Fooled By Randomness

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A BIZARRE ACCOUNTING METHOD

On alternative histories, a probabilistic view of the world, intellectual fraud, and the randomness wisdom of a Frenchman with steady bathing habits. How journalists are bred to not understand random series of events. Beware borrowed wisdom: How almost all great ideas concerning random outcomes are against conventional sapience. On the difference between correctness and intelligibility.

ALTERNATIVE HISTORY

I start with the platitude that one cannot judge a performance in any given field (war, politics, medicine, investments) by the results, but by the costs of the alternative (i.e., if history played out in a different way). Such substitute courses of events are called alternative histories. Clearly, the quality of a decision cannot be solely judged based on its outcome, but such a point seems to be voiced only by people who fail (those who succeed attribute their success to the quality of their decision). Such opinion—"that I followed the best course"—is what politicians on their way out of office keep telling those members of the press who still listen to them—eliciting the customary commiserating "yes, we know" that makes the sting even worse. And like many platitudes, this one, while being too obvious, is not easy to carry out in practice.

Russian Roulette

One can illustrate the strange concept of alternative histories as follows. Imagine an eccentric (and bored) tycoon offering you $10 million to play Russian roulette, i.e., to put a revolver containing one bullet in the six available chambers to your head and pull the trigger. Each realization would count as one history, for a total of six possible histories of equal probabilities. Five out of these six histories would lead to enrichment; one would lead to a statistic, that is, an obituary with an embarrassing (but certainly original) cause of death. The problem is that only one of the histories is observed in reality; and the winner of $10 million would elicit the admiration and praise of some fatuous journalist (the very same ones who unconditionally admire the Forbes 500 billionaires). Like almost every executive I have encountered during an eighteen-year career on Wall Street (the role of such executives in my view being no more than a judge of results delivered in a random manner), the public observes the external signs of wealth without even having a glimpse at the source (we call such source the generator).Consider the possibility that the Russian roulette winner would be used as a role model by his family, friends, and neighbors.

While the remaining five histories are not observable, the wise and thoughtful person could easily make a guess as to their attributes. It requires some thoughtfulness and personal courage. In addition, in time, if the roulette-betting fool keeps playing the game, the bad histories will tend to catch up with him. Thus, if a twenty-five-year-old played Russian roulette, say, once a year, there would be a very slim possibility of his surviving until his fiftieth birthday—but, if there are enough players, say thousands of twenty-five-year-old players, we can expect to see a handful of (extremely rich) survivors (and a very large cemetery). Here I have to admit that the example of Russian roulette is more than intellectual to me. I lost a comrade to this "game" during the Lebanese war, when we were in our teens. But there is more. I discovered that I had more than a shallow interest in literature thanks to the effect of Graham Greene's account of his flirt with such a game; it bore a stronger effect on me than the actual events I had recently witnessed. Greene claimed that he once tried to soothe the dullness of his childhood by pulling the trigger on a revolver—making me shiver at the thought that I had at least a one in six

probability of having been without his novels.

The reader can see my unusual notion of alternative accounting: $10 million earned through Russian roulette does not have the same value as $10 million earned through the diligent and artful practice of dentistry. They are the same, can buy the same goods, except that one's dependence on randomness is greater than the other. To an accountant, though, they would be identical; to your next-door neighbor too. Yet, deep down, I cannot help but consider them as qualitatively different. The notion of such alternative accounting has interesting intellectual extensions and lends itself to mathematical formulation, as we will see in the next chapter with our introduction of the Monte Carlo engine. Note that such use of mathematics is only illustrative, aiming at getting the intuition of the point, and should not be interpreted as an engineering issue. In other words, one need not actually compute the alternative histories so much as assess their attributes. Mathematics is not just a "numbers game," it is a way of thinking. We will see that probability is a qualitative subject.

Possible Worlds

Note that these ideas of alternative histories have been covered by separate disciplines in intellectual history, worth presenting quickly because they all seem to converge on the same concept of risk and uncertainty (certainty is something that is likely to take place across the highest number of different alternative histories; uncertainty concerns events that should take place in the lowest number of them).

