

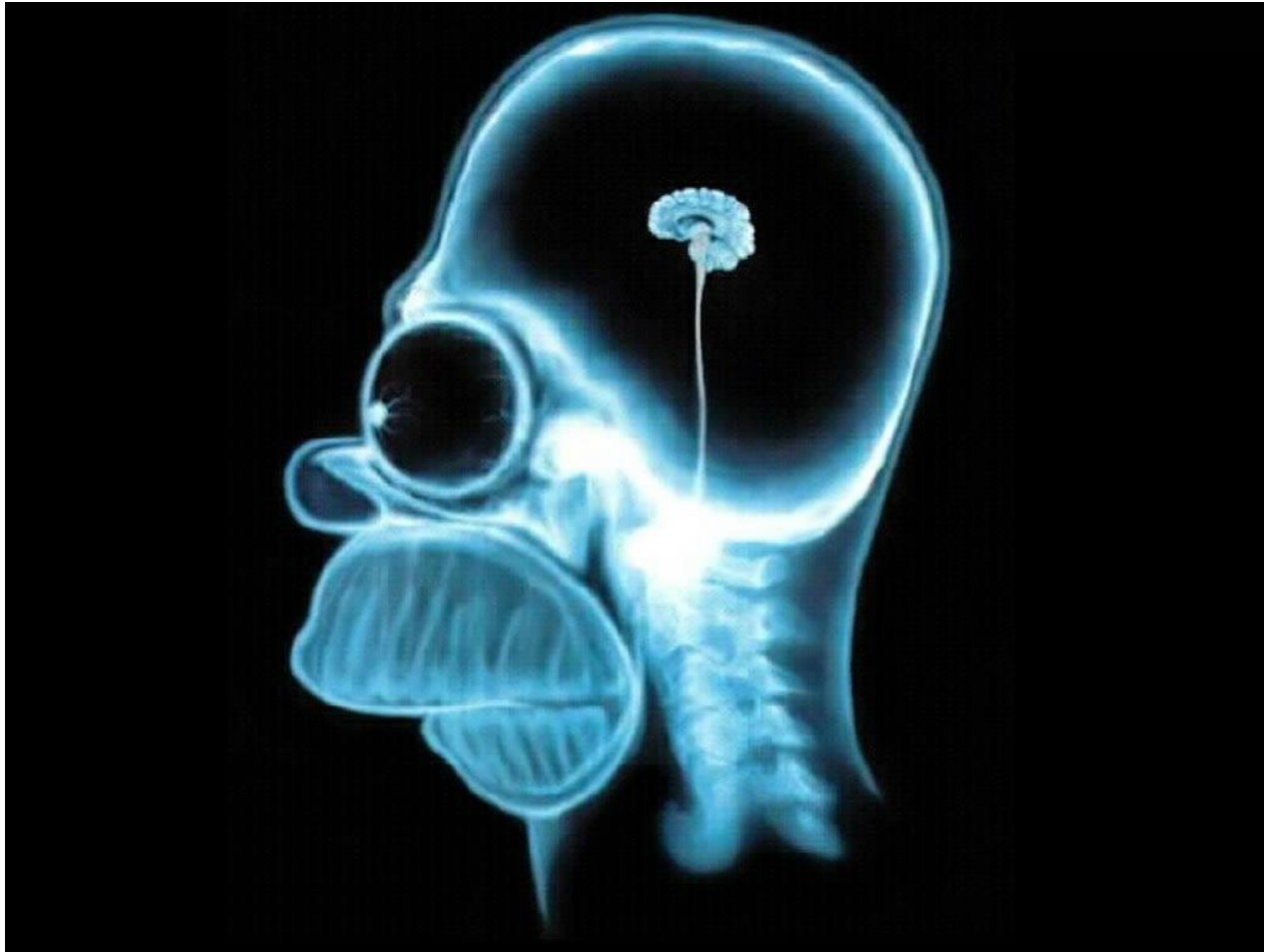
Behavioural Economics and Retirement Savings

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Assumptions of Behavioural Economics

- Humans vs. Econs
- Bounded Rationality
 - Economics model is that agents are as smart as the smartest economist, or even as smart as the smartest economist thinks he is.
 - The truth is now documented with neuro-economics

