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# The role of affect and social norms in preferences for guaranteed income streams in retirement

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## Executive summary

Decumulation decisions require individuals to consider a range of factors, including not only financial outcomes but also family needs and retirement goals. An underexplored factor in these decisions is the role of positive and negative affect–or, more explicitly, the emotional content of retirement messages and the emotions that consumers bring to the decisions. This paper describes a series of empirical analyses and experimental studies to explore the role of affect in behavioral retirement insurance decisions (e.g., annuitization) and also test the use of social norms messaging in encouraging interest in annuity uptake. Study 1 examines the affective content around discussions of pensions, annuities, Social Security, 401(k)s, and retirement using data scraped from internet discussion boards on retirement topics. Study 2 provides participants with positive, negative or neutral affective messaging around retirement topics and examines annuity uptake. Study 3 provides messaging designed to evoke high- or low-anxiety states in participants and also manipulates social norm framing around annuity uptake. Study 4 again examines the impact of social norm framing on interest in life annuity uptake and also examines the role of current financial well-being in decumulation preferences. Across the four studies, we demonstrate that while consumers appear to bring their own emotions and experiences around retirement financial planning to the annuity decision, making manipulation of affect and anxiety through messaging difficult, individual-level positive affect reliably and significantly predicts greater interest in annuity product uptake. Using a high social norms framing also significantly increases interest in life annuity products. Better understanding these factors may allow us to better develop products that directly address retirees' affective concerns, as well as better communicate with plan participants about how insurance products or other decumulation options can best align with their needs.

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Securing sufficient income during old age requires that individuals make a series of long-range decisions both during their working years and in early retirement. One of the most complex of these decisions is how to optimally consume saved assets. The size of this problem is substantial, with approximately $16.3 trillion in retirement assets held in either defined contribution plans (e.g., a 401(k)) or IRAs (Investment Company Institute, 2019). Individuals must trade off the risk of spending their retirement assets too quickly and running out of money against the constraints of spending too slowly and possibly under-consuming earmarked funds.

## Background

One tool for solving the problem of generating secure retirement income from accumulated retirement wealth is a life annuity. The simplest form of a life annuity is the immediate single-payer life annuity, in which a consumer exchanges a lump sum of assets for a guaranteed stream of lifetime payments. By converting retirement assets into a lifetime income stream, life annuities' biggest advantage is the elimination of the risk of outliving one's assets. Another advantage is that life annuities tend to pay out a higher percentage return than most individuals can achieve via self-managed accounts due to benefits to survivorship within the pool of annuity purchasers. The economics literature has long recognized that annuities are the most compelling solution to the decumulation problem (for a review, see Benartzi et al., 2011), arguing that rational retirees with no bequest motive should use all of their retirement assets to buy annuities (Yaari, 1965). Even with all the theoretical reasons to purchase life annuities, retirees' actual purchase of annuities remains below their theoretical potential, leading to a so-called annuity puzzle (Davidoff, Brown, and Diamond, 2005; Brown, 2007). For example, a 2009 study by Hewitt Associates finds that just 1% of U.S. employees actually buy annuities as payout options (Lieber, 1/29/2010), and a study in the United Kingdom found that only about 6% of households there participate in the voluntary annuity market (Inkmann, Lopes, and Michaelides, 2011).

A rational model of annuity decisions requires that buyers consider issues of preferred retirement age, return on personal assets, longevity risk, and expected age of death. While many of these trade-offs are purely financial in nature, psychological influences can also have a large impact on the annuity decision. One factor that has been neglected in research on retirement decision making is the role of affect. Individual levels of affect, which capture the positive and negative emotional content of the decision and its anticipated outcomes, are likely to be a major factor in predicting participants' decisions about converting savings to income (decumulation). Guaranteed income decisions are not only about the financial implications of the choices made, but also encompass concerns about providing for family, meeting retirement goals, and avoiding major risks such as poor health or running out of funds. Considering an annuity also requires contemplating longevity expectations, which may generate a negative affective reaction. To address the underexplored role of these emotional considerations, this research focuses specifically on the impacts of positive and negative emotion on preferences for life annuities.

