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Outline

1. Definition of behavioral economics
2. Normative economics and prescriptive economics
3. Coin Auction
4. Shrouding
5. David's 30 pieces of advice

Behavioral economics

- Definition: Psychology and economics is a field of academic research that studies the joint influences of psychological *and* economic factors on behavior.
- Most researchers in the field of psychology and economics believe that the classical economic model of behavior (Homo Economicus) is too extreme.
 - Too rational: People occasionally make mistakes and those mistakes are predictable.
 - Too selfish: People do not care only about themselves (or their family).
 - Too willful: Good intentions are not always aligned with our subsequent actions.

Normative Economics and Prescriptive Economics

- Normative economics: identifying what people and societies should do to maximizing social well-being.
 - Prescriptive economics: giving practical, actionable advice that typical people can understand and implement.
 - For example: a 1,000 page mathematically intensive treatise on optimal household financial decision-making might be normative, but it's probably not prescriptive.

Coin Auction

1 coin-filled vase = 3.84 lbs
1 lb = 16 oz water bottle



First, please tell me your expected value (in total dollars) of the coins in the coin-filled vase.

Now, please provide a 90% confidence interval for the value of the coins in the vase. A 90% confidence interval is a pair of numbers, such that there is a 5% chance that the true total value of the coins in the vase is below your low number and a 5% chance that the true total value of the coins in the vase is above your high number. Accordingly, there is a 90% chance that the true total value is between your two numbers.

We're now going to conduct an actual auction for the coins in the vase. Everyone makes a bid for the coins in the vase. The person who makes the highest bid receives the actual dollar value of the coins in the vase. The highest bidder pays me their bid.

Expected value	5th percentile	95th percentile	Auction bid
6.75	4	10.5	7.25
9.8	4	15	1
10	5	18	8
15	10	20	6
17	14	20	16
20	10	30	10
20	8	80	15
22.5	17.5	30	10
25	15	40	15
25.1	15.15	70	1
30	28	32	31
32	5	50	15
34.5	24.5	44.5	24.5
40	30	50	33
40	10	70	20
40	10	90	21.6
43.83	30	65	31.5
44	20	70	5
45	35	55	20
49	46.55	51.45	25
50	10	100	12.5
50	30	65	3
52	30	74	5
52	49	55	35
53	35	80	45.01
55	15	95	20
60	62.75	57.25	30
60	45	110	30
75	20	1000	50
77	50	90	77
100	40	120	0
100	60	170	75
200	100	400	275

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We're now going to conduct an actual auction for the coins in the vase. Everyone makes a bid for the coins in the vase. The person who makes the highest bid receives the actual dollar value of the coins in the vase. The highest bidder pays me their bid.

True value of coins in the vase: \$31.74.
48% of the “90% confidence intervals” include \$31.74.
21% of the bids exceed \$31.74.

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The winner's curse

- The person who wins the auction, tends to be the one who over-values the good the most.
- This doesn't mean that you should avoid all auctions, but it does mean you should be very wary of situations in which you only end up buying something when you have an extreme view of the value of the good/service being sold.

Good news and bad news.

- I am not going to exploit you to make money. (This auction is cancelled. No money will change hands.)
- Most businesses don't operate under the same principles.

How do firms/counter-parties exploit you?

- Let's consider the example of a bank.
- For the academic (mathematically formal) version of this example, see
Gabaix, Xavier, and David Laibson. "Shrouded attributes, consumer myopia, and information suppression in competitive markets." *The Quarterly Journal of Economics* 121, no. 2 (2006): 505-540.

Free checking! Free gift for opening an account! (And shrouded profit centers.)

