0.2	0.2	0.2	0.1
Demog. Controls	✓	✓	✓	✓	✓	✓
Observations	1,117	912	487	1,542	1,446	583
PANEL D:	Secondary Spouse Benefits					
Treated	-13.1^{***}	-10.5^{***}	0.8	-15.7^{***}	-11.3^{***}	-10.9^{**}
	(4.0)	(3.4)	(4.5)	(3.3)	(3.2)	(5.0)
Difference Between Groups		2.6		-16.5^{***}		0.3
Control Dep. Var Mean	61.5	48.7	39.7	59.5	51.1	61.6
PANEL E:	Secondary Spouse Benefits, controlling for baseline PG					
Treated	-9.6^{***}	-10.1^{***}	0.9	-12.9^{***}	-9.6^{***}	-11.4^{**}
	(3.5)	(3.2)	(4.5)	(3.0)	(3.0)	(4.4)
Difference Between Groups		-0.5		-13.8^{**}		-1.8
Control Dep. Var Mean	61.5	48.7	39.7	59.5	51.1	61.6
PANEL F:	Secondary Spouse Benefits, normalized using z-scores					
Treated	-0.2^{***}	-0.3^{***}	0.0	-0.3^{***}	-0.3^{***}	-0.2^{**}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		-0.0		-0.3^{***}		0.0
Control Dep. Var Mean	0.1	0.2	0.0	0.2	0.2	0.1
Demog. Controls	✓	✓	✓	✓	✓	✓
Observations	1,080	926	487	1,519	1,440	566

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses. Panels A-C show the spillovers in index spouse's benefits and D-F show the spillovers in secondary spouse's benefits. Panels A and D show estimates from equation (7), panels B and E show estimates from equation (7) also controlling for the baseline perception gap of the index spouse and panels C and F show the estimates from equation (7) by using within-group normalized (using a z-score) perception gaps as the dependent variable.

TABLE A16: Information spillovers to the secondary spouse by couple-based factors