Neuro image of bounded rationality

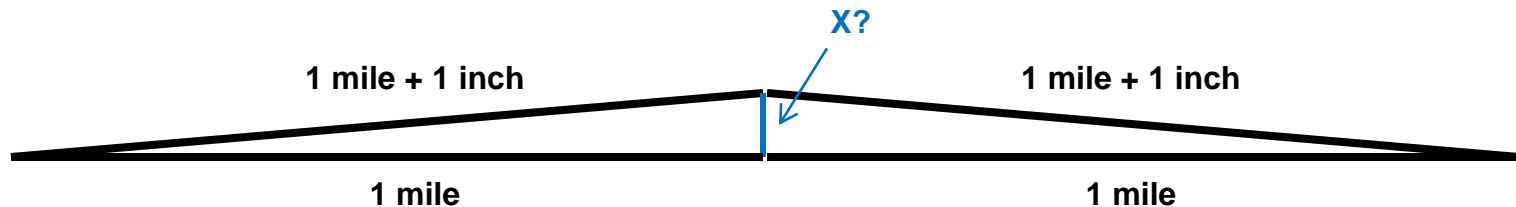


Assumptions of Behavioral Economics (cont.)

- Bounded Willpower
 - Econs never overeat or have hangovers.
 - They plan meticulously for retirement and then execute that plan perfectly.
- Are you a Human or an Econ?

Geometry Problem

Imagine two one-mile long pieces of railroad track, put end to end, and attached to the ground at the extremes. When it gets hot, the track expands by one inch, forcing it to rise above the ground. For simplicity, assume the track remains straight. How high is the track off the ground at the peak?



Give a high and low estimate such that you are 90% sure the correct answer lies between them.

Geometry Problem: Correct (Rational) Answer

Correct (Rational) Answer:

- Pythagorean Theorem:

Solution: $x = \sqrt{(5,280 \times 12 + 1)^2 - (5,280 \times 12)^2} = \sqrt{126,721} = 355.98$ inches
i.e. 29.6 feet!

Geometry Problem: Descriptive Reality

Correct (Rational) Answer: 29.6 feet

Typical Actual Answers:

Median Low Guess: $\frac{1}{2}$ Inch

Median High Guess: 2 Inches

Conclusions: Answers are overconfident and biased (anchored too low).

Gun Deaths

- Question: “What do you think is the ratio of homicide gun deaths to suicide gun deaths in the US?”
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1. 10 times more homicide gun deaths than suicides.
 2. 5 times more homicide deaths than suicides
 3. Same number of deaths
 4. Half as many homicide deaths than suicide deaths.

Gun Deaths in US

- Average answer: about 7-to-1
- Correct (rational) answer: about 1-to-2
 - Gun suicides 19,000 per year
 - Gun homicides 11,000 per year
- *Availability*: frequency is estimated by the ease with which instances can be brought to mind.
- *Biases occur because people overestimate frequency of vivid, emotional events.*

