

BEHAVIORAL ECONOMICS AND INDIVIDUAL CHOICES AROUND LIFETIME INCOME IN RETIREMENT

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The Annuity Puzzle

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- Economic models predict demand for annuities
- But empirically, demand is low:
 - ▣ Lottery winners take \$\$\$
 - ▣ SS claiming at 62
 - ▣ High take-up of lump sum option in DB plans
 - ▣ Low take annuity options in DC plan (when offered)

What is Behavioral Economics?

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Traditional Economics



Behavioral Economics



Limited Annuity Demand: Rational Explanations

Rational Explanations for Limited Annuity Demand

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- Annuity prices are not actuarially fair
 - Why?
 - Adverse selection—the average annuitant has a longer expected lifespan than the average non-annuitant
 - Aggregate mortality risk
 - BUT, this is probably not sufficient to explain low levels of annuitization
 - Simulations suggest that the loads do not offset the utility gains from annuitization
 - Deferred social security claiming is actuarially fair, and few individuals delay social security claiming

Rational Explanations for Limited Annuity Demand

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- Sufficient pre-existing annuitization
 - Probably true for lower income individuals with high social security replacement rates
 - Does not explain low rates of annuitization for middle- to upper-income households
- Risk sharing in couples
 - Informal insurance—reduces formal insurance demand
 - BUT, no increase in annuitization upon death of a spouse

Rational Explanations for Limited Annuity Demand

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- Bequest motives
 - ▣ Less than full annuitization optimal
 - ▣ Would predict partial annuitization rather than absence of annuitization
- Incomplete annuity markets
 - ▣ Inflation protection
 - ▣ Irreversibility → lack of liquidity
 - Demand for liquidity would predict partial annuitization
- Counterparty risk (fear that insurance company will go bankrupt)

Limited Annuity Demand:
Behavioral Explanations

What is Behavioral Economics?

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Behavioral Economics



Behavioral Explanations for Limited Annuity Demand

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Almost everything about the psychology of annuitization makes annuitization seem like a bad choice

The Psychology of Insurance

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	Homeowners insurance	Longevity insurance
Insurable event	Fire, storm damage, theft— BAD THINGS	Live to a ripe old age— GOOD THING
Payout	Big lump sum after large loss	Dribble of income spread out over time
Premiums	Dribble of premiums spread out over time	Big lump sum today
If no event happens...	No fire—GOOD Small regret over small premiums “paid for nothing”	Die young—BAD Huge regret over large premium “paid for nothing”

An annuity doesn't “feel” like a traditional form of insurance

Behavioral Explanations for Limited Annuity Demand: Present Bias

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TODAY

- Large cost to purchase annuity
- Looms large

THE FUTURE

- Small stream of monthly payments



Present bias → future payment streams heavily discounted

Behavioral Explanations for Limited Annuity Demand: Investment Risk

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Simple 2-period Example with 50% Mortality Risk

"Annuity" Investment		Bond "Investment"	
Mortality	Payout	Mortality	Payout
Live	2	Live	1
Die	0	Die	1


Annuity looks risky
by comparison


Bonds looks safe.
Same payout whether
I live or die.

Behavioral Explanations for Limited Annuity Demand: Loss Aversion

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How I Lose

- Die young → annuity a bad investment
 - ▣ Losses loom large (2x equal-sized gains)
 - ▣ Happens sooner

How I Gain

- Live long → annuity a good investment
 - ▣ Gains matter less than losses
 - ▣ Happen in distant future (discounted)



Behavioral Explanations for Limited Annuity Demand: Probability Misperceptions

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- | | |
|---|---|
| <ul style="list-style-type: none"> ❑ An individual who reaches age 65 has a life expectancy of age 85. What are the chances he or she will live beyond that age? ❑ Correct answer: 50% ❑ Fraction with correct answer: 32% ❑ Leading incorrect answer: 25% <ul style="list-style-type: none"> ■ 41% answering 25% | <ul style="list-style-type: none"> ❑ Considering a 65-year-old couple, what is the likelihood of one or both of them living to the age of 97? ❑ Correct answer: 25% ❑ Fraction with correct answer: 16% ❑ Leading incorrect answer: 10% <ul style="list-style-type: none"> ■ 64% answer 10% |
|---|---|

