

Investing, Your Brain and Behavioral Finance

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ENVIRONMENT



Top 10 Stressors of Adults

- Money
- Work
- The Economy
- Family Responsibilities
- Relationships
- Personal Health Concerns
- Housing Costs
- Job Stability
- Health Problems Affecting Family
- Personal Safety

Source: American Psychological Association



Anxiety

- “Study Reveals the Enormous Toll that Financial Anxiety is Taking on People's Lives”
- “Americans Worry More About Their Finances Than Anything Else”
- “We’re Stressed by Retirement Preparations – But Doing Little to Prepare”



Letters to USA Today

- “What one stock can I buy that will make me \$50,000 richer?” 3/28/12
- “Are there any ‘safe’ stocks?” 8/14/15
- “How can I protect my money from the election?” 11/4/16



Ridiculous Headlines

“History: 50-50 Odds of Stocks Rising in June” 5/23/15 USA Today

“Sweet Stocks to Own Until December” 11/2/16 USA Today

“Investors Predict the Market Will Drop, But Not Yet” 4/25/12 Cnnfn.com

“Stocks Poised for Big Move, but Which Way?” USA Today 4/11/17 6:30 a.m.

“Oct. 28 Has Been Best Day for Wall Street Over Past 65 Years” 10/28/15 Marketwatch.com



“10 Great Stocks for 2015 from 3 Market Wizards”

www.marketwatch.com 12/30/14

The 2015 Performance of the “10 Great Stocks for 2015”

-79.8%	-20.1%
-72.7%	-16.0%
-33.7%	-15.1%
-32.3%	-3.7%
-20.5%	1.6%



“Wild Week for Stocks”

- You won't hear many people on television talk about investing for the long-term
- This is not a sporting event where you cheer on your team



Key Words

- What should investors do now?
 - “Four Things to Do and Not Do, Right Now”
- Investors must do this...
- The next logical move is...
- The best thing for investors to do is...

Doing nothing seems wrong.



MONEY MAKES PEOPLE FUNNY



Cupboard is Pretty Bare

- 26% of workers have < \$1,000
- 45% of workers have < \$25,000
- “I’m going to work until I die.”

Source: Employee Benefit Research Institute 2018



“No, Thanks. I Already Have Enough Money.”

- “I can’t afford to save.”
- “Don’t Make the Mistake that Cost Boeing Employees \$98 Million” 11/28/14 www.marketwatch.com
 - 75% match up to the first 8% contributed
 - 48,000 didn’t save enough to get the full match
 - 8,400 didn’t save anything



And Yet...

- People will make a big effort to save a few dollars on a small purchase (but not for a large purchase)
 - ... **regularly** drives 6 miles out of her way to save 5 cents a gallon on gas. It usually takes 15 minutes to get there, if the stoplights behave and traffic is decent. After filling her 15-gallon tank, she has saved 75 cents (not counting the gas used).
 - ... **regularly** drives 50 miles each way to trade an empty printer cartridge for a ream of computer paper at an office supply store.
 - ...once drove to another state to save \$7 off a \$12 box of Tide.

“Found” Money

Imagine you just got \$10,000 because you:	How would you spend it?
<ul style="list-style-type: none">- got an unexpected year-end bonus- your deceased aunt left it to you- won it from a lottery ticket	<ul style="list-style-type: none">a) on luxuriesb) on necessitiesc) I'd invest itd) I'd save it

What Did Most People Say They'd Do?

- Year-end Bonus

- Spend on necessities or invest it

- Deceased Aunt

- Invest it or save it

- Lottery Ticket

- Spend on luxuries or necessities

- Why would they use the money differently?

