

- Decision making is hard. So what do we do? We follow our intuition without having a process to support it.

- The definition of a good decision is when we use a good process on a consistent basis to make decisions. While a good process does not guarantee a good outcome, it sure does improve your chances!

- “Formal education will make you a living. Self-education will make you a fortune.” — Jim Rohn

- a decision journal has helped me change the way I make decisions. It has provided me with a feedback loop, and a mechanism to switch from unconscious to conscious, which is one of the most valuable things you can have.

- When I first started to use a decision journal, it was clear to me that I had optimism bias. This means I was focusing on the possible positive outcomes while not anticipating and preparing for potential negative ones.

- Kahneman told him that decision journals are the best way to test the quality of your decisions. “Go down to a local drugstore and buy a very cheap notebook.” Kahneman told him. Mauboussin explains: “Whenever you’re making a consequential decision . . . just take a moment to think, write down what you expect to happen, why you expect it to happen and then actually, and this is optional, but probably a great idea, is write down how you feel about the situation, both physically and even emotionally. Just, how do you feel?”

- Then use the Decision Journal Template found in Appendix B whenever you’re making a decision, either individually or as part of a group.

- Remember it’s not just about outcomes. Maybe you made the right decision (which, in our sense, means used a good process) and still had a bad outcome. That’s called a bad break.

- “The general who wins a battle makes many calculations in his temple before the battle is fought.” — Sun Tzu

- While extreme, that is the best risk-management rule ever. If you have the upside, you have to keep the downside. The Romans had a similar system: The guy who created an arch stood under it as the scaffolding was removed.

- Have you ever heard the story of Buridan’s ass? It’s the story of a donkey that is equally hungry and thirsty and is placed precisely midway between a stack of hay and a pail of water. Since the paradox assumes the ass will always go to whichever is closer, it dies of both hunger and thirst, since it cannot make any decision between the hay and water.

- We live in a world of hype, and it’s all too easy to overemphasize the importance of anything: a date, an investment, or a business decision. Very rarely must we make a single make-or-break decision, and if we do find ourselves there, chances are we’ve made many mistakes along the way.

- Things like the main laws of physics (theory of relativity, law of universal gravitation, three laws of motion, etc.). The big, useful tools of mathematics (permutations and combinations,

randomness, algebraic equivalence, etc.). The guiding principles of biology (incentives, cooperation, evolution by natural selection, etc.). The hugely useful concepts from human psychology (trust, bias from incentives, denial, etc.). The central principles of systems thinking (scale, law of diminishing returns, Pareto principle, etc.). The working concepts behind business and markets (opportunity costs, creative destruction, comparative advantage, etc.). These are the winning ideas. There's a lot of "bestselling" stuff out there, but there's always a more fundamental, underlying idea that we already knew about. The "new idea" is only a retelling and packaging of old ideas.

- Take a look at the list of mental models in the appendix of this book. Pick out three models you would like to understand better. I suggest Second-Order Thinking, Inversion, and The Map is Not the Territory. Commit to working on learning more about these mental models and incorporating them into your decision making. Each week, pick three more models you want to learn more about.

- What is a circle of competence? Well, it's pretty much what it sounds like. It's the ability to know the limits of your understanding. You can think of this as a calibration of yourself. Accurately gauging your skills is more important than the size of those skills. After all, it's not how big your circle is, but how you use it.

- "You have to figure out what your own aptitudes are. If you play games where other people have the aptitudes and you don't, you're going to lose. And that's as close to certain as any prediction that you can make. You have to figure out where you've got an edge. And you've got to play within your own circle of competence. "If you want to be the best tennis player in the world, you may start out trying and soon find out that it's hopeless—that other people blow right by you. However, if you want to become the best plumbing contractor in Bemidji, that is probably doable by two-thirds of you. It takes a will. It takes the intelligence. But after a while, you'd gradually know all about the plumbing business in Bemidji and master the art. That is an attainable objective, given enough discipline. And people who could never win a chess tournament or stand in center court in a respectable tennis tournament can rise quite high in life by slowly developing a circle of competence—which results partly from what they were born with and partly from what they slowly develop through work."