PANEL A:	Index Spouse Benefits											
	(1) Index Gender Male	(2) Index Gender Female	(3) Total Earn. Below Med	(4) Total Earn. Above Med	(5) Below Med Mar. Length	(6) Above Med Mar. Length	(7) With Child Under18	(8) No Child Under18	(9) Index Mar Sat Above Med .	(10) Index Mar Sat Below Med	(11) Total net worth Below Age Gr Med	(12) Total net worth Above Age Gr Med
Treated	-15.8^{***}	-10.0^{***}	-10.2^{***}	-15.1^{***}	-13.7^{***}	-12.3^{***}	-19.5^{***}	-9.1^{***}	-13.1^{***}	-12.8^{***}	-7.3^{**}	-15.8^{***}
	(3.7)	(3.2)	(3.3)	(3.4)	(3.4)	(3.3)	(4.5)	(2.8)	(3.9)	(3.0)	(3.6)	(4.7)
Difference Between Groups		5.8		-4.9		1.4		10.4^{*}		0.3		-8.5
Control Dep. Var Mean	57.1	50.5	49.0	56.6	53.5	53.1	61.3	49.7	57.3	50.1	49.4	58.9
PANEL B:	Index Spouse Benefits, controlling for baseline PG											
Treated	-15.6^{***}	-9.7^{***}	-9.4^{***}	-14.6^{***}	-11.9^{***}	-12.5^{***}	-18.5^{***}	-8.5^{***}	-11.5^{***}	-13.0^{***}	-6.9^{**}	-16.7^{***}
	(3.3)	(2.9)	(3.1)	(3.1)	(3.1)	(3.1)	(4.1)	(2.6)	(3.5)	(2.8)	(3.3)	(4.3)
Difference Between Groups		5.9		-5.2		-0.6		10.0^{**}		-1.4		-9.7^{*}
Control Dep. Var Mean	57.1	50.5	49.0	56.6	53.5	53.1	61.3	49.7	57.3	50.1	49.4	58.9
PANEL C:	Index Spouse Benefits, normalized using z-scores											
Treated	-0.4^{***}	-0.2^{***}	-0.2^{***}	-0.3^{***}	-0.3^{***}	-0.3^{***}	-0.4^{***}	-0.2^{***}	-0.3^{***}	-0.3^{***}	-0.2^{**}	-0.3^{***}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.1		-0.1		0.0		0.2^{*}		-0.1		-0.2
Control Dep. Var Mean	0.3	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.2	0.2	0.1	0.2
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	863	1,163	924	1,056	948	1,081	687	1,342	977	1,052	691	715
PANEL D:	Secondary Spouse Benefits											
Treated	-15.7^{***}	-10.7^{***}	-11.1^{***}	-12.9^{***}	-13.3^{***}	-12.4^{***}	-18.1^{***}	-9.7^{***}	-11.9^{***}	-13.5^{***}	-14.1^{***}	-11.0^{**}
	(4.6)	(3.2)	(3.8)	(3.8)	(3.8)	(3.7)	(5.3)	(3.1)	(4.4)	(3.3)	(4.3)	(5.4)
Difference Between Groups		5.0		-1.8		0.9		8.4		-1.6		3.1
Control Dep. Var Mean	62.9	50.2	51.1	58.1	56.3	54.1	63.4	51.6	57.8	53.1	57.5	60.0
PANEL E:	Secondary Spouse Benefits, controlling for baseline PG											
Treated	-13.9^{***}	-8.6^{***}	-8.0^{**}	-12.0^{***}	-10.6^{***}	-10.6^{***}	-13.1^{***}	-8.6^{***}	-8.6^{**}	-12.4^{***}	-10.5^{***}	-12.9^{***}
	(4.2)	(2.9)	(3.6)	(3.4)	(3.5)	(3.4)	(4.7)	(2.8)	(3.9)	(3.1)	(3.9)	(4.7)
Difference Between Groups		5.3		-4.0		0.0		4.6		-3.8		-2.3
Control Dep. Var Mean	62.9	50.2	51.1	58.1	56.3	54.1	63.4	51.6	57.8	53.1	57.5	60.0
PANEL F:	Secondary Spouse Benefits, normalized using z-scores											
Treated	-0.3^{***}	-0.2^{***}	-0.3^{***}	-0.2^{***}	-0.3^{***}	-0.3^{***}	-0.4^{***}	-0.2^{***}	-0.2^{***}	-0.3^{***}	-0.3^{***}	-0.2^{**}
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Difference Between Groups		0.1		0.0		0.0		0.1		-0.1		0.1
Control Dep. Var Mean	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1
Demog. Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	797	1,206	942	1,022	934	1,072	659	1,347	947	1,059	684	680

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. Demographics include the ethnicity, education, gender, age group, perception of own financial savviness, and numeracy of both the index and the secondary spouses. Panels A-C show the spillovers in index spouse's benefits and D-F show the spillovers in secondary spouse's benefits. Panels A and D show estimates from equation (7), panels B and E show estimates from equation (7) also controlling for the baseline perception gap of the index spouse and panels C and F show the estimates from equation (7) by using within-group normalized (using a z-score) perception gaps as the dependent variable.

TABLE A17: Spillovers to the secondary spouse with all indices and index spouse's baseline perception gaps

	Index Sp Benefits		Sec Sp Benefits	
	(1)	(2)	(3)	(4)
Treated	-12.1^{***}	-16.0^{***}	-9.8^{***}	-12.9^{**}
	(2.4)	(5.7)	(2.6)	(6.0)
Treated × Lack of cogn barriers	1.3	1.7	3.4	3.5
	(1.9)	(2.1)	(2.3)	(2.7)
Treated × Lack of comm frictions	-7.4^{***}	-7.6^{***}	-9.4^{***}	-9.8^{***}
	(2.2)	(2.3)	(2.4)	(2.5)
Treated × High value of info	-4.8^{**}	-4.9^{**}	-4.1^{*}	-4.2
	(2.2)	(2.2)	(2.5)	(2.5)
Treated × Negative news	-5.5^{**}	-5.6^{**}	-6.7^{***}	-7.6^{***}
	(2.2)	(2.3)	(2.6)	(2.6)
Treated × Equal couples	1.9	1.3	0.9	0.5
	(2.2)	(2.2)	(2.3)	(2.4)
Couple-based Factors		✓		✓
Control Dep. Var Mean	53.3	53.3	55.1	55.1
Adj. R-Squared	0.2	0.2	0.2	0.2
Observations	2,029	2,029	2,006	2,006