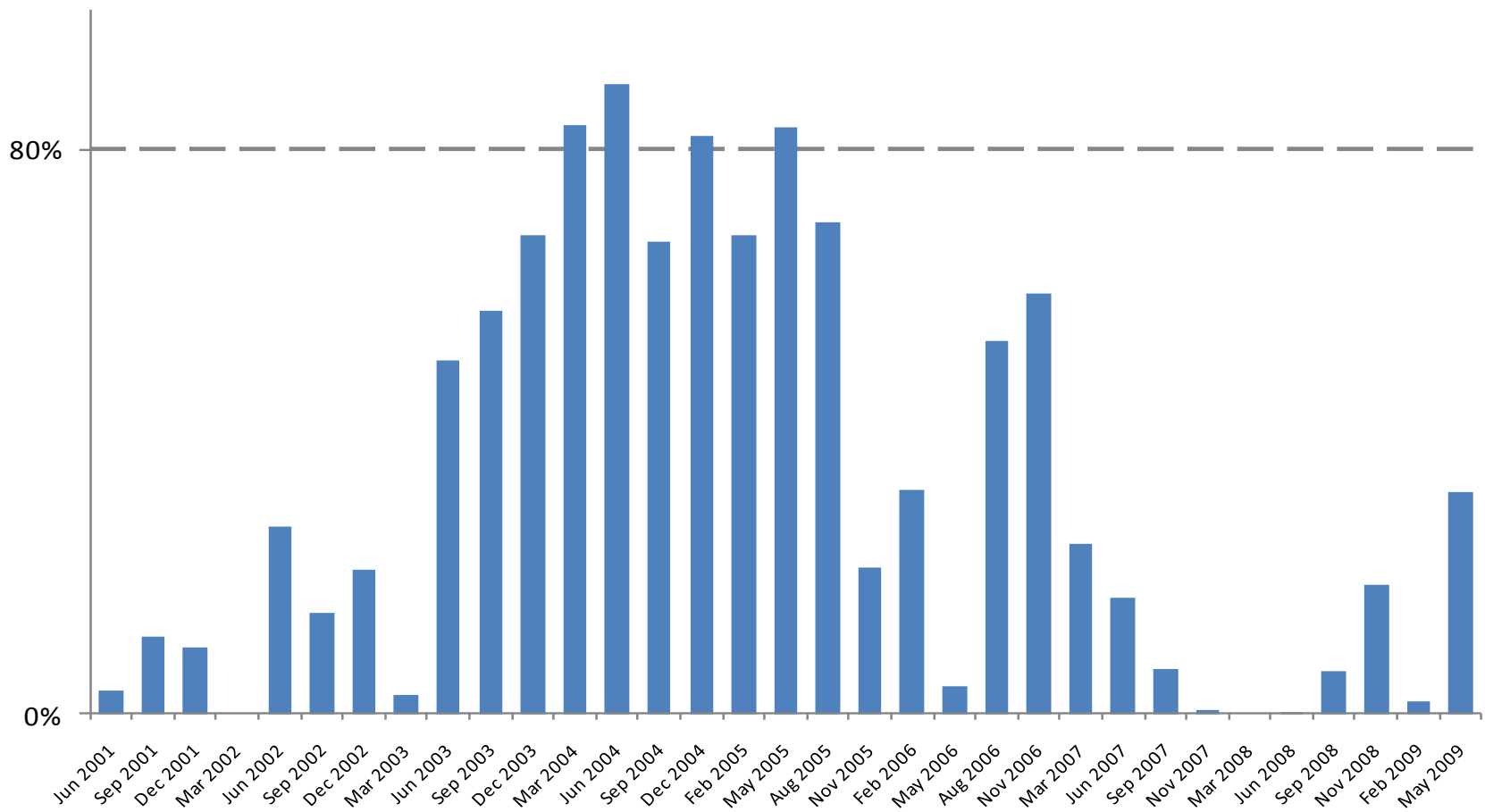
What about CFOs? Are they overconfident?

- Managerial Miscalibration
 - Itzhak Ben-David, John R. Graham, Campbell R. Harvey
 - NBER Working Paper No. 16215, Issued in July 2010

CFO SURVEY

1. Over the next year, I expect the annual S&P 500 return will be ____%
 2. There is a 1-in-10 chance the actual return will be greater than ____%
 3. There is a 1-in-10 chance the actual return will be less than ____%
- Notice there should be an 8-in-10 chance the return is *between* the answers to 2 & 3