- Minimum daily balance threshold fee
- Foreign transaction fees (3% of the transaction amount)
- ATM fees
- Teller fees (in-bank and especially out-of-network)
- Replacement card fees
- Rush replacement card fees
- Check image service fee
- Statement copy fee
- Out-transfer account fees
- Overdraft fees
- Stop payment fees
- Below market interest rates on balances

Cross-selling into over-priced (convenient) products

- Wire transfers
- Credit cards
- Personal lines of credit
- Mortgages
- CD's (certificates of deposit)
- Other investment products (money market funds, mutual funds, brokerage services, etc...)
- Cross-selling with partners

Be mindful of cross-subsidies

- Some consumers benefit from these complex systems with loss-leaders and (back-end, shrouded) profit centers
- Some consumers pay a terrible price as a result of these shrouded fees

Auction analogy

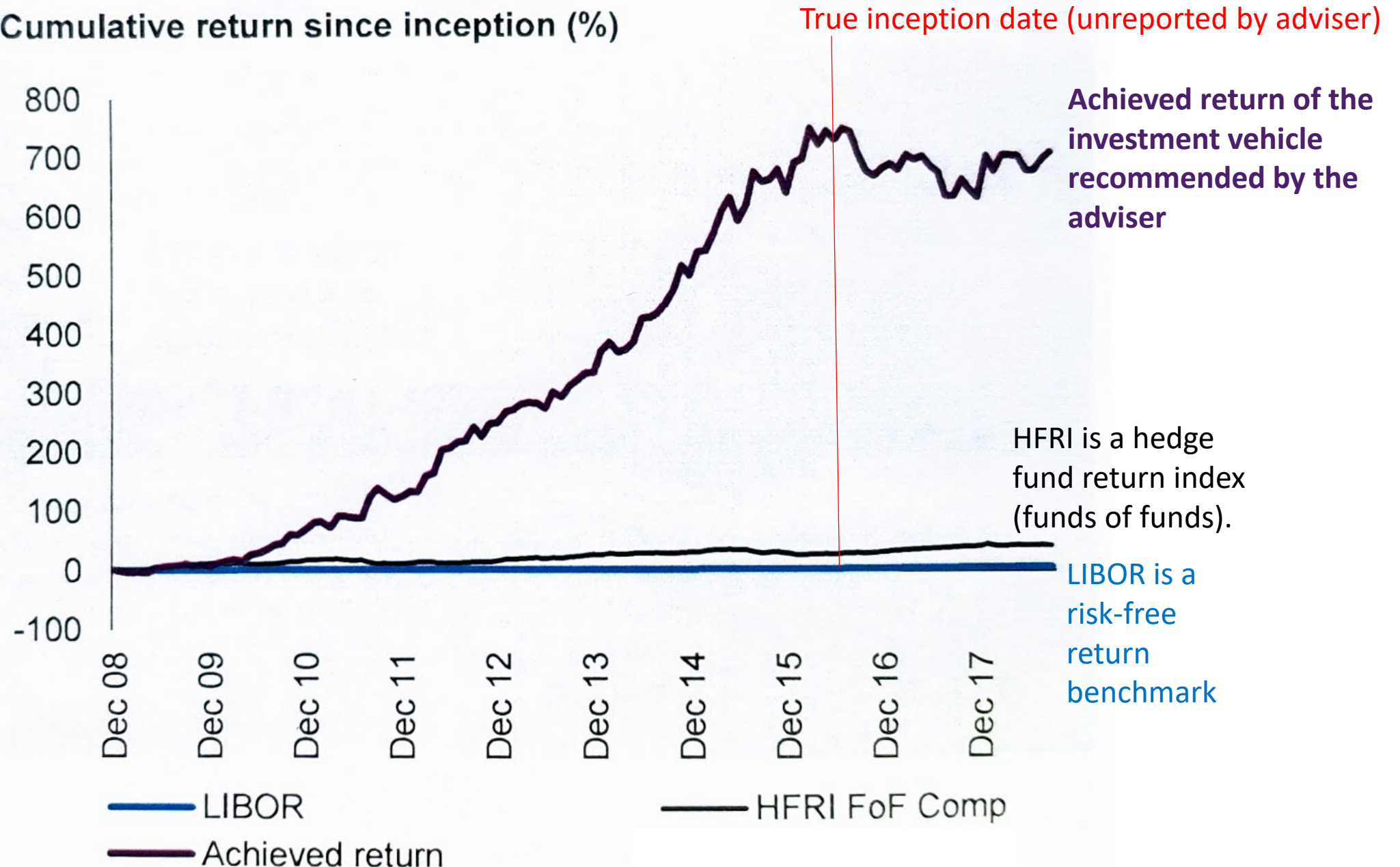
- Firms are auctioning off (i.e., selling) myriad over-priced goods and services
- Who buys them? Customers who have exaggerated views of their net value.
- An exaggerated view of net value can derive from an upwardly biased view of benefits or a downwardly biased view of costs.
- Most firms work very hard to exaggerate the benefits of their products and shroud the costs of those products.

