

## Fooled By Randomness

### Twelve

- 

### GAMBLERS' TICKS AND PIGEONS IN A BOX

On gamblers' ticks crowding up my life. Why bad taxi-cab English can help you make money. How I am the fool of all fools, except that I am aware of it. Dealing with my genetic unfittness. No boxes of chocolate under my trading desk.

### TAXI-CAB ENGLISH AND CAUSALITY

First, a flashback in time to my early days as a trader in New York. Early in my career, I worked at Credit Suisse First Boston, then located in the middle of the block between Fifty-second and Fifty-third streets, between Madison and Park Avenue. It was called a Wall Street firm, in spite of its Midtown location—I used to claim to work “on Wall Street” in spite of having been lucky enough to set foot only twice on the physical Wall Street, one of the most repulsive areas I have visited east of Newark, New Jersey.

Then, in my twenties, I lived in a book-choked (but otherwise rather bare) apartment on Manhattan's Upper East Side. The bareness was not ideological; it was simply because I never managed to enter a furniture store, as I would eventually stop at a bookstore along the way and haul bags of books instead. As can be expected, the kitchen was devoid of any form of food and utensils, save for a defective espresso machine, as I learned to cook only very recently (even then . . .).

I went to work every morning in a yellow cab, which dropped me off at the corner of Park Avenue and Fifty-third Street. Cab drivers in New York City are known to be rather untamed and universally unfamiliar with the geography of the place, but, on occasion, one can find a cab driver who is both unacquainted with the city and skeptical of the universality of the laws of arithmetic. One day I had the misfortune (or perhaps the fortune, as we will see) to ride with a driver who did not seem capable of handling any language known to me, which includes taxi-cab English. I tried to help him navigate south between Seventy-fourth Street and Fifty-third Street, but he stubbornly continued the journey an additional block south, forcing me to use the Fifty-second Street entrance. That day, my trading portfolio made considerable profits, owing to considerable turmoil in currencies; it was then the best day of my young career.

The next day, as usual, I hailed a cab from the corner of Seventy-fourth Street and Third Avenue. The previous driver was nowhere in sight, perhaps deported back to the old country. Too bad; I was gripped with the unexplainable desire to pay him back for the favor he had done me and surprise him with a gigantic tip. Then I caught myself instructing the new cab driver to take me to the northeast corner of Fifty-second Street and Park Avenue, exactly where I was dropped off the day before. I was taken aback by my own words . . . but it was too late.

When I looked at my reflection in the elevator's mirror, it dawned on me that I wore the exact same tie as the day before—with the coffee stains from the previous day's fracas (my only addiction is to coffee). There was someone in me who visibly believed in a strong causal link between my use of the entrance, my choice of tie, and the previous day's market behavior. I was disturbed for acting like a fake, like an actor playing some role that was not his. I felt that I was an impostor. On the one hand, I talked like someone with strong scientific standards, a probabilist focused on his craft. On the other, I had closed superstitions just like one of these blue-collar pit traders. Would I have to go buy a horoscope next?

A little brooding revealed that my life until then had been governed by mild superstitions, me the expert in options, the dispassionate calculator of probabilities, a rational trader! It was not the first time that I had acted on mild superstitions of a harmless nature, which I believed were instilled in me by my Eastern Mediterranean roots: One does not grab the salt shaker from the hand of another person risking a falling out; one is to knock on wood upon receiving a compliment; plus many other Levantine beliefs passed on for a few dozen centuries. But like many things that brew and spread around the ancient pond, these beliefs I had taken with a fluctuating mixture of solemnity and mistrust. We consider them more like rituals than truly important actions meant to stave off undesirable turns of the goddess Fortuna—superstitions can instill some poetry in daily life.

The worrying part was that it was the first time that I noticed superstitions creeping into my professional life. My profession is to act like an insurance company, stringently computing the odds based on well-defined methods, taking advantage of other people when they are less rigorous, get blinded by some “analysis,” or act with the belief that they are chosen by destiny. But there was too much randomness flooding my occupation.

I detected the rapid accumulation of what are called “gamblers’ ticks” surreptitiously developing in my behavior—though minute and barely detectable. Until then these small ticks had escaped me. My mind seemed to be constantly trying to detect a statistical connection between some of my facial expressions and the outcome of events. For example, my income started to increase after I discovered my slight nearsightedness and started wearing glasses. Although glasses were not quite necessary, nor even useful, except for night driving, I kept them on my nose as I unconsciously acted as if I believed in the association between performance and glasses. To my brain such statistical association was as spurious as it can get, owing to the reduced sample size (here a single instance), yet this native statistical instinct did not seem to benefit from my expertise in hypothesis testing.

Gamblers are known to develop some behavioral distortions as a result of some pathological association between a betting outcome and some physical move. “Gambler” is about the most derogatory term that could be used in my derivatives profession. As an aside, gambling to me is best defined as an activity where the agent gets a thrill when confronting a random outcome, regardless of whether he has the odds stacked in his favor or against him. Even when the odds are clearly stacked against the gambler, he sometimes transcends the odds by believing that destiny selected him in some manner. This shows in the very sophisticated people one meets in casinos where they normally should not be found. I even ran into world-class probability experts who had a gambling habit on the side, throwing all of their knowledge to the wind. For example, a former colleague of mine, one of the most intelligent people I have ever met, frequently went to Las Vegas, and seemed to be such a turkey that the casino provided him with complimentary luxury suites and transportation. He even consulted a fortune teller prior to taking large trading positions and tried to get reimbursed by our employer.