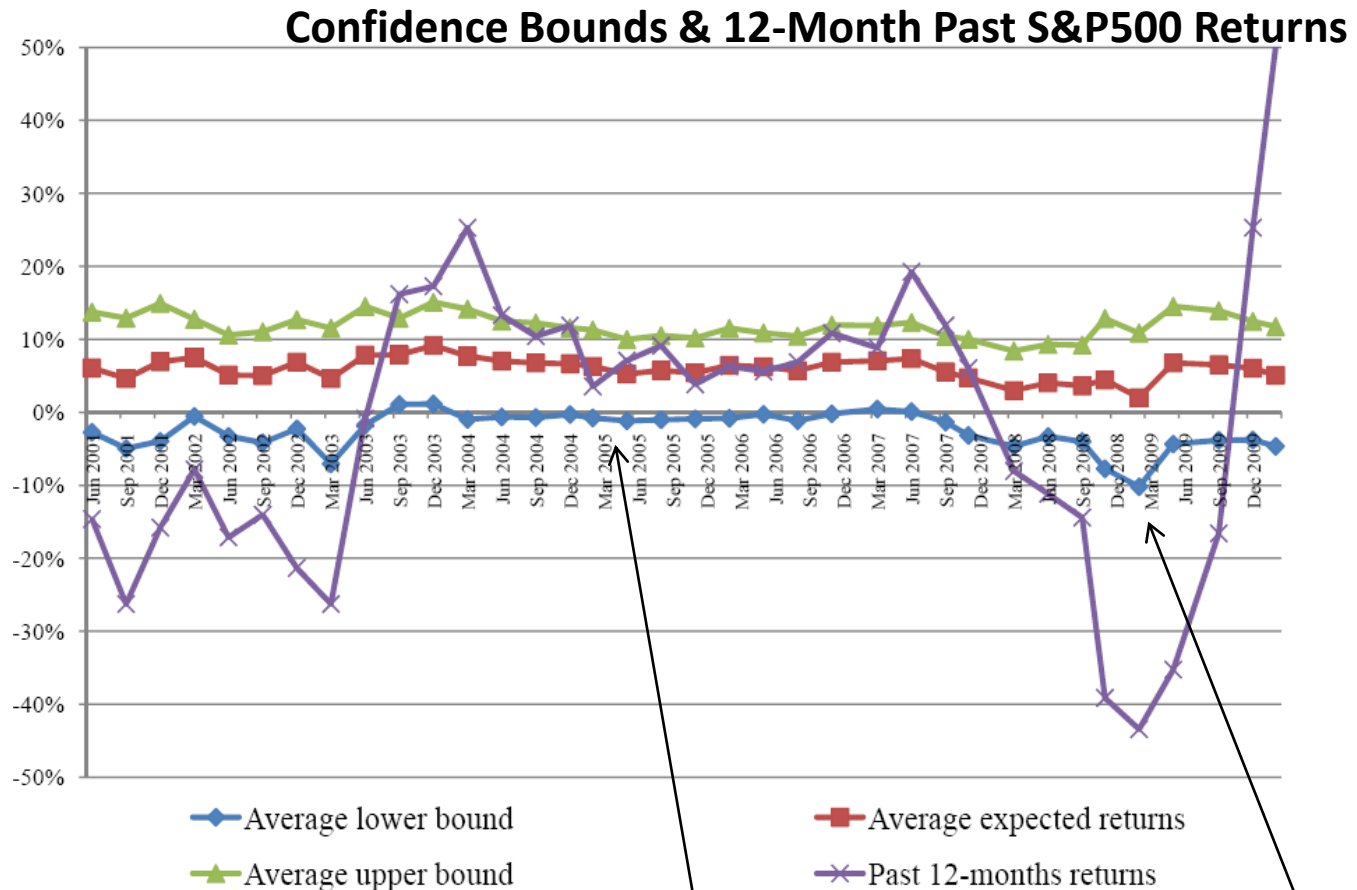
Percent of CFO Forecasts with 80% Confidence Interval that Include the S&P500 Realized Returns



Overall: actual falls within 80% limits 33% of the time

CFO Optimism & Anchoring

- Average CFO confidence bounds, over time



- CFOs, like everyone, are also optimistic & anchored on the past

Using Behavioural Economics to Improve Retirement Savings

- Point to note: traditional economic theory offers no useful advice.
 - People are already saving the right amount!
 - The only variable is the after-tax interest rate, but theory does say what the sign of the effect is.

Goals of the Nudge Approach

- Apply the techniques of the psychology of decision making and behavioral economics to improve decisions without limited choices.
- Offer an approach new approach to public policy that is neither left nor right.

One Approach to Policy: Libertarian (liberal) Paternalism

Both terms are currently unpopular (at least in the US), and seemingly contradictory. But, neither concept should be controversial:

- *Libertarian*: protect the individual's right to choose
- *Paternalism*: do what you can to improve the welfare of people

And it is possible to achieve these goals with better **choice architecture**.