Example 1: exaggerating the benefits

- An investment advisor that tricks you into thinking that historical returns or simulated(!) returns are a good proxy for future returns.

Performance analysis

Cumulative return since inception (%)



Example 2: shrouding the costs

- Shrouding expense ratios (for mutual funds), even for the employees of the mutual fund company offering those funds.
 - Call center (“no fee” and “we don’t have that information”)
 - Executive over dinner (“our index funds charges less than 50 basis points”)
 - Team of executives at sales meeting (“all of our rollover funds are lower cost”)
 - Team of executives at sales meeting (did not mention lower fee class)
 - Team of executives at sales meeting (falsely deny existence of soft dollar costs)

David's 30 pieces of advice: savings

1. During periods of normal employment, your **total** savings target as a percentage of your pre-tax labor income should be:
 - 2.5% on the first \$10,000 of income
 - 15% on the next \$60,000 of income
 - 20% on the next \$60,000 of income
 - 25% on all additional income
2. Bump up your savings rate (up to 10 percentage points more) when you can. By doing so, you can save less during financially challenging times.
3. If you will be supporting dependents (now or at some point in the future), think about how you'll need to adjust your savings plan to accommodate this. You'll save much less (maybe dissave) when you will be supporting dependents and you'll need to save more when you're not supporting dependents.
4. Adopt a catch-up philosophy: if you've fallen a bit behind this savings plan, no problem. It's built to handle occasional setbacks. However, if you've fallen far behind, save more than the savings rates listed above, so you partially make up for the missing savings.