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in all columns is the absolute baseline perception gap as a share of predicted age 67 benefits by the SS quick calculator. Robust standard errors are in parentheses. The specifications also include the uninteracted indices. The regression also controls for the index spouse's baseline perception gaps in their beliefs about own (columns (1) and (2)) or in spouse's (columns (3) and (4)) benefits. Demographics include the ethnicity and perception of own financial savviness of both the index and the secondary spouses.

TABLE A18: Average treatment effects on index spouse's expectations for their own and spouses' claiming age

	(1) Rev in exp for own cl age S0-S4	(2) Rev in exp for sp cl age S0-S4
Average Treatment Effect	0.35^{**}	0.46^{***}
	(0.14)	(0.14)
Baseline Control Cl Age	66.6	66.2
Dep. Var. Mean	0.33	0.34
R^2	0.02	0.02
Observations	2,215	2,204

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable in the first column is the revision in the expected claiming age of the index spouse in their own age 67 benefits from Stage 0 to Stage 2; in the second column the dependent variable is the revision in index spouse's expected own claiming age from Stage 2 to 4 and in the third column it is the revision from Stage 0 to 4. The dependent variables in the fourth, fifth and the sixth columns are the equivalent of the dependent variables in the first three columns, for secondary spouse's claiming age. Demographics are also included in all columns and these include the ethnicity, education, gender, age group, financial literacy and numeracy of both the index and the secondary spouses.