More “Found” Money

- College students planning to go to a basketball game the next day were told they'd get \$5 when they arrived; others were “surprised” with \$5 at the game
 - Who do you think spent more at the game?
- When shoppers come across “instant coupons” in the grocery store, they spend 12% more on spontaneous purchases than other shoppers



Consider the Following, Part 1

- Supermarket sales cause people to stock up
 - Buy low
- Stock market sales cause people to flee
 - Sell low

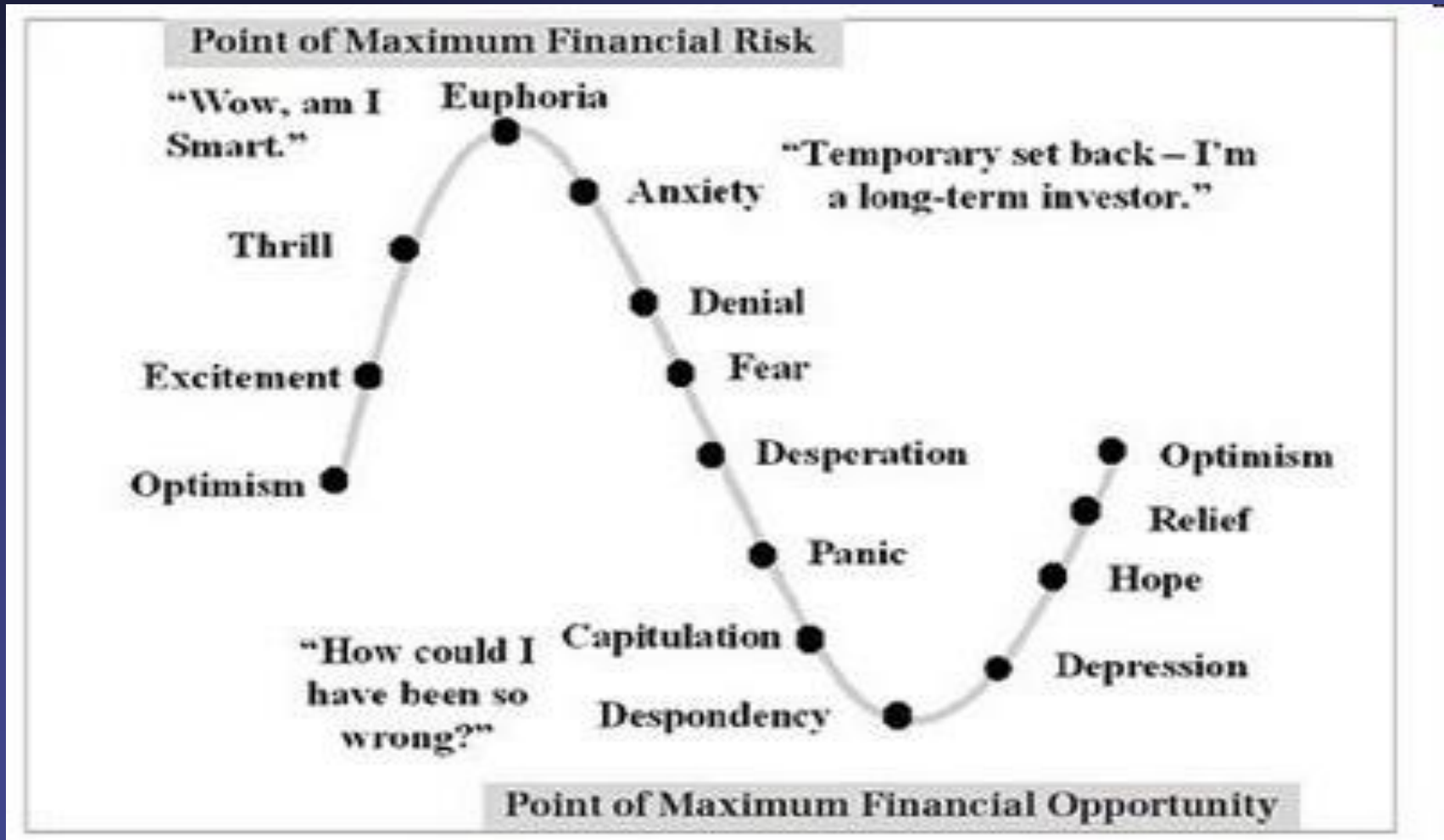


Consider the Following, Part 2

- When supermarkets raise prices, people shop elsewhere
 - Stop buying high
- When the stock market rises, people get interested
 - Start buying high