Another potential reason for the underutilization of life annuities is that consumers perceive them (correctly) as being relatively unpopular among other consumers. Social norms, and specifically descriptive social norms, provide individuals with information about what other people do in a similar situation (Goldstein and Cialdini, 2007; Schultz, 1999). They serve as a highly successful persuasive appeal; however, they are relatively untested within the domain of decumulation strategies. The use of descriptive social norms to motivate behavior change is especially powerful in novel or ambiguous situations (Festinger, 1954), consistent with individuals' overall reliance on how others are behaving when deciding how to respond to an unknown situation (Milgram, Bickman, and Berkowitz, 1969; Sherif, 1936). Social norms are useful in such environments because it saves the individual time and effort in interpreting the situation and formulating a response; by mimicking what other individuals are already doing, the probability of a successfully effective outcome is increased.

Descriptive social norms may be especially effective in a retirement decision-making context. Making significant choices about what financial avenues to pursue to be ready for retirement is often anxiety-provoking, with significant feelings of uncertainty about the best course of action. Both feelings of anxiety and uncertainty may result in people looking for outside advice and counsel. Information about what similar others are choosing to do can be especially impactful in this context. Additionally, because such decisions are typically only made once and rarely revisited, decumulation decisions are typically not decisions with which individuals have much experience. This lack of perceived expertise is also likely to encourage reliance on decumulation strategies that others have chosen when that information is available.

The goals of this research were to better understand how both affect and social norms impact purchase intentions of annuities. Across four studies we examine these issues, as well as how current financial well-being impacts preferences for decumulation options.

## Discussion board data

In our first study, we used Python to scrape data from internet retirement discussion boards hosted by AARP (formerly the American Association of Retired Persons). This allowed us to collect data about how people discuss retirement options in a naturalistic setting when they are having conversations with other individuals facing the same types of retirement choices. We identified the target words ("retirement", "401(k)", "pension", "Social Security", and "annuity") and text frames for ten words on each side of the target. The ten-word frame was chosen rather than analyzing the entire post because posts were often on multiple topics, and we were specifically interested in the language used in relation to the chosen targets. Data was then analyzed for content and affect using the Linguistic Inquiry and Word Count Dictionary (LIWC). LIWC analysis provides the percentage of words in the text that relates to various categories.

Out of the five targets, discussions of annuities had the smallest percentage of first person language (e.g., "I", "we"): 3.97% for annuities versus a range of 4.34% to 6.57% for the other targets. This suggests that when considering annuities, there is less of an association with the than when discussing other forms of retirement income. Concern around death was more prevalent for annuities (0.26%) than for the other targets (range of 0.06% to 0.14%), although interestingly discussions of health did not show this trend. Contemplation of annuities was also relatively unlikely to be associated with positive leisure thoughts (0.00%), while all of the discussions of the other targets included such language. This suggests that annuities may be more likely to be associated with negative aspects of retirement (mortality) and less likely to be associated with positive aspects of retirement (leisure) than other available financial products.

The overall use of affective language in annuity discussions was 2.81% of word usage. This was quite a bit lower than discussions of Social Security, pensions, or retirement, but slightly higher than discussions of 401(k)s. Looking specifically at emotional valance, positive emotions showed this same pattern, while negative emotions were less present in annuity discussions than any other target product.

These results suggest that consumers considering annuities engage in discussions of the products that are objectively different than the way in which they discuss the other common sources of retirement income (410(k) s, pensions, and Social Security), and also from the way in which they discuss retirement in general. In the next studies, we specifically investigate how differences in positive and negative affect impact preferences for annuities as financial vehicles for retirement, as well as whether social norms manipulations are effective at increasing interest in these products.

