Fooled By Randomness

Postscript

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THREE AFTERTHOUGHTS IN THE SHOWER

Owing to the subject's tentacles and its author's ruminating nature, this book keeps growing like a living object. I will add in this section a few post-thoughts I've had in the shower and in the few boring philosophy lectures I've attended (without wanting to offend my new colleagues in the thinking business, I discovered that listening to a speaker reciting verbatim his lecture notes makes me invariably daydream).

FIRST THOUGHT:

THE INVERSE SKILLS PROBLEM

The higher up the corporate ladder, the higher the compensation to the individual. This might be justified, as it makes plenty of sense to pay individuals according to their contributions. However, and in general (provided we exclude risk-bearing entrepreneurs), the higher up the corporate ladder, the lower the evidence of such contribution. I call this the inverse rule.

I will be deriving the point by mere logical arguments. Chapter 2 made the distinction between those skills that are visible (like the abilities of a dentist) and those that present more difficulty in nailing down, especially when the subject belongs to a randomness-laden profession (say, one that includes the occasional practice of Russian roulette). The degree of randomness in such an activity and our ability to isolate the contribution of the individual determine the visibility of the skills content. Accordingly, the cook at the company headquarters or the factory worker will exhibit their direct abilities with minimal uncertainty. These contributions may be modest but they are clearly definable. A patently incompetent professional cook who cannot distinguish salt from sugar or who tends to systematically overcook the meat would be easily caught, provided the diners have functioning taste buds. And if he gets it right by luck once, it also will be hard for him to get it right by sheer chance a second, third, and a thousandth time.

Repetitiveness is key for the revelation of skills because of what I called ergodicity in Chapter 8—the detection of long-term properties, particularly when these exist. If you bang one million dollars at your next visit to Las Vegas at the roulette table in one single shot, you will not be able to ascertain from this single outcome whether the house has the advantage or if you were particularly out of the gods' favor. If you slice your gamble into a series of one million bets of one dollar each, the amount you recover will systematically show the casino's advantage. This is the core of sampling theory, traditionally called the law of large numbers.

To view it in another way, consider the difference between judging on process and judging on results. Lower-ranking persons in the enterprise are judged on both process and results—in fact, owing to the repetitive aspect of their efforts, their process converges rapidly to results. But top management is only paid on result—no matter the process. There seems to be no such thing as a foolish decision if it results in profits. "Money talks," we are often told. The rest is supposed to be philosophy.

Now take a peek inside the chief executive suite. Clearly, the decisions there are not repeatable. CEOs take a small number of large decisions, more like the person walking into the casino with a single million-dollar bet. External factors, such as the environment, play a considerably larger role than with the cook. The link between the skill of the CEO and the results of the company are tenuous. By some

argument, the boss of the company may be unskilled labor but one who presents the necessary attributes of charisma and the package that makes for good MBA talk. In other words, he may be subjected to the monkey-on-the-typewriter problem. There are so many companies doing all kinds of things that some of them are bound to make “the right decision.”

It is a very old problem. It is just that, with the acceleration of the power law–style winner-takes-all effects in our environment, such differences in outcomes are more accentuated, more visible, and more offensive to people’s sense of fairness. In the old days, the CEO was getting ten to twenty times what the janitor earned. Today, he can get several thousand times that.

I am excluding entrepreneurs from this discussion for the obvious reason: These are people who stuck their necks out for some idea, and risked belonging to the vast cemetery of those who did not make it. But CEOs are not entrepreneurs. As a matter a fact, they are often empty suits. In the “quant” world, the designation empty suit applies to the category of persons who are good at looking the part but nothing more. More appropriately, what they have is skill in getting promoted within a company rather than pure skills in making optimal decisions—we call that “corporate political skill.” These are people mostly trained at using PowerPoint presentations.

There is an asymmetry, as these executives have almost nothing to lose. Assume that two equally charismatic, empty-suit-style twin brothers manage to climb the corporate ladder to get two different jobs in two different corporations. Assume that they own good-looking suits, that they have MBAs, and that they are tall (the only truly visible predictor of corporate success is to be taller than average). They flip coins in secret and randomly take completely opposite actions, leading to great failure for one and great success for the other. We end up with a mildly wealthy, but fired, executive and his extremely wealthy, and still operating, twin brother. The shareholder bore the risk; the executives got the reward.

The problem is as old as leadership. Our attribution of heroism to those who took crazy decisions but were lucky enough to win shows the aberration—we continue to worship those who won battles and despise those who lost, no matter the reason. I wonder how many historians use luck in their interpretation of success—or how many are conscious of the difference between process and result.