Source: MetLife Retirement Income IQ Test (2003) and (2011)

<https://www.metlife.com/assets/cdo/mmi/publications/studies/2011/mmi-2011-retirement-income-iq.pdf>

Behavioral Explanations for Limited Annuity Demand: Loss of Control

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Behavioral Explanations for Limited Annuity Demand: Loss of Control

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People feel less nervous when they are a car driver rather than a passenger



Langer (1975) finds that experimental subjects will pay more for a lottery ticket if they pick the number themselves

- Annuities require that an investor give control of their wealth to a third-party (the insurance company)
 - No annuity = control over wealth
 - Annuity = no control (limited future liquidity)

Behavioral Explanations for Limited Annuity Demand: Complexity → Focus on Cash

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PAYOUT OPTION	AMOUNT
Lump sum distribution	\$300,000
Single life annuity	\$2,000/month
Joint and survivor annuity	\$1,500/month
Single life annuity with COLA	\$1,600/month
Joint and survivor annuity with COLA	\$1,200/month
Single life annuity with 5 year period certain	\$1,900/month
Joint and survivor annuity with 5 year period certain	\$1,400/month
Single life annuity with 10 year period certain	\$1,800/month
Joint and survivor annuity with 10 year period certain	\$1,300/month
Joint and survivor annuity with reduced survivor benefit	\$1,700/month
...etc.	

Behaviorally Informed Choice Architecture

Choice Architecture

Choice architecture

The design of the environment and context in which choices are made



Elements of Choice Architecture

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Choice architecture

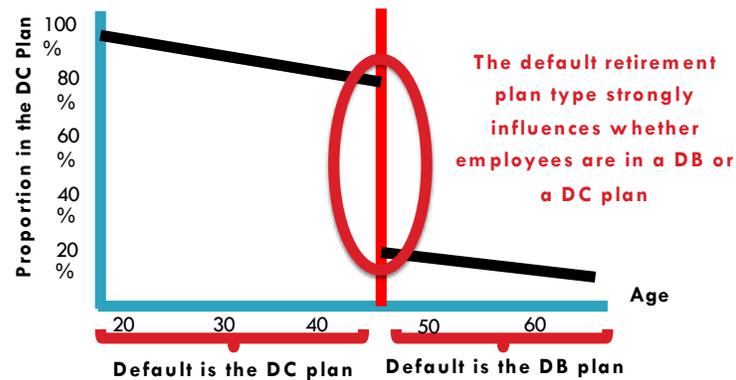
The design of the environment and context in which choices are made



- Number of options
- Order of options
- Structure of options
- Framing of the options/the choice
- Process around the choice
- Timing of the choice
- Frequency of the choice
- Location of the choice

Choice Architecture: The Default Option

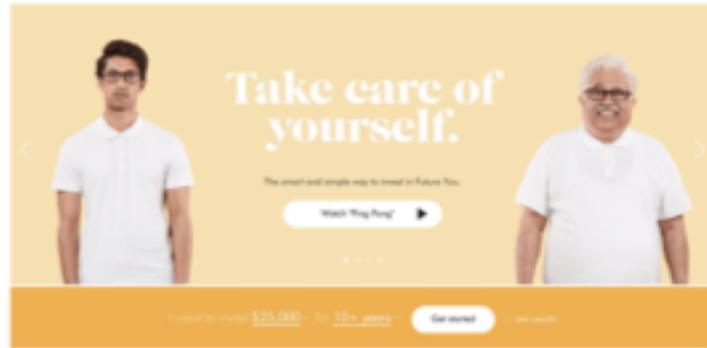
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Source: Goda and Manchester (2010)