Appendix B Survey Instrument

FIGURE B1: Experimental design

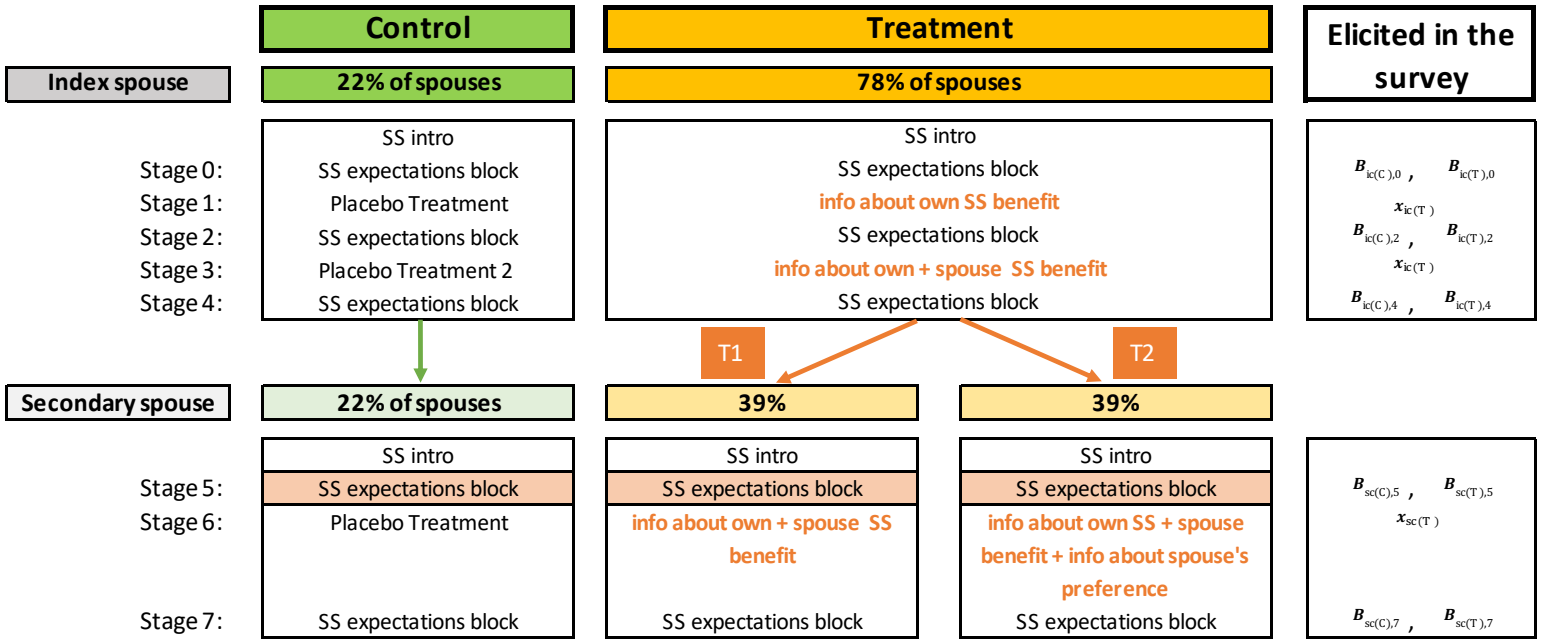


FIGURE B2: Eliciting expectations about own Social Security benefits

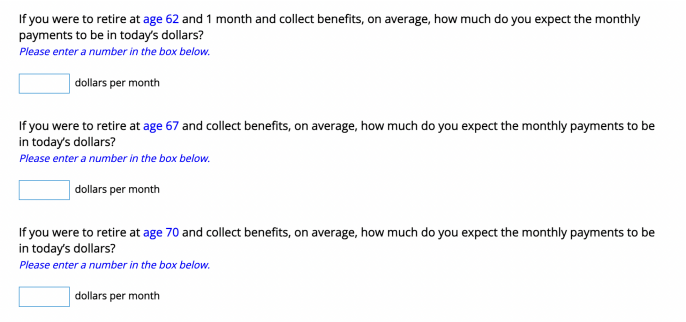


FIGURE B3: Eliciting expectations about spouse's Social Security benefits

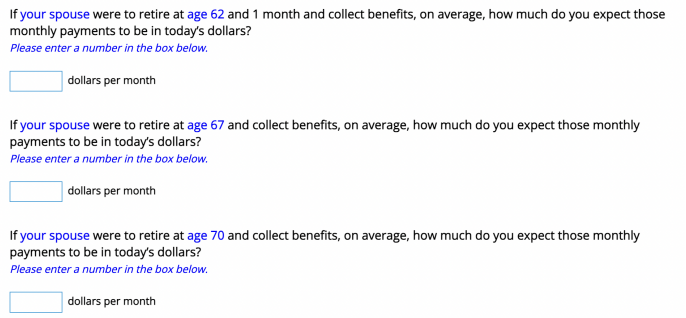


FIGURE B4: Information treatments on Social Security benefits

(A) Stage 1 Treatment Information

Based on a formula similar to the one used by the Social Security Quick Calculator and the earnings you reported earlier, we present below your estimated Social Security benefit amounts for 3 different claiming ages. For these calculations, we assume you will work every year up to the year in which you begin receiving benefits.

Social Security Benefit Estimates

Retirement and Social Security claiming age	Monthly benefit amount[1]
62 and 1 month	$2100
67	$3065
70	$3868

As shown in the table, you can receive a monthly benefit starting at age 62 and 1 month that would be reduced for life due to early retirement. If you choose to delay the start of benefits to a higher age, you can then receive a larger monthly benefit for the rest of your life.
For example, if you start taking benefits at age 62 and 1 month, you will receive $2100 per month for the rest of your life. But if you wait until age 67 to start receiving benefits, you will get $3065 for the rest of your life. So by waiting until age 67, you can then receive $965 more per month than if you started claiming at 62 and 1 month. Note that if you start claiming your benefits after age 70, your monthly benefits will still be $3868. Remember, these estimated figures are in today's dollars.