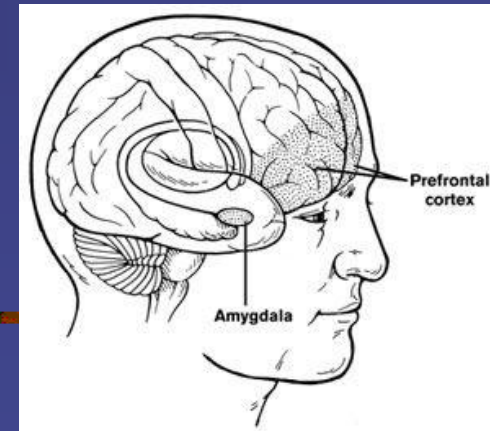


Cycle of Market Emotions



Amygdala is Powerful

- The fearful, intuitive, involuntary impulses from the amygdala are able to overcome the thinking, thoughtful, logical part of the brain (pre-frontal cortex)
 - First: quick, emotional, reflexive
 - Later: measured, logical, reflective



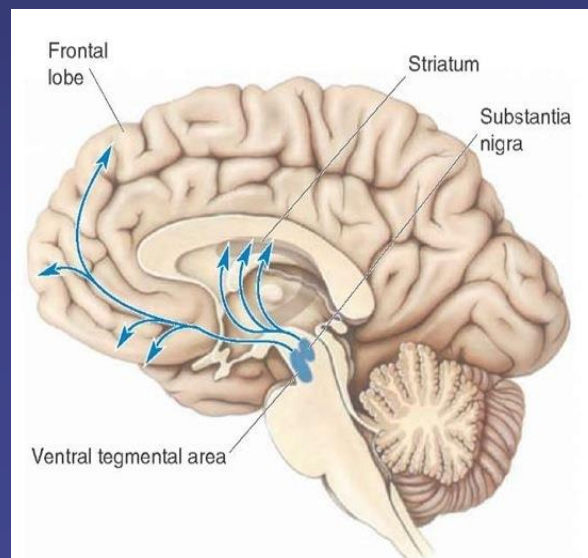
Their Relationship

The prefrontal cortex is supposed to keep areas like the amygdala in check, and instruct them that, for example, 'I know that's a snake, but it's behind a piece of plexiglass, so we're good'. It's much like a parent and child. Children are less flexible in their responses to situations than parents, whose job is to instruct them and help them regulate.

-- Dartmouth College Study in 2009

Feeling Good

- Among other things, dopamine helps us figure out how to take actions that will result in rewards
- Several pathways throughout the brain



Dopamine is Powerful

- Getting what you expected produces no dopamine kick
 - Explains why addicts crave an ever-larger fix
- But a reward fires up the brain!
 - Day traders
 - Ohio state lottery study



NOT SO RATIONAL AFTER ALL



“Econs”

- Until recently, the popular, accepted model of economic behavior assumed we were a population consisting only of “Econs”
 - i.e. Like Mr. Spock, people gather the necessary facts and then make a rational decision



Surprising Discovery

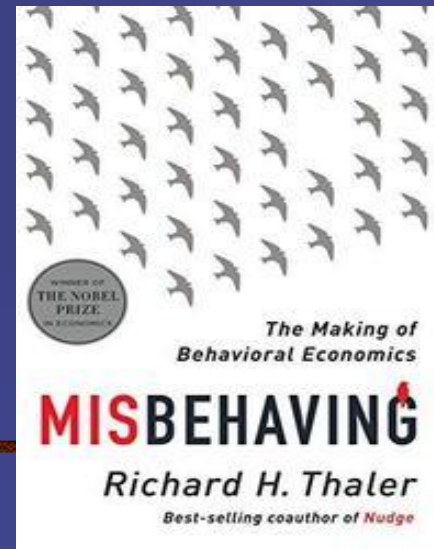
- Richard Thaler, Daniel Kahneman, Amos Dversky, Cass Sunstein & others have discovered that many people are not “Econs”
 - People act in ways inconsistent with economic theory
 - People consider many factors like recent events, how things are framed, aversion to loss, etc. (“SIFs”)
 - The field of Behavioral Finance gets started
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Richard Thaler