In philosophy, there has been considerable work on the subject starting with Leibniz' idea of possible worlds. For Leibniz, God's mind included an infinity of possible worlds, of which he selected just one. These nonselected worlds are worlds of possibilities, and the one in which I am breathing and writing these lines is just one of them that happened to have been executed. Philosophers also have a branch of logic that specializes in the matter: whether some property holds across all possible worlds or if it holds across a single world—with ramifications into the philosophy of language called possible worlds semantics with such authors as Saul Kripke.

In physics, there is the many-world interpretation in quantum mechanics (associated with the works of Hugh Everett in 1957) which considers that the universe branches out treelike at each juncture; what we are living now is only one of these many worlds. Taken at a more extreme level, whenever numerous viable possibilities exist, the world splits into many worlds, one world for each different possibility—causing the proliferation of parallel universes. I am an essayist-trader in one of the parallel universes, plain dust in another.

Finally, in economics: Economists studied (perhaps unwittingly) some of the Leibnizian ideas with the possible "states of nature" pioneered by Kenneth Arrow and Gerard Debreu. This analytical approach to the study of economic uncertainty is called the "state space" method—it happens to be the cornerstone of neoclassical economic theory and mathematical finance. A simplified version is called "scenario analysis," the series of "what-ifs" used in, say, the forecasting of sales for a fertilizer plant under different world conditions and demands for the (smelly) product.

An Even More Vicious Roulette

Reality is far more vicious than Russian roulette. First, it delivers the fatal bullet rather infrequently, like a revolver that would have hundreds, even thousands, of chambers instead of six. After a few dozen tries, one forgets about the existence of a bullet, under a numbing false sense of security. The point is dubbed in this book the black swan problem, which we cover in Chapter 7, as it is linked to the problem of induction, a problem that has kept a few thinkers awake at night. It is also related to a problem called denigration of history, as gamblers, investors, and decision-makers feel that the sorts of things that happen to others would not necessarily happen to them.

Second, unlike a well-defined, precise game like Russian roulette, where the risks are visible to anyone capable of multiplying and dividing by six, one does not observe the barrel of reality. Very rarely is the generator visible to the naked eye. One is thus capable of unwittingly playing Russian roulette—and calling it by some alternative "low risk" name. We see the wealth being generated, never the processor, a matter that makes people lose sight of their risks, and never consider the losers. The game seems terribly easy and we play along carelessly. Even scientists with all their sophistication in calculating probabilities cannot deliver any meaningful answer about the odds, since knowledge of these depends on our witnessing the barrel of reality—of which we generally know nothing.

Finally, there is an ingratitude factor in warning people about something abstract (by definition anything that did not happen is abstract). Say you engage in a business of protecting investors from rare events by constructing packages that shield them from their sting (something I have done on occasion). Say that nothing happens during the period. Some investors will complain about your spending their money; some will even try to make you feel sorry: "You wasted my money on insurance last year; the factory did not burn, it was a stupid expense. You should only insure for events that happen." One investor came to see me fully expecting me to be apologetic (it did not work). But the world is not that homogeneous: There are some (though very few) who will call you to express their gratitude and thank you for having protected them from the events that did not take place.

SMOOTH PEER RELATIONS

The degree of resistance to randomness in one's life is an abstract idea, part of its logic counterintuitive, and, to confuse matters, its realizations nonobservable. But I have been increasingly devoted to it—for a collection of personal reasons I will leave for later. Clearly my way of judging matters is probabilistic in nature; it relies on the notion of what could have probably happened, and requires a certain mental attitude with respect to one's observations. I do not recommend engaging an accountant in a discussion about such probabilistic considerations. For an accountant a number is a number. If he were interested in probability he would have gotten involved in more introspective professions—and would be inclined to make a costly mistake on your tax return.