I insist that it is not society’s problem but that of the investors. If shareholders are foolish enough to pay someone $200 million to just wear a good-looking suit and ring a bell, as they did with the New York Stock Exchange’s Richard Grasso in 2003, it is their own money they part with, not yours and mine. It is a corporate governance issue.

The situation is not much better in a bureaucratic economy. Outside the capitalistic system, presumed talent flows to the governmental positions, where the currency is prestige, power, and social rank. There, too, it is distributed disproportionately. The contributions of civil servants might be even more difficult to judge than those of the executives of a corporation—and the scrutiny is smaller. The central banker lowers interest rates, a recovery ensues, but we do not know whether he caused it or if he slowed it down. We can’t even know that he didn’t destabilize the economy by increasing the risk of future inflation. He can always fit a theoretical explanation, but economics is a narrative discipline, and explanations are easy to fit retrospectively.

The problem may not be incurable. It is just that we need to drill into the heads of those who measure the contribution of executives that what they see is not necessarily what is there. Shareholders, in the end, are the ones who are fooled by randomness.

SECOND THOUGHT: ON SOME ADDITIONAL BENEFITS OF RANDOMNESS

Uncertainty and Happiness

Have you ever had a weeknight dinner in New York City with a suburban commuter? Odds are that the shadow of the schedule will be imprinted in his consciousness. He will be tightly aware of the clock, pacing his meal in such a way that he does not miss the 7:08 because after that one, there are no more express trains and he would be reduced to taking the 7:42 local, something that appears to be very undesirable. He will cut the conversation short around 6:58, offer a quick handshake, then zoom out of the restaurant to catch his train with maximal efficiency. You will also be stuck with the bill. Since the meal is not finished, and the bill is not ready, your manners will force you to tell him that it's on you. You will also finish the cup of decaffeinated skim cappuccino all alone while staring at his empty seat and wondering why people get trapped by choice into such a life.

Now deprive him of his schedule—or randomize the time of departures of the trains so they no longer obey a fixed and known timetable. Given that what is random and what you do not know are functionally the same, you do not have to ask the New York area Metropolitan Transit Authority to randomize their trains for the purpose of the experiment: Just assume that he is deprived of knowledge of the various departure times. All he would know is that they operate about every, say, thirty-five minutes. What would he do under such a scenario? Although you might still end up paying for dinner, he would let the meal follow its natural course, then leisurely walk to the nearby station, where he would have to wait for the next train to show up. The time difference between the two situations will be a little more than a quarter of an hour. Another way to see the contrast between a known and an unknown schedule is to compare his condition to that of another diner who has to use the subway to go home, for an equivalent distance, but without a known and fixed schedule. Subway riders are freer of their schedule, and not just because of the higher frequency of trains. Uncertainty protects them from themselves.

Chapter 10 showed, with the illustration of Buridan's donkey, that randomness is not always unwelcome. This discussion aims to show how some degree of unpredictability (or lack of knowledge) can be beneficial to our defective species. A slightly random schedule prevents us from optimizing and being exceedingly efficient, particularly in the wrong things. This little bit of uncertainty might make the diner relax and forget the time pressures. He would be forced to act as a satisficer instead of a maximizer (Chapter 11 discussed Simon's satisficing as a blend of satisfying and maximizing)—research on happiness shows that those who live under a self-imposed pressure to be optimal in their enjoyment of things suffer a measure of distress.

The difference between satisficers and optimizers raises a few questions. We know that people of a happy disposition tend to be of the satisficing kind, with a set idea of what they want in life and an ability to stop upon gaining satisfaction. Their goals and desires do not move along with the experiences. They do not tend to experience the internal treadmill effects of constantly trying to improve on their consumption of goods by seeking higher and higher levels of sophistication. In other words, they are neither avaricious nor insatiable. An optimizer, by comparison, is the kind of person who will uproot himself and change his official residence just to reduce his tax bill by a few percentage points. (You would think that the entire point of a higher income is to be free to choose where to live; in fact it seems, for these people, wealth causes them to increase their dependence!) Getting rich results in his seeing flaws in the goods and services he buys. The coffee is not warm enough. The cook no longer deserves the three stars given to him by the Michelin guide (he will write to the editors).The table is too far from the window. People who get promoted to important positions usually suffer from tightness of schedules: Everything has an allotted time. When they travel, everything is "organized" with optimizing intent, including lunch at 12:45 with the president of the company (a table not too far from the window), the Stairmaster at 4:40, and opera at 8:00.

Causality is not clear: The question remains whether optimizers are unhappy because they are constantly seeking a better deal or if unhappy people tend to optimize out of their misery. In any case,

randomness seems to operate either as a cure or as Novocain!