Choice Architecture

Anyone who designs the environment in which people make choices is a choice architect

- Menus
- Store layouts
- Government

What is the alternative?

Choice architects must choose *some* set of institutional arrangements. What design should planners pick?

Example: cafeteria menu planning—in what manner (order, salience..) should the food be presented?

- The plan that make participants better off?
- The options that make the participants worse off? (e.g., fattest?)
- Random?
- The options that make the director best off?

Note that **some** choice has to be made.

Most Famous Nudge



Detail of Fly Painted on Urinal



Results: 80% less “spillage”

Principles of Good Choice Architecture

- Choose defaults with care
 - Expect error
 - Give feedback
 - Understand mappings
 - Structure Complex Choices
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- How should we apply these to retirement savings?

Retirement Savings

- The switch from defined benefit pension plans to defined contribution plans shifts the burden of deciding how much to save and how much to invest onto employees, i.e, Humans.
- Many are not up to the task.
 - Fail to join the plan (if they have one)
 - Don't save enough

One Prescription: Automatic Enrollment

- The default option is changed. Participants are enrolled into the plan unless they explicitly opt out
- Good news: enrollments jump. In one company studied by Madrian and Shea, enrollments of new employees go from 49% to 86%
- Preliminary results from NEST 90% take-up.

Down Side of Auto Enrollment

- Bad news: whatever default options are selected by the plan administrators are taken as “suggestions” by employees
- In Madrian and Shea’s firm, most employees adopt the 3% savings rate (and 100% allocation to money market fund)

One Solution: Save More Tomorrow

- People pre-commit to saving more in the future
- Saving increases are synchronized with salary increases
- People remain in the plan unless they drop out

First Implementation: Participation Data

Plan participants	315
Received advice	286
Accepted the advice	79
Offered the SMarT plan as an alternative	207
Accepted the SMarT plan	162
Bailed out of the SMarT plan before 2 nd pay raise	4
Bailed out of the SMarT plan before 3 rd pay raise	33
Pre-SMarT participation rate	64%
Post-SMarT participation rate	81%

Saving Rates

	ALL	No Advice	Took Advice	Took SMarT	Declined Advice
N	315	29	79	162	45
Pre-advice	4.4%	6.6%	4.4%	3.5%	6.1%
1 st Pay Raise	7.1%	6.5%	9.1%	6.5%	6.3%
2 nd Pay Raise	8.6%	6.8%	8.9%	9.4%	6.2%
3 rd Pay Raise	9.8%	6.6%	8.7%	11.6%	6.1%
4 th Pay Raise	10.6%	6.2%	8.8%	13.6%	5.9%

Progress

- Some version of automatic escalation (generic Save More Tomorrow) now used by more than four million Americans
- This is generating at least \$ billion of new savings per year.

Other Choice Architecture Issues

- Expect Error
 - Most employees know almost nothing about investing.
 - It is crucial to have well-designed default investment strategies.
 - Even if there are other options, most people will take the default, especially if it is well-designed.

Structure Complex Choices

- If there is more than one option, the best structure is hierarchical. E.g.,
 - Do you want the default? Yes or no. If yes, done.
 - If no, do you want one of these few EZ products?
 - If no, go for it, at your own risk. Few will make it to this stage.

Give Feedback and Understand Mappings

- Understand mappings: telling someone aged 42 that she has £47,952 saved for retirement. Is this a lot or a little?
- Better to provide information in terms of £ per month in retirement. (Of course, easier to say than to do.)
- Frequent feedback is probably NOT a good idea. Reinforces fears about market fluctuations.