- As Charlie Munger says, "It's not a competency if you don't know the edge of it."

- How to make decisions outside your circle of competence

- "A man will be imprisoned in a room with a door that's unlocked and opens inwards; as long as it does not occur to him to pull rather than push." — Ludwig Wittgenstein

- Dan Lovallo, a professor at the University of Sydney, and Olivier Sibony, a director at McKinsey & Company, studied 1,048 major business decisions over five years. They wanted to find out how organizations made decisions. The results were surprising. They discovered that most business decisions were not made on "gut calls," but rather rigorous analysis.

- Lovallo and Sibony concluded, "Our research indicates that, contrary to what one might assume, good analysis in the hands of managers who have good judgment won't naturally

yield good decisions.” Of course, Lovallo and Sibony didn’t only look at analysis; they also asked executives about the process. Did these executives, for example, “explicitly explore and discuss major uncertainties or discuss viewpoints that contradicted the senior leader’s?” So what matters more? Process or analysis? After comparing the results, they determined that “process mattered more than analysis—by a factor of six.”

- Process #1 Problem: It takes too long to make a decision, and you are overwhelmed Solution: The Simple Checklist

- Here’s his seven-step checklist: “Write down five pre-existing company goals or priorities that will be impacted by the decision. Focusing on what is important will help you avoid the rationalization trap of making up reasons for your choices after the fact.” “Write down at least three, but ideally four or more, realistic alternatives. One can be staying put and doing nothing. It might take a little effort and creativity, but no other practice improves decisions more than expanding your choices.” “Write down the most important information you are missing. We risk ignoring what we don’t know because we are distracted by what we do know, especially in today’s information-rich businesses.” “Write down the impact your decision will have one year in the future. Telling a brief story of the expected outcome of the decision will help you identify similar scenarios that can provide useful perspective.” “Involve a team of at least two but no more than six stakeholders. Getting more perspectives reduces your bias and increases buy-in—but bigger groups have diminishing returns.” “Write down what was decided, as well as why and how much the team supports the decision. Writing these things down increases commitment and establishes a basis to measure the results of the decision.” “Schedule a decision follow-up in one to two months. We often forget to check in when decisions are going poorly, missing the opportunity to make corrections and learn from what’s happened.”

- Process #2: Problem: You struggle with biases that affect your decisions Solution: The Heaths’ WRAP Model to Minimize Biases

- In their book *Decisive*, the Heaths came up with a process to help us overcome these biases and make better choices. They call this the WRAP model. They write, “We can’t deactivate our biases, but . . . we can counteract them with the right discipline.” Here’s the process they recommend: Widen your options: You encounter a choice. But narrow framing makes you miss options. How can you expand your set of choices? Reality-test your assumptions: You analyze your options. But the confirmation bias leads you to gather self-serving information. So how can you get outside your head and collect information you can trust? Attain distance before deciding: You make a choice. But short-term emotion will often tempt you to make the wrong one . . . So how can you overcome short-term emotion and conflicted feelings to make the best choice? Prepare to be wrong: You’ll often be overconfident about how the future will unfold. So prepare to be wrong. How can you plan for an uncertain future so that you give your decisions the best chance to succeed?

- Process #3: Problem: You have “analysis paralysis” and are overwhelmed by a decision Solution: The PROACT Process

- They write: “We have found that even the most complex decision can be analysed and resolved by considering a set of eight elements. The first five—Problem, Objectives, Alternatives, Consequences, and Tradeoffs—constitute the core of our approach and are applicable to virtually any decision. The acronym for these—PrOACT—serves as a reminder that the best approach to decision situations is a proactive one. The three remaining elements—uncertainty, risk tolerance, and linked decisions—help clarify decisions in volatile or evolving environments.”

- Process #4: Problem: You want to improve your judgment in decision making Solution: Max Bazerman’s Six Steps to Rational Decision Making

- The most important thing is to just start using one. Pick the process that seems to resonate the most with you, and start there. Once you have a process, remember that it’s not static. It’s dynamic, and should adapt to you. You need to iterate and improve on it.