## Affective messaging

The first experimental study explored the impact of affective messaging about retirement on interest in annuity uptake. In this and the following studies, we conducted a pilot study on Americans over age 18 of all employment statuses, and then a more focused main study including only currently employed participants aged 40 to 62, as these individuals more closely represent the population of individuals likely to be seriously considering lifetime annuities as retirement financial vehicles. Within this report, we include only the results of the main study; the results of the pilot studies support the main findings detailed here.

In this study, participants were randomized to view one of three annuity messages and associated images: one designed to elicit positive affect (addressing how a guaranteed income stream can allow the participant to relax, have fun, and meet positive retirement goals), one designed to elicit negative affect (addressing why an annuity is necessary to protect the participant from risks of running out of money and being impoverished in retirement), or one designed to elicit no specific affect (an informational message about how annuities work). Participants were then asked their interest in a lifetime annuity as a likelihood of purchasing on a 0-100 scale, completed the Positive and Negative Affect Scale (PANAS),[1] indicated the likelihood (measured as 0 to 100) that they would live to various ages, and answered demographic questions.

Participants who read the negative affect-inducing retirement information were marginally less likely to indicate interest in purchasing a life annuity than those who read the positive affect-inducing retirement message. Interestingly, the three retirement information conditions did not have a significant impact on positive affect; however, there was a significant impact on negative affect.

Financial planning for retirement is often an emotionally fraught process, and it is possible that participants were bringing strong emotions to these questions that were only somewhat influenced by the affective messaging. Because of this, we chose to look at the relationship between individual affect and interest in annuities using individual variation in emotion toward retirement and without regard to experimental condition. An analysis was performed that included the negative PANAS score, positive PANAS score, age, gender, education, household income, self-reported health, and chance of living to be 85.[2] Age was negatively and significantly related to interest in purchasing a life annuity, with younger individuals being more interested in the product. Both positive and negative affect significantly predicted greater interest in annuity uptake, although the impact of positive affect was larger.

These results suggest that it is possible to impact affect related to retirement decision making of potential annuity consumers; however, many consumers are likely bringing significant emotions around the retirement decision to the process, and thus ability to move these emotions may be somewhat limited. Importantly, positive affect appears to be a significant predictor of interest in annuity purchase, as does negative affect, albeit to a lesser degree.

## Anxiety messaging

In the study above we examined the impact of messaging designed to elicit positive, negative, and neutral affect about retirement on life annuity uptake decisions. We found only a marginal impact of the experimental manipulations; however, we did uncover an intriguing impact of affect on interest in purchasing a life annuity. In this study, we examine a different messaging manipulation–one that focuses on anxiety. For many people, financial planning for retirement is not just an emotional experience but is specifically an experience that provokes anxiety around the significant future uncertainty that will be faced in retirement, including issues such as whether they will have enough money, whether they will be a burden to children and other loved ones, and whether they will be able to cover potentially significant healthcare costs.

In this study, we also add another significant manipulation–social norms. Research has shown that correcting incorrect ideas about social norms (e.g., the percentage of students on a college campus who engage

[1] PANAS asks participants how much they are feeling each of ten positive emotions and ten negative emotions on five levels ranging from “very slightly or not at all” to “extremely” (Watson, Clark, and Tellegen, 1988).

[2] Chance of living to 85 was the age chosen for inclusion in the regression because life expectancy in the United States is around 79 years.

in binge drinking) can have a large impact on behavior. Norms have been shown to be especially effective in changing behavior under conditions of anxiety. Social norms have been found to impact a wide variety of decision-making behaviors; however, to our knowledge no one has previously investigated their potential impact on preferences for income streams in retirement.

Each participant was randomized to see a message that was designed to elicit either high or low anxiety around retirement, along with a high or low social norms message. Participants were then asked to indicate their level of interest in purchasing a life annuity and completed the PANAS and various demographic and retirement-related questions.

Analysis revealed no effect of anxiety content of the retirement messaging or social norms condition on positive or negative affect. Social norms did, however, have a strong impact on interest in purchasing a life annuity, with individuals in the high social norms condition indicating significantly increased interest in such an annuity (61.87 vs. 59.91 on a 0-100 purchase likelihood scale). Anxiety messaging had no impact on interest in life annuity purchase.