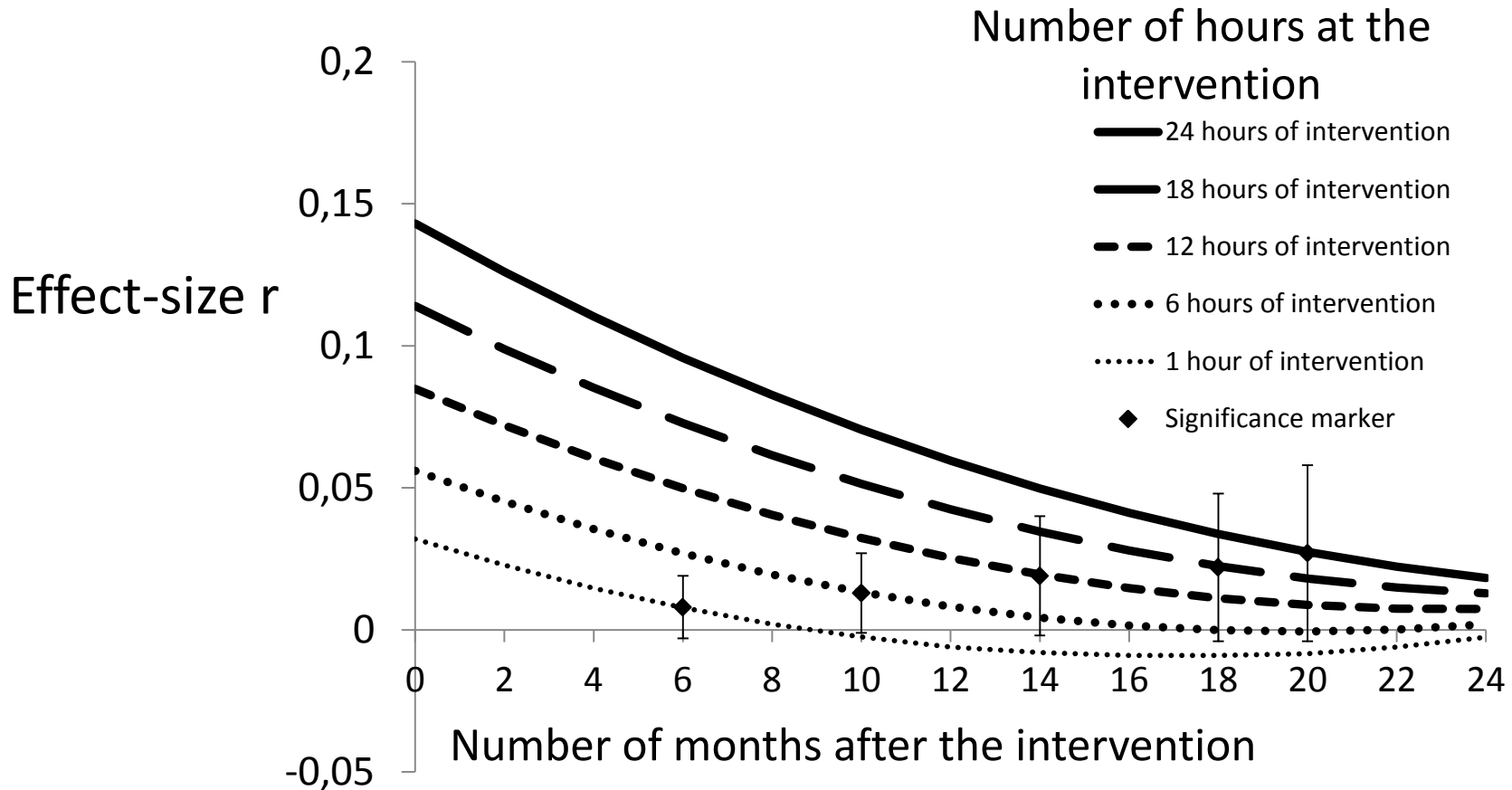
What About Financial Education?

- Financial literacy is dreadful.
 - Many don't know the difference between a stock and a bond.
 - Many think one stock is safer than a mutual fund.
 - Many think that investing in the firm where they work is safer than in a mutual fund.
- So including financial literacy in high school curricula is certainly useful.
- Compound interest at least as important as trigonometry.

However, ...

- There is no evidence that financial education improves outcomes.
- New meta-analysis of 168 papers on the efficacy of financial education on financial actions finds tiny effects.

Interventions Decay: The Case for “Just-in-time” Financial Education



After a delay, even long interventions have no significant influence

Conclusions

- Offering “just in time” help may be useful.
- But good choice architecture can help a lot and costs very little.
- Mantra: Make it Easy.
- Next step: decumulation strategies.