- good decisions (that is, exercising good judgment and using a good decision-making process) don’t always have a good outcome, just as bad decisions (using no process, or a bad process) don’t always have bad outcomes.

- decisions, we need to focus on what’s the same, not what’s different. “This time is different” are the four most dangerous words when it comes to making better decisions. As we evaluate our past decisions to inform our future decisions, we need to ask ourselves instead, “What’s the same?” We tend to think that differences are more valuable than similarities.

- If you catch yourself reasoning based on “this time is different,” remember that you are probably speculating. While you may indeed be right, odds are this time is not different. So spend some time looking for the similarities. “History doesn’t repeat itself, but it often rhymes,” as Mark Twain is reputed to have said.

- Annie Duke, who has a PhD in psychology and is a professional poker player and author, talks about the mistakes we make when evaluating our decisions: “There’s this word that we use in poker: ‘resulting.’ It’s a really important word. You can think about it as creating too tight a relationship between the quality of the outcome and the quality of the decision. You can’t use outcome quality as a perfect signal of decision quality, not with a small sample size anyway. I mean, certainly, if someone has gotten in 15 car accidents in the last year, I can certainly work backward from the outcome quality to their decision quality. But one accident doesn’t tell me much.”

- Conduct a premortem In Bob Sutton’s book *Scaling Up Excellence: Getting to More Without Settling for Less*, he talks about “a mind trick that goads and guides people to act on what they know and, in turn, amplifies their odds of success.” It’s called the premortem. When you’re on the verge of making a big decision, you call a meeting. At the meeting, you ask each member of your team to imagine that it’s a year later. You imagine that a concrete success or failure has occurred, then look “back from the future” to tell a story about the causes. In Sutton’s book, he writes about renowned scholars, including Kahneman and psychologists Gary Klein and Karl Weick, who supply compelling logic and evidence that this approach generates better decisions, predictions, and plans.

- “We say we waste time, but that is impossible. We waste ourselves.” — Alice Bloch
- The secret to good decision making is avoiding bad decisions.
- In a talk to the plebe class at West Point, William Deresiewicz offered some insight into how we sabotage ourselves by not understanding time (bolded emphases are mine):
 - They found that in every case the high multitaskers scored worse. They were worse at distinguishing between relevant and irrelevant information and ignoring the latter. In other words, they were more distractible. They were worse at what you might call ‘mental filing’: keeping information in the right conceptual boxes and being able to retrieve it quickly. In other words, their minds were more disorganized. And they were even worse at the very thing that defines multitasking itself: switching between tasks.
 - “Multitasking, in short, is not only not thinking, it impairs your ability to think. Thinking means concentrating on one thing long enough to develop an idea about it. Not learning other people’s ideas, or memorizing a body of information, however much those may sometimes be useful. Developing your own ideas. In short, thinking for yourself. You simply cannot do that in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.
 - We can extract two valuable lessons from Deresiewicz’s comments. First, you want to focus on one thing at a time. Second, you want to make time to think. Not thirty seconds here or there, but a lot of time. You need to have time to concentrate.
 - In your decision journal, reflect on how you currently feel about your decision-making skills and process. Why do you feel you need to improve your decision making?
 - Write about one decision where you didn’t take responsibility. What happened? What was your role? Why didn’t you take responsibility? What would you do differently now? Write about one decision where your indecisiveness cost you or your company. What happened? Why were you indecisive? What would you do differently?
 - List three decisions you made in the past that did not have good outcomes. For each of these decisions, what barriers listed above affected your decision making?
 - Pick out three models you would like to understand better. I suggest Second-Order Thinking, Inversion, and The Map is Not the Territory.
 - If you’re not in your circle of competence, find someone with more knowledge than you on the subject. Don’t ask them what to do; instead, ask them what variables matter, and why. Seek to understand how the variables interact. You’ll start developing your circle, and will make a better decision than you would have alone.
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- To develop your circle of competence, identify the people closest to you, along with their circle of competence. What are they good at that you don't know very well? Make a point of inviting them to lunch, with the goal of picking their brain on a subject that interests them.

