

Mental Models

Simple frameworks for understanding complex realities.

A mental model is an idea that agrees with reality: an explanation of how something works. Paradigm, framework, heuristic, rule of thumb, wisdom, all the same family. Supply and demand explains an economy. Entropy explains decay. Game theory explains trust. Learning a new model gives you a new way to see, which is the entire point.

Richard Feynman was told by a high school teacher that he talked too much because he was bored, handed a book on advanced calculus, and sent to the back of the room until he had finished it. The book taught him a technique universities were not teaching. Years later at Princeton, the integrals nobody else could solve came to him. In his own account: my box of tools was different from everybody else's, and they had tried all their tools before giving the problem to me. He was surrounded by brilliant people. What set him apart was the size of the toolbox.

80 or 90 important models will carry about 90 percent of the freight in making you a wise person. (Charlie Munger)

Munger's word for the goal is a latticework: models from many disciplines, not one or two, so that a problem meets more than one lens. All models are wrong, and some are useful. The best are simply the ones with the most utility in an ordinary week. Eight I keep returning to.

1. The 80/20 principle

- A small share of inputs produces most of the output. Pareto noticed in 1906 that a fifth of Italians owned four fifths of the land, then found the same lopsidedness in the pea plants in his garden.
- It is counterintuitive because we assume causes carry roughly equal weight, so we treat them equally. When you learn the real ratio it is usually more imbalanced than you guessed.
- The numbers vary. Sometimes 95/5, sometimes 70/30. The principle is that inputs are not equal, and it is worth knowing which ones are the vital few.
- Questions worth asking. Which fifth of my work produces most of my results? Which fifth of the people I see produce most of my fulfillment, and which most of my stress? Which fifth of my habits carries most of my health? Which apps produce most of my distraction?
- A worked example. Among 122,000 adults given a treadmill test and followed for about eight years, low aerobic fitness carried a higher risk of death than smoking, diabetes, or coronary artery disease. (Mandsager and colleagues, *JAMA*, 2018.) If you were allocating effort across health behaviors, that is the vital few announcing itself.

2. Compounding

- Small actions repeated produce results out of proportion to any one of them.
- It runs on money in both directions, savings and debt, which is the version everyone already knows.
- It runs on health in both directions. A small daily surplus and a small daily deficit look identical on any given day and nothing like each other after ten years.
- It runs on learning. A modest daily habit of reading, listening, or study builds a body of knowledge that no single session accounts for.
- The trap is the sentence one day will not make a difference. True about any particular day, and ruinous as a policy. Every day counts if you want compounding returns.

3. The Eisenhower matrix

- Sort by two questions, important and urgent, then act on the sort. Important and urgent: do it. Important and not urgent: decide, which means put it on the calendar. Urgent and not important: delegate it. Neither: delete it.
- The quadrant that decides a life is important and not urgent, because nothing outside you will ever force it. Exercise, study, and the people you love all live there.
- Run a real day through it. A lesson to prepare, a child's school event, the groceries, the inbox, the car in the shop, the feed, a neighbor to visit, exercise, personal study.

4. Inversion

- Instead of asking how to make this succeed, ask how it fails.

- The premortem: assume the plan has already failed, then list the reasons. People will say things in that frame they will not say in a planning meeting, because it is no longer disloyal to say them.
- Rank each failure by how likely and how damaging, then design against the top corner.
- Avoiding a few large mistakes does more than optimizing many small things.

5. Ockham's razor

- Given competing explanations, start with the one that needs the fewest assumptions.
- Simple does not mean small or easy. It means fewer assumptions and fewer contortions required to make everything fit.
- Muddy footprints in the kitchen. Either someone entered the house overnight, walked around, took nothing, and left no other trace, or somebody who lives there stepped in mud.
- A child is suddenly irritable and struggling at school. The complex reading is a deep psychological problem, bullying, or a hidden addiction. The simple reading is a normal stretch of adolescence, short sleep, a friendship gone wrong, or a change in routine. Start there. Do not complicate things until you have to.

6. Hanlon's razor

- Never attribute to malice what is adequately explained by error.
- The email that goes unanswered for a week is far more often a full inbox than a message about you.
- Most harm comes from ignorance, haste, or accident rather than intent. Assuming malice when error explains the behavior destroys trust you did not have to lose, and it closes the door on repair.
- The everyday name for this is the benefit of the doubt, and it is mostly a kindness that also happens to be accurate.

7. The law of the harvest

- Inputs determine outputs, and the sequence cannot be skipped.
- No farmer takes shortcuts, because nature does not accept them. Clear, till, plant, fertilize, weed, water through the hot months, wait, and only then harvest, which is itself more work. Tell a farmer he can skip the watering and see what happens to the conversation.
- Most of us learned our work habits in school instead, and school rewards cramming. Cramming is an attempt to harvest without planting.
- The student who compresses a semester into three days may pass the exam. He does not know the material, and the next course collects the debt.
- There are no shortcuts around cause and effect. Which means the useful place to put your attention is the inputs, not the outcome.

8. Incremental progress

- Start where you are, do what you can, repeat.
- We romanticize breakthroughs and undervalue steady accumulation. Expecting a revelation makes ordinary progress feel like failure, and that feeling is when people quit.
- Joan MacDonald began strength training in her early seventies, out of shape and intimidated by the gym, and rebuilt her health over several years by adding small increments.
- You cannot steer a parked car.

TRY THIS

- Pick one area and find the vital few, then move time, money, or attention toward it.
- Start the smallest version of one compounding habit today rather than the full version next week.
- Run your next plan through a premortem before you commit to it.
- The next time someone does not reply, write down the error explanation before the malice one.
- Name one thing you are trying to harvest without having planted.

The latticework is the real idea here. One model applied everywhere becomes another way to be wrong with confidence.

Resources

The eight, in one line each

- **80/20 principle.** Find the vital few.
- **Compounding.** Tiny actions, remarkable results.
- **Eisenhower matrix.** Protect what is important and not urgent.
- **Inversion.** Ask how this fails.
- **Ockham's razor.** Do not overcomplicate until you have to.
- **Hanlon's razor.** Do not assume malice.
- **Law of the harvest.** There are no shortcuts.
- **Incremental progress.** Start where you are, do what you can.

Questions that put a model to work

- What is the vital few here?
- What does this look like in ten years at this rate?
- Is this important, or only urgent?
- How would this fail?
- What is the simplest explanation?
- Could this be a mistake rather than an insult?
- What input am I skipping?
- What is the smallest next step?

Referenced in this session

- Vilfredo Pareto, 1906. Land ownership, and the pea plants.
- Mandsager and colleagues, *JAMA*, 2018. Cardiorespiratory fitness and long-term mortality in 122,000 adults.
- William of Ockham, fourteenth century. Entities should not be needlessly multiplied.
- Hanlon's razor, first printed in *Murphy's Law Book Two*, 1980.
- Charlie Munger, on the latticework of models.
- Richard Feynman, on having a different box of tools.
- Joan MacDonald, who started in her seventies.

Reading

- *The Great Mental Models*, Shane Parrish. The reference shelf for this whole subject.
- *Principles*, Ray Dalio. One person's models, written down and tested over a career.
- *Mental Models*, Peter Hollins. A shorter survey if the Parrish volumes are too much at once.

Theme: thinking well. From my course *Think Better*. The companion sessions are on discernment, mind traps, and mindset.