## THE SKINNER PIGEON EXPERIMENT

At twenty-five, I was totally ignorant of the behavioral sciences. I had been fooled by my education and culture into believing that my superstitions were cultural, and that, consequently, they could be shed through the exercise of so-called reason. Taken at the general level of society, modern life would eliminate them as science and logic would enter. But in my case, I was over time getting more sophisticated intellectually, but the floodgates of randomness were bursting and I was becoming more superstitious.

These superstitions needed to be biological—but I was brought up in an era when the dogma was that it was nurture, rarely nature, that was the culprit. Clearly, there was nothing cultural about my link between my wearing glasses and a random market outcome. There was nothing cultural in my link between my use of entrance and my performance as a trader. There was nothing cultural in my wearing the same tie as the day before. Something in us has not developed properly over the past thousand

years and I was dealing with the remnant of our old brain.

To probe the point further, we need to look at such formations of causal associations in the lower forms of life. The famous Harvard psychologist B. F. Skinner constructed a box for rats and pigeons, equipped with a switch that the pigeon can operate by pecking. In addition, an electrical mechanism delivers food into the box. Skinner designed the box in order to study more general properties of the behavior of a collection of nonhumans, but it was in 1948 that he had the brilliant idea of ignoring the lever and focusing on the food delivery. He programmed it to deliver food at random to the famished birds.

He saw quite astonishing behavior on the part of the birds; they developed an extremely sophisticated rain-dance type of behavior in response to their ingrained statistical machinery. One bird swung its head rhythmically against a specific corner of the box, others spun their heads counterclockwise; literally all of the birds developed a specific ritual that progressively became hardwired into their mind as linked to their feeding.

This problem has a more worrying extension; we are not made to view things as independent from each other. When viewing two events A and B, it is hard not to assume that A causes B, B causes A, or both cause each other. Our bias is immediately to establish a causal link. While to a budding trader this results in hardly any worse costs than a few pennies in cab fare, it can draw the scientist into spurious inference. For it is harder to act as if one were ignorant than as if one were smart; scientists know that it is emotionally harder to reject a hypothesis than to accept it (what are called type I and type II errors)—quite a difficult matter when we have such sayings as *felix qui potuit cognoscere causas* (happy is he who understands what is behind things). It is very hard for us to just shut up. We are not cut out for it. Popper or not, we take things too seriously.

## PHILOSTRATUS REDUX

I offered no solution to the problem of statistical inference at a low resolution. I discussed in Chapter 3 the technical difference between noise and meaning—but it is time to discuss the execution. The Greek philosopher Pyrrho, who advocated a life of equanimity and indifference, was criticized for failing to keep his composure during a critical circumstance (he was chased by an ox). His answer was that he found it sometimes difficult to rid himself of his humanity. If Pyrrho cannot stop being human, I do not see why the rest of us should resemble the rational man who acts perfectly under uncertainty as propounded by economic theory. I discovered that much of the rationally obtained results using my computations of the various probabilities do not register deeply enough to impact my own conduct. In other words, I acted like the doctor in Chapter 11 who knew of the 2% probability of the disease, but somehow unwittingly treated the patient as if the ailment had a 95% probability of being there. My brain and my instinct were not acting in concert.

The details are as follows. As a rational trader (all traders boast so) I believe, as I discussed before, that there is a difference between noise and signal, and that noise needs to be ignored while a signal needs to be taken seriously. I use elementary (but robust) methods that allow me to calculate the expected noise and signal composition of any fluctuation in my trading performance. For example, after registering a profit of \$100,000 on a given strategy, I may assign a 2% probability to the hypothesis of the strategy being profitable and 98% probability to the hypothesis that the performance may be the result of mere noise. A gain of \$1 million on the other hand, certifies that the strategy is a profitable one, with a 99% probability. A rational person would act accordingly in the selection of strategies, and set his emotions in accordance with his results. Yet I have experienced leaps of joy over results that I knew were mere noise, and bouts of unhappiness over results that did not carry the slightest degree of statistical significance. I cannot help it, but I am emotional and derive most of my energy from my emotions. So the solution does not reside in taming my heart.

Since my heart does not seem to agree with my brain, I need to take serious action to avoid making irrational trading decisions, namely, by denying myself access to my performance report unless it hits a predetermined threshold. This is no different from the divorce between my brain and my appetite when it comes to the consumption of chocolate. I generally deal with it by ascertaining that there are no chocolate boxes under my trading desk.

One of the most irritating conversations I've had is with people who lecture me on how I should behave. Most of us know pretty much how we should behave. It is the execution that is the problem, not the absence of knowledge. I am tired of the moralizing slow-thinkers who pound me with platitudes like I should floss daily, eat my regular apple, and visit the gym outside of the New Year's resolution. In the markets the recommendation would be to ignore the noise component in the performance. We need tricks to get us there but before that we need to accept the fact that we are mere animals in need of lower forms of tricks, not lectures.

Finally, I consider myself lucky for not having a cigarette addiction. For the best way to understand how we could be rational in our perception of the risks and probabilities and, at the same time, be foolish while acting on them would be to have a conversation with a cigarette smoker. For few cigarette smokers remain unaware of the lung cancer rates in their population. If you remain unconvinced, take a look at the huddling smoking crowd outside the service entrance of the Memorial Sloan-Kettering Cancer Center in New York City's Upper East Side. You will see dozens of cancer nurses (and, perhaps, doctors) standing outside the entrance with a cigarette in hand as hopeless patients are wheeled in for their treatments.