- Won Nobel Prize in 2017 in Economic Sciences for his contributions to behavioral finance

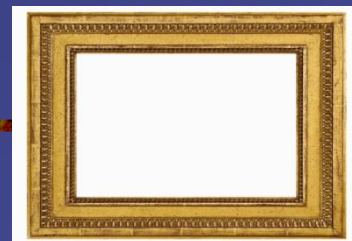


- *Misbehaving: The Making of Behavioral Economics*



Framing – Cancer Treatments

- 400 people were told there were two treatment options: either surgery or radiation
- When told that:
 - 10 out of 100 patients die from the surgery, 50% said they'd prefer surgery
 - 90 out of 100 patients survive the surgery, 84% said they'd prefer surgery



Basketball Tickets

- A family pays \$150 for tickets to a basketball game to be played 40 miles from their home. On the day of the game there is a snowstorm. They decide to go anyway, but say that if the tickets had been given to them, they would have stayed home.



Tennis Club

- John paid \$1,000 to join a tennis club for one year. After 3 weeks, he develops tennis elbow which makes playing painful. Miserable, he continues to play saying, “I don’t want to waste the \$1,000!”



\$15

- You're shopping for a clock radio and find the one you like for \$40. As you're about to buy it, a friend tells you the exact same model is available 10 minutes away for \$25. Would you drive to the other store?
 - ...a TV and prices were \$815 and \$800?
 - ...a car and prices were \$30,015 and \$30,000?
-

BIASES

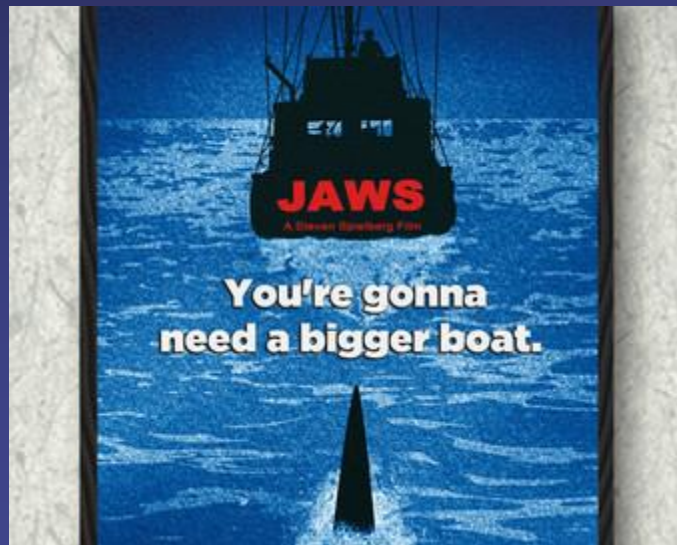


Biases

- It can be difficult to always be objective
 - Are the financial decisions we make only about money?
 - Conversations often begin with money but end with feelings and emotions. Emotions may run high because people are really talking about their hopes and dreams.
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Recency Bias

- People overweight recent, easy to recall information and assign a higher probability to it



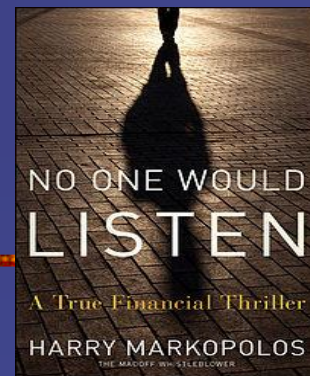
1975

Recency Bias – Expected Future Returns

- In December of 1999, investors expected their stocks to earn 18.4% over the next 12 months
 - In March 2003, after losses in 2000, 2001 & 2002, investors expected their stocks to earn 6.3% over the next 12 months
-