Savings rate

20%

\$40,000

Dollars saved

18%

\$35,000

16%

\$30,000

14%

\$25,000

12%

\$20,000

10%

\$15,000

8%

\$10,000

6%

\$5,000

4%

2%

0%

\$-

\$-

\$20,000

\$40,000

\$60,000

\$80,000

\$100,000

\$120,000

\$140,000

\$160,000

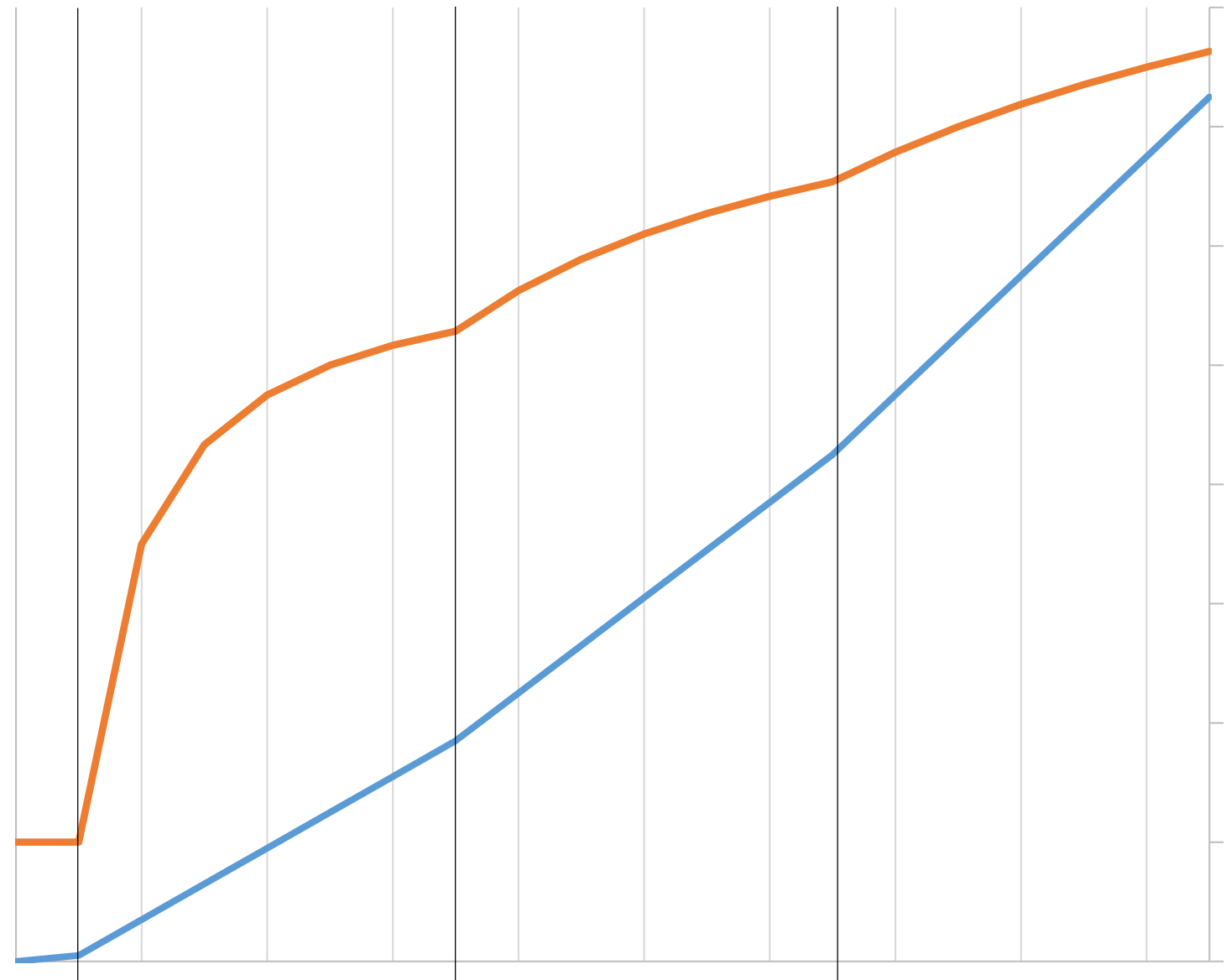
\$180,000

\$10,000

\$70,000

\$130,000

Pre-tax Labor Income



First example. You earn \$25,000 in pre-tax income.

- 2.5% on the first \$10,000 is \$250.
- 15% on the next \$15,000 is \$2,250.
- Total target savings is the sum, \$2,500, which is 10% of your income.
- Suppose your employer matches 6% of your income with a 50% match.
- You would put 6% of your income into your employer's 401(k) plan, which would be \$1,500.
- Your employer would match you with another \$750, creating \$2,250 in total.
- So you would need to put away another \$250 to achieve your goal of saving \$2,500 in total.

Suppose you earned \$75,000 in pre-tax income.

- 2.5% on the first \$10,000 is \$250.
 - 15% on the next \$60,000 is \$9,000.
 - 20% on the next \$5,000 is \$1,000.
 - Total target savings is the sum, \$10,250, which is 13.7% of your income.
-
- Suppose your employer matches 6% of your income with a 50% match.
 - You would put 6% of your income into your employer's 401(k) plan, which would be \$4,500.
 - Your employer would match you with another \$2,250, creating \$6,750 in total.
 - So you would need to put away another \$3,500 to achieve your goal of saving \$10,250.

David's 30 pieces of advice: savings continued

5. Prioritize saving categories (the **green** categories are tied and should be done simultaneously):
 - i. If you have a mortgage, and you aren't under water, pay it (counting principle repayments, but *not* interest, as savings)
 - ii. Take full advantage of the savers credit (if you are [eligible](#))
 - iii. Take full advantage of your employer's retirement savings match (if you are lucky enough to have one; matching contributions count toward your total savings rate target)
 - iv. Create a rainy day fund that is equal to 1/3 of your normal annual labor income (and hold this in a money market)
 - v. Build up a down-payment for buying a house (20% of the home value -- hold this in a money market until deployed)
 - vi. Save in a 401(k), 403(b), IRA, or some other defined contribution retirement account
 - vii. If you save any money in a Roth account, multiply these saved dollars by 1.5 for the purposes of calculating your total savings rate

David's 30 pieces of advice: investing.