As in the previous study, many of the participants were likely bringing well-formed feelings and anxieties about financial planning for retirement to this study, therefore potentially deadening the impact of the relatively short intervention. We thus decided again to look at how affect directly impacts interest in life annuity purchase. To do so, we conducted an analysis that included household income, health perception, age, gender, negative affect, positive affect, anxiety manipulation condition, social norms manipulation, and perceived likelihood of living to age 85. Health perception was surprisingly negatively related to annuity purchase interest. As would be predicted by rational economic models, predicted likelihood of living to age 85 positively predicted life annuity interest. As in the previous study, current age negatively predicted annuity interest, with younger participants expressing higher levels of interest in the product. Also replicating the previous study, positive affect was a strong, positive predictor of life annuity interest. Exposure to the higher social norms condition also positively predicted interest in life annuity uptake.

These results replicate the findings of the previous study that individual levels of positive affect are associated with greater interest in life annuity uptake. Additionally, these results show that interest in life annuities is highly susceptible to social norms manipulations, with individuals exposed to social norms that make life annuities seem more common having significantly more interest in the products.

## Annuity interest, social norm messaging and financial distress

In this study, we investigate how socioeconomic status predicts interest in guaranteed retirement income streams. Previous work has proposed that individuals of lower socio-economic status (SES) experience increased anxiety and negative affect when faced with economic transactions, such as visiting a banking center, due to a variety of factors including negative previous experiences with financial professionals. It is reasonable to believe that this anxiety and negative affect also surfaces when individuals are making choices about retirement income streams. In this study, we also seek to replicate the effect of social norms messaging and positive affect on interest in annuity uptake.

Participants were randomized to either the high social norms or low social norms for life annuities framing. They then indicated their interest in purchasing a life annuity, completed the PANAS, the Susceptibility to Interpersonal (Normative) Influence scale (Bearden, Netemeyer, & Teel, 1989), the Bureau of Financial Protection financial distress scale, and a variety of other attitude and demographic questions.

As in the previous study, social norms framing had a significant impact on interest in a life annuity, with those in the high social norms condition indicating significantly more interest than participants who saw the low social norms framing. We examined the impact of affect on interest in a life annuity by conducting a regression with the independent variables used previously (household income, age, gender, positive affect, negative affect, and health perception) and included additional variables added for this study: financial distress, susceptibility to social influence, childhood financial well-being, and social norms framing.

Replicating previous studies, younger individuals reported higher interest in a lifetime annuity. Also replicating the previous studies, positive affect was a strong predictor of interest in annuities, and the social norms condition continued to have significant effect, with participants who saw the high social norms manipulation expressing more interest in life annuities than those in the low social norms condition (61.7 vs. 56.6). Current financial distress level was a positive predictor of interest in a life annuity, with individuals indicating more financial distress indicating higher interest. Interestingly, susceptibility to social influence was also a significant predictor, indicating that individuals who are highly susceptible to the opinions of other were more likely to indicate interest in the product across social norms conditions, although this may simply be an indication of higher susceptibility to experimenter demand effects. A somewhat surprising finding was that negative affect was a marginal positive predictor of interest in a life annuity, as in the first experimental study. This suggests that it is possible that emotion in general is a positive predictor of interest in a life annuity, but that the effect for positive emotion is simply stronger than that of negative emotion.

Other indicators of financial well-being also provide evidence that higher levels of financial distress are related to increased interest in a life annuity product. Participants who reported currently being on some type of government financial assistance indicated more interest in a life annuity than those who were not receiving assistance. Additionally, participants who reported greater enjoyment of feeling they have more money than those around them, greater feelings of not having enough money to buy all the things they want, or greater pride to live in the nicest house on their block all reported greater interest in a lifetime annuity. Self-reported tendency to make impulse purchases was also strongly correlated with interest in the life annuity, indicating that some people may see such financial products as being valuable self-control tools. Tendency to forgo things today to save for tomorrow was not correlated with interest in an annuity product.