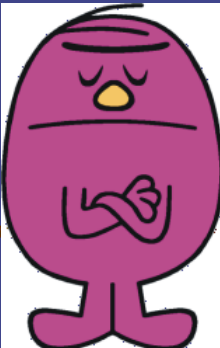
Affinity

- We take someone's advice because we like them or they share our values
 - e.g. "I don't know how to invest my 401(k). I'll ask John when I play golf with him tomorrow."
 - e.g. Bernie Madoff "made" 12% annual returns for his 13,500 clients (er, victims)



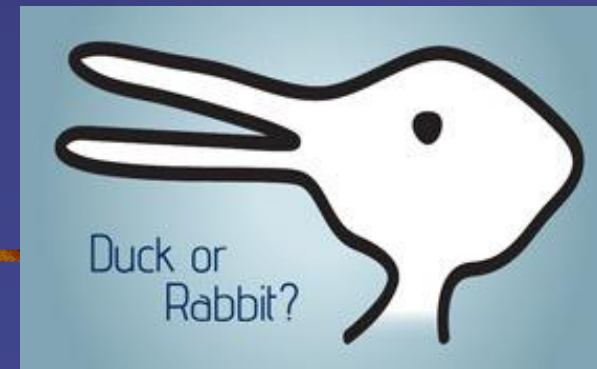
Anchoring

- Although there may be more productive investment opportunities, an investor remains fixated (usually on a price)
 - e.g. “I’m waiting to sell until the price gets back to where I bought it at so I don’t lose any money.”



Confirmation

- We tend to seek out and remember things that confirm our preconceptions and opinions
 - “See, I told you the market would go up (or down) when _____!”
- Objectivity is lost

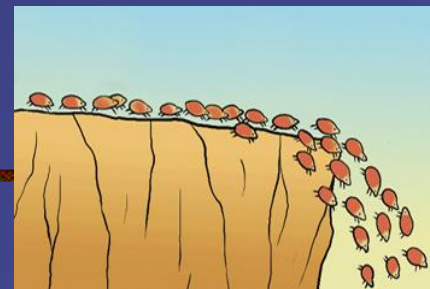


Herd Mentality

- The tendency to mimic the rational – or *irrational* – actions of a group
 - e.g. “After all, people wouldn’t be buying (or selling) it if it wasn’t the right thing to do.”
 - e.g. It’s better to be wrong together than wrong alone

“(People) go mad in herds, while they only recover their senses slowly, and one by one.”

--Charles Mackay, Extraordinary Popular Delusions and the Madness of Crowds (1841)



CHOICES AND NUDGING



Choice Architecture

- The way in which choices can be presented while not taking away the power for a person to choose
 - Number of choices
 - Order of choices
 - A “default” choice
 - No such thing as a neutral design
 - Can have an enormous impact
-