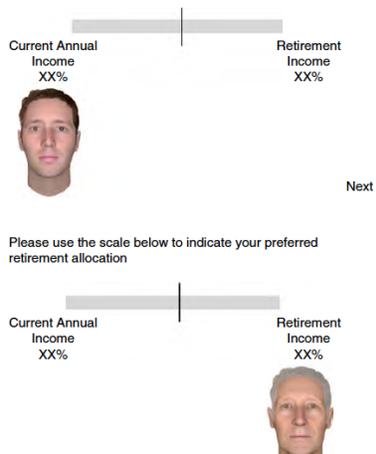
Choice Architecture: Future Self Visualization

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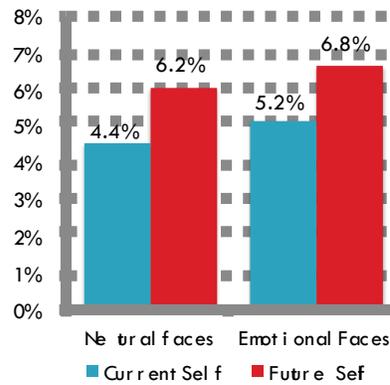


Choice Architecture: Future Self Visualization

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**Fraction of Current Pay
Allocated to Retirement**



Source: Hershfield et al. (2011)

The Moment You've Been Waiting For...

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Face aged to 2047 with the app AgingBooth

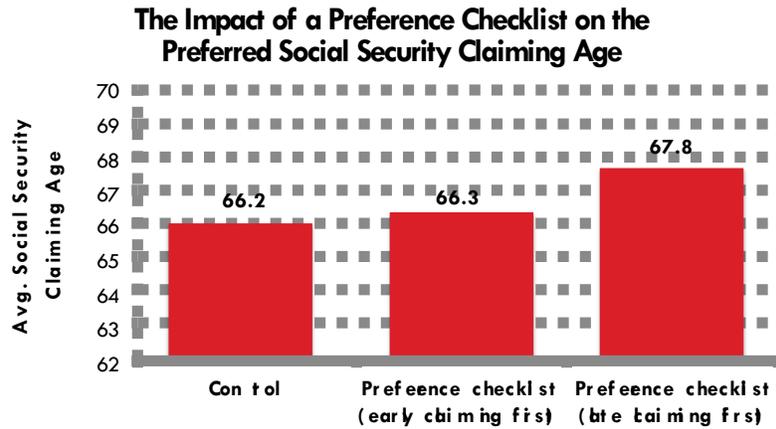
Choice Architecture: Preference Checklist

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Preference Checklist Items, Study 1	
Items supporting claiming benefits early	Items supporting claiming benefits later
I want to collect benefits as soon as possible because Social Security may run out of money soon.	Since people usually need more money to spend on medical bills as they get older, I'll delay claiming as long as possible—that way I'll have more money when I'll probably need it most.
I don't want to have to work until I'm old—I want to enjoy some non-work time with friends and family.	I will probably work part-time as the years go on—that way I can put off collecting my benefits.
My family does not have a history of living long, so I don't expect to live a long time either.	My family has a history of living long, so I expect to live a long time too—I wouldn't want to run out of money when I'm old.
I don't like my job anymore, so claiming benefits now would let me leave that bad situation.	I want to work as long as I physically can—only health problems would stop me from working.
Instead of waiting until 70 years old to get the highest benefits, it is best to claim early and invest the money.	As long as I am doing something I really like, I want to keep working past my full retirement age.
Waiting to claim benefits does not increase the check that much, so it's not worth waiting.	Social Security is the best annuity out there, and waiting longer to collect gets you more money and makes it even better.
A lot of my friends and peers have already retired and claimed benefits.	I've been paying into Social Security my whole life, and now I want to get as much money back as possible.
Due to the economy and scarcity of jobs, I might be forced to start collecting early.	I am comfortable with my current income level, so I can afford to delay claiming as long as possible.