6. Invest retirement savings in a *passive target date fund* – sometimes called a lifecycle fund. It should have an expense ratio of less than 20 basis points and no loads. (Don't try to time/play the market.)
7. Invest other savings in a *money market fund* that has an expense ratio of less than 20 basis points.
8. If you work with a financial planner, make certain that they are a fiduciary. Find out what fees they are charging you. (But keep in mind, that you likely don't need a financial planner, if you follow the free advice listed here.)
9. Past returns have almost no predictive power for future returns and in many cases are *negative* predictors of future returns.

David's 30 pieces of advice: debt.

10. Buy a home with a 20% down-payment (wait to do this until you live in a place where you expect to stay for at least 7 years).
11. If interest rates fall by 2 percentage points or more from your mortgage origination rate, refinance your mortgage. In general, avoid cash-outs.
For an exact formula for optimal mortgage refinancing, see Agarwal, S., Driscoll, J. C., & Laibson, D. I. 2013. Optimal Mortgage Refinancing: A Closed-Form Solution. *Journal of Money, Credit and Banking*, 45(4), 591-622.
12. When you buy a car, use up half of your rainy day fund, and then borrow the rest of the money you need with an auto-loan.
13. Use a credit card that gives you at least 1% cash back (preferably 2%), or an equivalent value in points or miles.
14. Try to avoid credit card *debt*. Almost never use payday loans. (Your rainy day fund – above – will enable you to mostly avoid credit card and payday debt.)

David's 30 pieces of advice: misc

15. Buy life insurance, health insurance, automobile insurance, home-owner's insurance and disability insurance (the last one is typically purchased from your employer as a group plan). Don't buy other insurance, especially not extended warranties.
16. Ask for discounts. Ask for their best price. Ask if anyone else is paying a price lower than the price you are paying.
17. Shop around. Weaponize competition to your advantage and to the disadvantage of the firms selling you stuff.
18. Obtain commission discounts when you work with real estate brokers. If they won't give you a discount, find another real estate broker. (If they tell you discounts are illegal, look up the law.)
19. Before you have kids (if you are going to have kids), create an estate plan including, durable power of attorney, will, living will, healthy care proxy.

David's 30 pieces of advice: behavioral

20. Financial things will go worse than you think (on average).
21. There are known unknowns and unknown unknowns. Think more about both of these categories. Discuss with friends, family, trusted advisors, etc...
22. Your financial services provider knows the mistakes you are making and is probably going to exploit them.
23. You will underperform relative to your own good intentions (e.g., procrastinate signing up for your employer's 401(k) plan). Commit your actions ahead of time to overcome this propensity.
24. The only way to be good at something is either to be highly experienced, or to have someone with lots of experience helping you (with aligned interests).
25. Look for providers with a long and strong reputation for acting in the interests of their customers.
26. Try to keep the big picture in mind to avoid worrying about small loses (and thereby letting loss aversion rule/ruin your life).

David's 30 pieces of advice: retirement

27. Remember that long-term care is expensive and is not covered by Medicare. Keep savings set aside for this expense (ballpark cost is \$100,000 per year per person). If you run out of money, Medicaid will cover a far less comfortable version of long term care.
28. When you retire, withdraw your (annual) required minimum distribution (RMD) from your retirement savings plan and consume the (after-tax) value of those withdrawals along with your other annuity payments (e.g., Social Security).

David's 30 pieces of advice: meta-advice.

- 29. The financial world is constantly changing. You'll need to continuously update your financial strategy as new products, regulations, and challenges emerge. I'll try to keep my own website updated with a new version of this advice (each year).
- 30. Be skeptical of anyone offering financial advice. Hmmm.

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