[1]For this estimate, we also assumed no future increases in prices or earnings. We have calculated your benefits based on the earnings you have reported earlier and by making certain assumptions about your past earnings.

(B) Stage 3 Treatment Information

Based on a formula similar to the one used by the Social Security Quick Calculator and the earnings you reported for your spouse, we present below the estimated Social Security benefit amounts for your spouse for 3 different claiming ages. For these calculations, we assume your spouse will work every year up to the year in which your spouse begins receiving benefits.

Your Spouse's Social Security Benefit Estimates

Spouse's retirement and Social Security claiming age	Spouse's monthly benefit amount[1]
62 and 1 month	$1995
67	$2910
70	$3671

Note that if your spouse starts claiming your benefits after age 70, his/her monthly benefits will still be $3671.
For your convenience, we have also reproduced below the table presenting the estimates for your own Social Security estimates that you saw earlier.

Your Social Security Benefit Estimates

Retirement and Social Security claiming age	Monthly benefit amount[1]
62 and 1 month	$2100
67	$3065
70	$3868

[1]For this estimate, we also assumed no future increases in prices or earnings. We have calculated the benefits based on the earnings you have reported earlier for you and your spouse and by making certain assumptions about your past earnings.

FIGURE B5: Placebo treatments on Social Security benefits

(A) Stage 1 Control Information

Although possibly the most widely played and watched sport globally, men's soccer has long been dominated by South America and Europe. These continents include all previous World Cup winners and a majority of the previous World Cup hosts. Only two countries outside of these continents have ever made it to the semi-finals. At the first World Cup in 1930, the United States took third place, its best finish to date, and in 2002 co-host South Korea finished in fourth place.
Despite the concentration of powerhouses in South America and Europe, soccer hasn't lagged elsewhere. In the United States, Major League Soccer viewership continues to climb compared to the steady NBA and declining NFL viewership, and despite the Premier League's home in England, Asia accounts for almost 40% of its global viewers. Online, top players Cristiano Ronaldo and Lionel Messi have the two most-followed accounts on Instagram held by individuals, further demonstrating the sport's global fandom.
That global support may help distribute the growth of emerging talents, which could be helped by the next two World Cups. In 2022, Qatar will host the tournament in the Middle East, and in 2026, the United States, Canada, and Mexico will co-host in North America. With so much support and interest around the world, soccer shouldn't have to wait long before it sees a new World Cup winner.

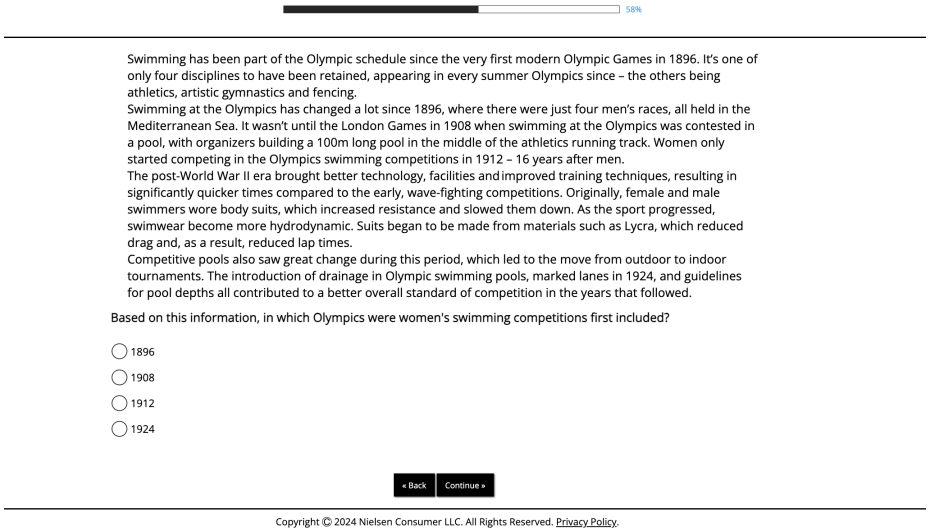
The winners of the previous men's Soccer World Cups have been from which of the following continents? Please select all that apply.