Choice Architecture: Preference Checklist

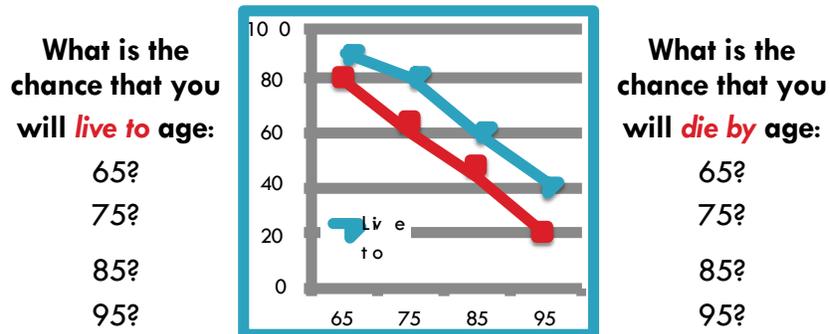
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Source: Johnson, Appelt, Knoll and Westfall (2016), "Preference Checklists: Selective and Effective Choice Architecture for Retirement Decisions"

Choice Architecture: Framing

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Source: Payne et al. (2012) "Life Expectancy as a Constructed Belief"

Choice Architecture: Framing

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- Evidence on how framing impacts annuitization choices:
 - **Investment vs. insurance:** Framing annuitization as an investment reduces annuitization
 - **Flexibility and control:** Framing annuitization as a limit on flexibility and control reduces annuitization
 - **All or nothing:** Framing annuitization as an all-or-nothing choice reduces annuitization
 - **Inflation protection:** Highlighting the value of inflation protection increases COLA adoption

Source: Beshears et al. (2014) "What Makes Annuitization More Appealing"

Choice Architecture: Decision Support Tools to Reduce Complexity

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- Sequential decision-making
 - Put the important decision front and center:
 - What fraction of retirement wealth to annuitize?
 - Keep subsequent decisions to customize features simple
 - Ask a few key questions and use these to guide the display of subsequent choices
 - Use helpful groupings (grocery store analogy)
 - Bilateral choices (eye doctor analogy)

The Choice Architecture Continuum

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Annuitization Rate



Behaviorally Informed Annuity Design

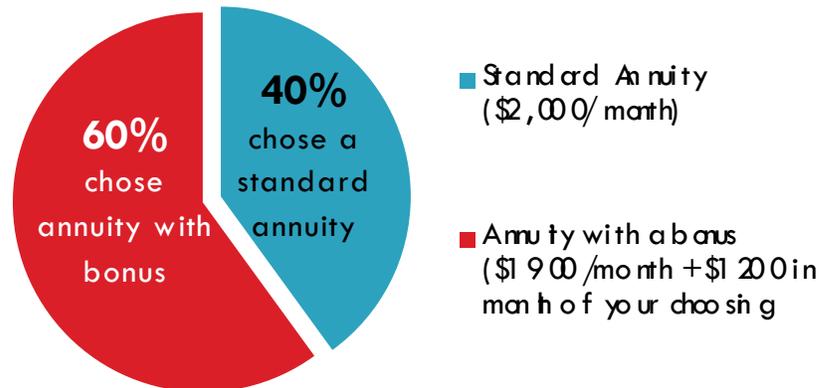
Behaviorally Informed Annuity Design: Guaranteed Payout Option

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Behaviorally Informed Annuity Design: Annual Bonus

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The demand for an annuity with a one-time annual bonus is consistent with a desire for commitment (to save) due to self control problems

Source: Beshears et al., 2013

Behaviorally Informed Annuity Design: Deferred Annuity + Right to Cancel

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- Right to cancel
 - ▣ Reduces potential for ex ante worry about ex post regret
 - ▣ Status quo bias after annuity purchase → reduced desire to cancel

Behavioral Economics and Public Policy Toward Lifetime Income

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What does an understanding of behavioral economics bring to the policy table?

Additional motives for policy intervention

New policy tools

Ways in increase the effectiveness of traditional policy tools