These results provide additional support for social norms interventions as an effective way to increase interest in life annuity products. They also provide further support for the hypothesis that positive affect is positively associated with interest in annuities as financial vehicles for retirement. Additionally, these findings provide evidence that financially distressed individuals, as well as those who have a stronger desire to excel financially compared to those around them, are more likely to be interested in life annuity products. Individuals who self-identified as being more likely to make impulse purchases also indicated greater interest, suggesting that consumers may find the products appealing as self-control devices.

## Conclusion

One of the most complex financial decisions individuals face is how to optimally consume saved assets during retirement. Individuals must trade off the risk of spending their retirement assets too quickly and running out of money against the constraints of spending too slowly and possibly under-consuming earmarked funds, both issues fraught with uncertainty. One underutilized tool for solving this problem is a life annuity.

In three studies we find that positive affect is consistently associated with greater interest in annuity uptake. Additionally, in two of the studies negative affect is also associated with increased interest in annuities, suggesting that total quantity of affect may be a factor in annuity decision making. For many people, the process of making significant financial decisions for retirement is stressful and leads to a variety of negative emotions. The finding that positive affect leads to increased interest in annuity uptake may help to explain the underutilization of life annuities as retirement financial vehicles. If the retirement planning process itself decreases positive affect, so might it thus decrease interest in lifetime annuities. The current studies suggest that methods of reducing stress in the financial planning process may be a way to increase annuity uptake by increasing positive affect at the time the relevant decision is being made.

The significant stress associated with the retirement financial planning process may also help explain why social norms appear to be especially effective in the retirement decision-making context. Our studies provide strong evidence of the effectiveness of social norms framing on increasing interest in annuities. Given that annuities are believed to be underutilized, social norms framing may be a simple, cost-effective way by which to increase the rate at which individuals are willing to seriously consider them as part of their long-term financial plan.

This work also demonstrated that individuals with higher levels of financial distress showed greater interest in lifetime annuity products, as did those who reported higher levels of impulse spending and those who were more concerned with wealth status relative to their peers. It is interesting to note that these relationships held even when taking into account household income, so it is not simply an effect of lower-income individuals finding guaranteed income streams more attractive. These findings suggest novel potential avenues of exploration for encouraging annuity uptake, specifically communicating their benefits as long-term guarantors of status or self-control devices.

The retirement financial decision-making process is a complex one. Lifetime annuities can provide a secure source of income in retirement without risk of the individual outliving their assets. While the reasons for the underutilization of such annuities are no doubt complex, the current work has uncovered previously unexplored factors that influence consumer preferences for these financial instruments. Positive affect, high social norms framing, and financial distress all increase interest in the uptake of lifetime annuities. Interventions and messaging that make better use of these factors may be able to help consumers make long-term financial decisions better aligned with their retirement goals.

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**Suzanne B. Shu** is Associate Professor of Marketing at UCLA's Anderson School of Management. Before Associate Professor of Marketing Suzanne Shu found her calling in academia, she had a career in industry. With undergraduate and advanced degrees in electrical engineering from Cornell University, Shu spent five years with Bell Communications Research. Earning an MBA was a logical part of her professional trajectory.

While in business school, Shu realized that the phenomena that had always interested her — behavioral economics, judgment and decision-making, consumer psychology — were organized into formal areas of study. The MBA experience changed her life, she says, and sealed her decision to pursue a Ph.D. at the University of Chicago, where she worked closely with renowned behavioral science expert Richard H. Thaler.

Shu has built a body of work on the topic of future bias, a previously unexplored behavior in which consumers delay consuming a positive asset until some future undefined date. "While most research on intertemporal choice has documented that consumers prefer sooner rewards over later ones," she says, "my work is among the first to suggest that there may be circumstances where the opposite happens and consumers are willing to wait indefinitely to consume a reward."

She earned his Ph.D. in Behavioral Sciences from the University of Chicago, MBA from University of Chicago, M.Eng. Electrical Engineering from Cornell University and a B.S. Electrical Engineering from Cornell University.