- Feel free to try more than one process, to find what works best for you. You can always mix and match. Journal about which process may be helpful in various situations. The point is that having a process that's reasonably consistent, and that you journal with, allows you to pick out blind spots and adapt the process accordingly. You can't adapt without feedback. And you can't get consistent feedback without using a consistent process.

- In your decision journal, answer these questions: What decision have you made recently that had a good process but a bad outcome? What decision have you made recently that had a bad process but a good outcome? In the past, have you blamed other people for bad outcomes, or have you blamed the process? Think of a decision you need to make in the near future. Use the premortem steps to think through the possible outcomes and gain "prospective hindsight."

- Appendix C: Mental Models

- Even before there were direct incentives to innovate, humans innovated out of curiosity.

- "In the thick of battle, you will not rise to the level of your expectations, but fall to the level of your training."

- Any system ignorant of envy effects will tend to self-immolate over time.

- we are consequently surprised when others do not act in accordance with the "innate" traits we've endowed them with.

- We might term this Boredom Syndrome: Most humans have the tendency to need to act, even when their actions are not needed. We also tend to offer solutions even when we do not have enough knowledge to solve the problem.

- As with a clogged artery or a blocked drain, a bottleneck in production of any good or service can be small but have a disproportionate impact if it is in the critical path.

- Comparative advantage is best seen as an applied opportunity cost: If it has the opportunity to trade, an entity gives up free gains in productivity by not focusing on what it does best.

- Though the prisoner's dilemma theoretically leads to a poor result, in the real world, cooperation is nearly always possible and must be explored.

- The Map/Territory model illustrates the problem with not seeing the front, as does the incentive model. Leaders of any organization can generally benefit from seeing the front, as not only does it provide firsthand information, but it also tends to improve the quality of secondhand information.

- In practical life, opening a two-front war can often be a useful tactic, as can solving a two-front war or avoiding one, as in the example of an organization tamping down internal discord to focus on its competitors.

- Much of the human social world is said to be fat-tailed rather than normally distributed.
- For example, if I know that the average man is 5 feet 10 inches tall, I am far more likely to get an average of 5'10" by selecting 500 men at random than 5 men at random. The opposite of this model is the law of small numbers, which states that small samples can and should be looked at with great skepticism.
- One of the most common processes that does not fit the normal distribution is that of a power law, whereby one quantity varies with another's exponent rather than linearly.
- Relativity has been used in several contexts in the world of physics, but the important aspect to study is the idea that an observer cannot truly understand a system of which he himself is a part.
- Velocity is speed plus vector: how fast something gets somewhere.
- algorithm is generally an automated set of rules or a "blueprint" leading a series of steps or actions resulting in a desired outcome, and often stated in the form of a series of "If → Then"
- Thanksgiving is a Black Swan for the turkey, not the butcher) and thus must be dealt with by addressing the fragility-robustness-antifragility spectrum rather than through better methods of prediction.
- In a world such as ours, governed by chaos dynamics, small changes (perturbations) in initial conditions have massive downstream effects as near-infinite feedback loops occur; this phenomenon is also called the butterfly effect.
- Gresham's Law, named for the financier Thomas Gresham, states that in a system of circulating currency, forged currency will tend to drive out real currency, as real currency is hoarded and forged currency is spent. We see a similar result in human systems, as with bad behavior driving out good behavior in a crumbling
- Lindy Effect refers to the life expectancy of a non-perishable object or idea being related to its current lifespan.
- A preferential attachment situation occurs when the current leader is given more of the reward than the laggards, thereby tending to preserve or enhance the status of the leader.
- In many systems, improvement is at best, or at times only, a result of removing bad elements rather than of adding good elements. This is a credo built into the modern medical profession: First, do no harm. Similarly, if one has a group of children behaving badly, removal of the instigator is often much more effective than any form of punishment meted out to the whole group.
- I also owe a huge debt of gratitude to a handful of people I've never met, but consider old friends: Charlie Munger, Shane Parrish from Farnam Street, James Clear, Ryan Holiday, Maria Popova from Brain Pickings, Daniel Kahneman, Dan Ariely, Nassim Taleb, Cheryl Strayed, Brene Brown, Richard Feynman, and Marcus Aurelius.