OFFICIAL BALLOT, GENERAL ELECTION
PALM BEACH COUNTY, FLORIDA
NOVEMBER 7, 2000

(REPUBLICAN)
GEORGE W. BUSH · PRESIDENT 3➡
DICK CHENEY · VICE PRESIDENT

(DEMOCRATIC)
AL GORE · PRESIDENT 5➡
JOE LIEBERMAN · VICE PRESIDENT

(LIBERTARIAN)
HARRY BROWNE · PRESIDENT 7➡
ART OLIVIER · VICE PRESIDENT

(GREEN)
RALPH NADER · PRESIDENT 9➡
WINONA LaDUKE · VICE PRESIDENT

(SOCIALIST WORKERS)
JAMES HARRIS · PRESIDENT 11➡
MARGARET TROWE · VICE PRESIDENT

(NATURAL LAW)
JOHN HAGELIN · PRESIDENT 13➡
NAT GOLDBABER · VICE PRESIDENT

OFFICIAL BALLOT, GENERAL ELECTION
PALM BEACH COUNTY, FLORIDA
NOVEMBER 7, 2000

◀ 4 (REFORM)
PAT BUCHANAN · PRESIDENT
EZOLA FOSTER · VICE PRESIDENT

◀ 6 (SOCIALIST)
DAVID McREYNOLDS · PRESIDENT
MARY CAL HOLLIS · VICE PRESIDENT

◀ 8 (CONSTITUTION)
HOWARD PHILLIPS · PRESIDENT
J. CURTIS FRAZIER · VICE PRESIDENT

◀ 10 (WORKERS WORLD)
MONICA MOOREHEAD · PRESIDENT
GLORIA La RIVA · VICE PRESIDENT

WRITE-IN CANDIDATE

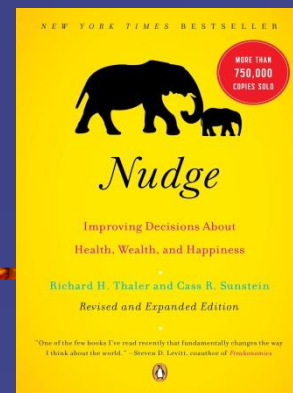
To vote for a write-in candidate, follow the
directions on the long stub of your ballot card.

es will
electors.)



Nudge

- Since people sometimes make irrational choices, how could the presentation of choices be altered to help people make a better choice, without taking away their ability to make other choices?
- How can this be done for their good?