- ☐ North America
- ☐ South America
- ☐ Europe
- ☐ Africa
- ☐ Asia
- ☐ Australia

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(B) Stage 3 Control Information



Appendix C Open-ended Questions

Almost all respondents who were re-surveyed (94%) provided an answer to the open-ended question. We utilized GPT-4 to identify the key themes and analyze their prevalence and content. Four main themes emerge: frequency of discussion, content of discussion, roles in finance, and conflict. We created word clouds separately for men and women for theme in Figure C1.

Regarding how often couples discuss financial issues, both male and female participants reported discussing finances regularly, though the frequency varied. Men typically mentioned monthly discussions, often centered around significant financial decisions such as investments, savings, and retirement planning. Women, on the other hand, tended to report more frequent conversations, focusing not only on long-term goals like retirement but also on managing day-to-day expenses and savings strategies. This difference in frequency is seen in the word clouds where "monthly" is the most common word for men, while "weekly" is the most common for women. In many cases, women handle the finances and keep their partners informed regularly, discussing how to pay bills and save for major life events.

The content of financial discussions for both men and women frequently revolved around managing savings, retirement planning, paying bills, and handling both short-term

and long-term financial goals (see words "saving", "retirement" and "bill" in women and men's word clouds). Men also highlighted conversations about managing expenses for vacations and deciding where to allocate or save money. Similarly, women emphasized the importance of savings, timely bill payments, and ensuring that both partners stayed on track with financial goals, particularly reducing debt and maintaining financial stability.

The roles in managing household finances varied for both men and women. Some men reported that their spouses primarily handled financial matters, with them checking in periodically or for major decisions. Others noted a shared approach, where both partners contributed equally to decision-making, especially for large purchases or investments. Women, meanwhile, often mentioned taking the lead in financial decisions, managing day-to-day finances, and offering financial advice, which their spouses typically followed. In many cases, financial decision-making was collaborative, with both partners involved in major financial planning.

Both men and women acknowledged that financial discussions could sometimes lead to conflict. Men often mentioned stress arising from differing financial philosophies, with one partner more focused on saving while the other preferred to spend more freely. These differences sometimes caused tension, but couples often worked through it by making joint decisions. Similarly, women reported that financial stress could lead to arguments (see word clouds), with some preferring to avoid financial discussions altogether to prevent conflict. In cases of conflict, both partners generally sought ways to find common ground and shared responsibility for managing finances.

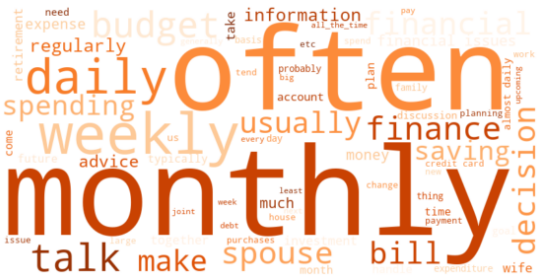
FIGURE C1: Communication about financial issues between spouses

(A) Frequency of discussions

Women



Men



(B) Content of discussions

Women

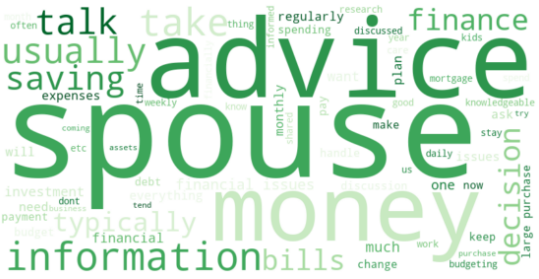


Men



(C) Roles in managing household finances

Women



Men



(D) Challenges in communication

Women



Men



Note: Figures show word clouds created using GPT-4 about different themes around how spouses communicate about financial issues.