I am convinced that we are not made for clear-cut, well-delineated schedules. We are made to live like firemen, with downtime for lounging and meditating between calls, under the protection of protective uncertainty. Regrettably, some people might be involuntarily turned into optimizers, like a suburban child having his weekend minutes squeezed between karate, guitar lessons, and religious education. As I am writing these lines I am on a slow train in the Alps, comfortably shielded from traveling businesspersons. People around me are either students or retired persons, or those who do not have "important appointments," hence not afraid of what they call wasted time. To go from Munich to Milan, I picked the seven-and-a-half-hour train instead of the plane, which no self-respecting businessperson would do on a weekday, and am enjoying an air unpolluted by persons squeezed by life.

I came to this conclusion when, about a decade ago, I stopped using an alarm clock. I still woke up around the same time, but I followed my own personal clock. A dozen minutes of fuzziness and variability in my schedule made a considerable difference. True, there are some activities that require such dependability that an alarm clock is necessary, but I am free to choose a profession where I am not a slave to external pressure. Living like this, one can also go to bed early and not optimize one's schedule by squeezing every minute out of one's evening. At the limit, you can decide whether to be (relatively) poor, but free of your time, or rich but as dependent as a slave.

It took me a while to figure out that we are not designed for schedules. The realization came when I recognized the difference between writing a paper and writing a book. Books are fun to write, papers are painful. I tend to find the activity of writing greatly entertaining, given that I do it without any external constraint. You write, and may interrupt your activity, even in mid-sentence, the second it stops being attractive. After the success of this book, I was asked to write papers by the editors of a variety of professional and scientific journals. Then they asked me how long the piece should be. What? How long? For the first time in my life, I experienced a loss of pleasure in writing! Then I figured out a personal rule: For writing to be agreeable to me, the length of the piece needs to remain unpredictable. If I see the end of it, or if I am subjected to the shadow of an outline, I give up. I repeat that our ancestors were not subjected to outlines, schedules, and administrative deadlines.

Another way to see the beastly aspect of schedules and rigid projections is to think in limit situations. Would you like to know with great precision the date of your death? Would you like to know who committed the crime before the beginning of the movie? Actually, wouldn't it be better if the length of movies were kept a secret?

The Scrambling of Messages

Besides its effect on well-being, uncertainty presents tangible informational benefits, particularly with the scrambling of potentially damaging, and self-fulfilling, messages. Consider a currency pegged by a central bank to a fixed rate. The bank's official policy is to use its reserves to support it by buying and selling its currency in the open market, a procedure called intervention. But should the currency rate drop a tiny bit, people will immediately get the message that the intervention failed to support the currency and that the devaluation is coming. A pegged currency is not supposed to fluctuate; the slightest downward fluctuation is meant to be a harbinger of bad news! The rush to sell would cause a self-feeding frenzy leading to certain devaluation.

Now consider an environment where the central bank allows some noise around the official band. It does not promise a fixed rate, but one that can fluctuate a bit before the bank starts intervening. A small drop would not be considered to bear much information. The existence of noise leads us to avoid reading too much into variations. Fluctuat nec mergitur (it fluctuates but does not sink).

This point has applications in evolutionary biology, evolutionary game theory, and conflict situations. A mild degree of unpredictability in your behavior can help you to protect yourself in situations of conflict. Say you always have the same threshold of reactions. You take a set level of abuse, say seventeen insulting remarks per week, before getting into a rage and punching the eighteenth offender in the nose. Such predictability will allow people to take advantage of you up to that well-known trigger point and stop there. But if you randomize your trigger point, sometimes overreacting at the slightest joke, people will not know in advance how far they can push you. The same applies to governments in conflicts: They need to convince their adversaries that they are crazy enough to sometimes overreact to a small peccadillo. Even the magnitude of their reaction should be hard to foretell. Unpredictability is a strong deterrent.

THIRD THOUGHT: STANDING ON ONE LEG

I have been periodically challenged to compress all this business of randomness into a few sentences, so even an MBA can understand it (surprisingly, MBAs, in spite of the insults, represent a significant portion of my readership, simply because they think that my ideas apply to other MBAs and not to them).

This brings to mind Rabbi Hillel's story, when he was asked by someone particularly lazy if Hillel could teach him the Torah while the student was standing on one leg. Rabbi Hillel's genius is that he did not summarize; instead, he provided the core generator of the idea, the axiomatic framework, which I paraphrase as follows: Don't do to others what you don't want them to do to you; the rest is just commentary.

It took me an entire lifetime to find out what my generator is. It is: We favor the visible, the embedded, the personal, the narrated, and the tangible; we scorn the abstract. Everything good (aesthetics, ethics) and wrong (Fooled by Randomness) with us seems to flow from it.