Healthy Nudges

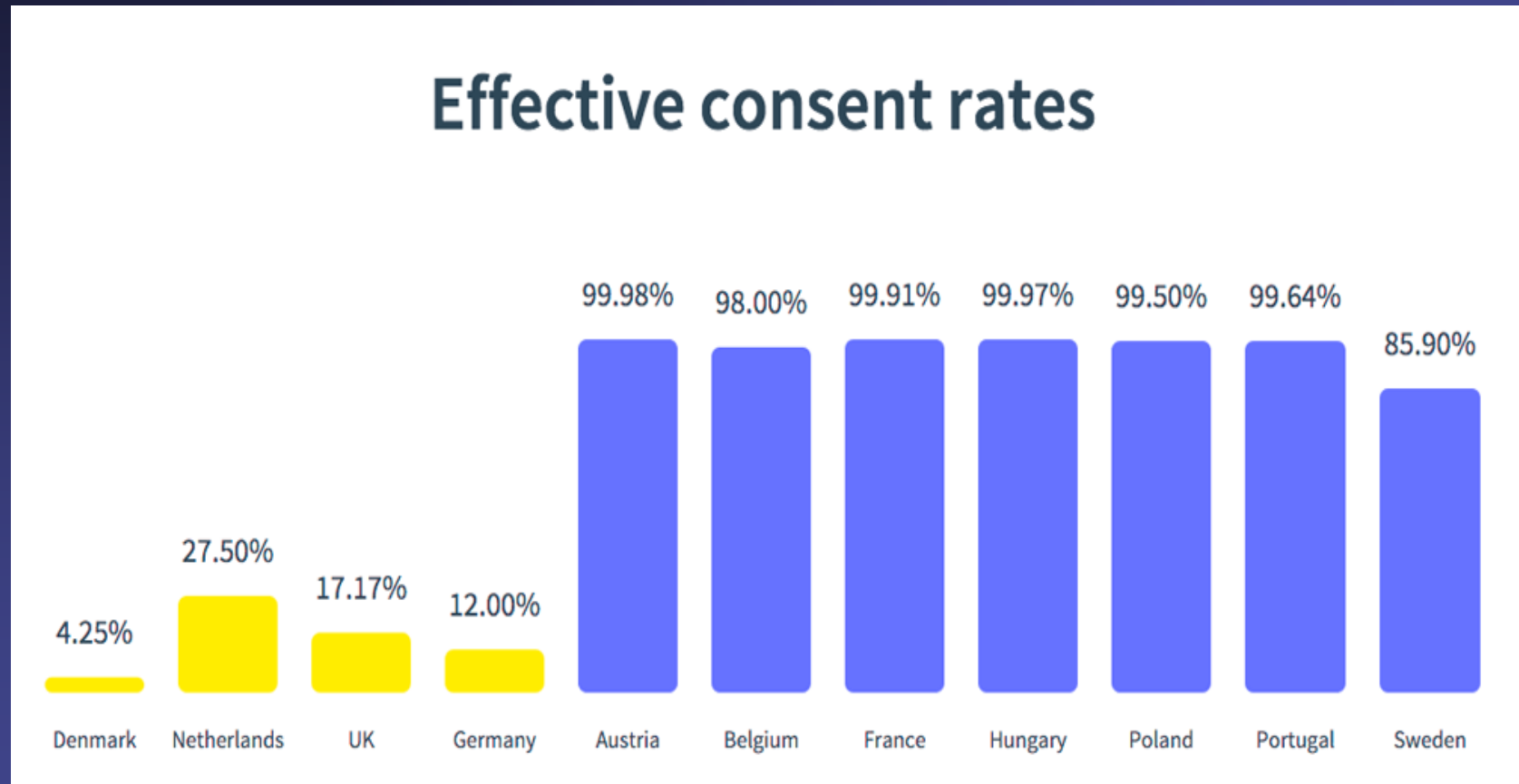


Believe it or Not

- In the Netherlands, the 1998 creation of a national donor registry was accompanied by a huge educational campaign and a mass mailing of 12 million+ letters (in a country of 15.8 million) encouraging citizens to register
- It failed to change the consent rate



Organ Donor – Opt Out or Opt In



Yellow bars = Opt-in Blue bars = Opt-out

“Do Defaults Save Lives?” 11/20/03 www.sciencemag.org

Many 401(k) Decisions...

- How much would you like to save from each paycheck?
- Would you like your contributions to be deducted on a pre-tax basis, Roth basis or both ways?
 - Here are the pros and cons of each
- What fund(s) would you like to invest in?
 - What percentage into each fund?
- Do you want to have your account rebalanced automatically?
 - Annually or semi-annually?



...or Just One Decision

☐ By checking this box, you agree to save 4% of your salary on a pre-tax basis, have it invested in a pre-determined, moderately aggressive portfolio which will be automatically rebalanced each year and each time you get a raise in the future, will save 2% more.

- Auto-enrollment has been a huge success
 - “Unless you contact HR, you will have 3% of your salary deducted...”



Thinking Two Ways

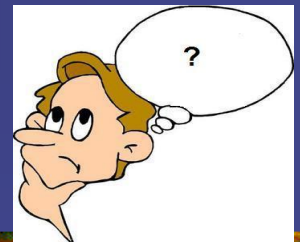
➤ Thinking Fast and Slow by Daniel Kahneman

➤ Expanded on “dual process theory”

➤ System 1: fast, automatic, intuitive, frequent, subconscious

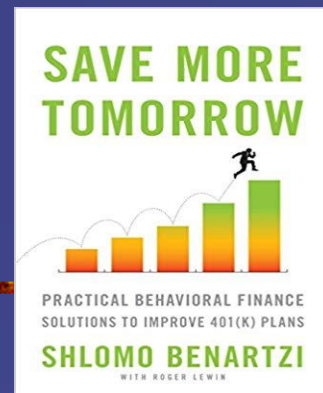


➤ System 2: slow, deliberate, logical, irregular, conscious



Save More Tomorrow

- The key is that you won't do it today
 - *Overcomes* the bias for having money now
- Your pay will still increase each year
 - *Overcomes* the bias for loss aversion
- It's easy
 - *Overcomes* the need to analyze it

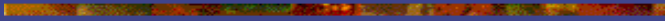


What Can Be Done?

- Align system 1 impulses with system 2 goals
 - Make saving/investing automatic to remove emotions
 - Don't get a password to check your 401(k) balance
 - Turn off the financial tv stations
 - File away predictions and pull them out later
-

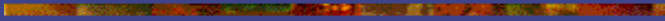
Resources



- Your Money and Your Brain
 - by Jason Zweig
 - Nudge: Improving Decisions About Health, Wealth & Happiness
 - by Richard Thaler and Cass Sunstein
 - Misbehaving: The Making of Behavioral Economics
 - by Richard Thaler
- 

Resources



- Thinking Fast and Slow
 - by Daniel Kahneman
 - Predictably Irrational
 - By Dan Ariely
 - The Paradox of Choice
 - By Barry Schwartz
- 

Thank You



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