While we do not see the roulette barrel of reality, some people give it a try; it takes a special mindset to do so. Having seen hundreds of people enter and exit my profession (characterized by extreme dependence on randomness), I have to say that those who have had a modicum of scientific training tend to go the extra mile. For many, such thinking is second nature. This might not necessarily come from their scientific training per se (beware of causality), but possibly from the fact that people who have decided at some point in their lives to devote themselves to scientific research tend to have an ingrained intellectual curiosity and a natural tendency for such introspection. Particularly thoughtful are those who had to abandon scientific studies because of their inability to keep focused on a narrowly defined problem (or, in Nero's case, the minute arcane details and petty arguments). Without excessive intellectual curiosity it is almost impossible to complete a Ph.D. thesis these days; but without a desire to narrowly specialize, it is impossible to make a scientific career. (There is a distinction, however, between the mind of a pure mathematician thriving on abstraction and that of a scientist consumed by curiosity. A mathematician is absorbed in what goes into his head while a scientist searches into what is outside of himself.) However, some people's concern for randomness can be excessive; I have even seen people trained in some fields, like, say, quantum mechanics, push the idea to the other extreme, only seeing alternative histories (in the many-world interpretation) and ignoring the one that actually took place.

Some traders can be unexpectedly introspective about randomness. Not long ago I had dinner at the bar of a Tribeca restaurant with Lauren Rose, a trader who was reading an early draft of this book. We flipped a coin to see who was going to pay for the meal. I lost and paid. He was about to thank me when he abruptly stopped and said that he paid for half of it probabilistically.

I thus view people distributed across two polar categories: On one extreme, those who never accept the notion of randomness; on the other, those who are tortured by it. When I started on Wall Street in the 1980s, trading rooms were populated with people with a “business orientation,” that is, generally devoid of any introspection, flat as a pancake, and likely to be fooled by randomness. Their failure rate was extremely high, particularly when financial instruments gained in complexity. Somehow, tricky products, like exotic options, were introduced and carried counterintuitive payoffs that were too difficult for someone of such culture to handle. They dropped like flies; I do not think that many of the hundreds of MBAs of my generation I met on Wall Street in the 1980s still engage in such forms of professional and disciplined risk taking.

Salvation via Aeroflot

The 1990s witnessed the arrival of people of richer and more interesting backgrounds, which made the trading rooms far more entertaining. I was saved from the conversation of MBAs. Many scientists, some of them extremely successful in their field, arrived with a desire to make a buck. They, in turn, hired people who resembled them. While most of these people were not Ph.D.s (indeed, the Ph.D. is still a minority), the culture and values suddenly changed, becoming more tolerant of intellectual depth. It caused an increase in the already high demand for scientists on Wall Street, owing to the rapid development of financial instruments. The dominant specialty was physics, but one could find all manner of quantitative backgrounds among them. Russian, French, Chinese, and Indian accents (by order) began dominating in both New York and London. It was said that every plane from Moscow had at least its back row full of Russian mathematical physicists en route to Wall Street (they lacked the street smarts to get good seats). One could hire very cheap labor by going to JFK airport with a (mandatory) translator, randomly interviewing those who fit the stereotype. Indeed, by the late 1990s one could get someone trained by a world-class scientist for almost half the price of an MBA. As they say, marketing is everything; these guys do not know how to sell themselves.

I had a strong bias in favor of Russian scientists; many can be put to active use as chess coaches (I also got a piano teacher out of the process). In addition, they are extremely helpful in the interview process. When MBAs apply for trading positions, they frequently boast “advanced” chess skills on their résumés. I recall the MBA career counselor at Wharton recommending our advertising chess skills “because it sounds intelligent and strategic.” MBAs, typically, can interpret their superficial knowledge of the rules of the game into “expertise.” We used to verify the accuracy of claims of chess expertise (and the character of the applicant) by pulling a chess set out of a drawer and telling the student, now turning pale: “Yuri will have a word with you.”

The failure rate of these scientists, though, was better, but only slightly so than that of MBAs; but it came from another reason, linked to their being on average (but only on average) devoid of the smallest bit of practical intelligence. Some successful scientists had the judgment (and social graces) of a doorknob—but by no means all of them. Many people were capable of the most complex calculations with utmost rigor when it came to equations, but were totally incapable of solving a problem with the smallest connection to reality; it was as if they understood the letter but not the spirit of the math (we will see more on such dual thinking with the two systems of reasoning problem in Chapter 11). I am convinced that X, a likeable Russian man of my acquaintance, has two brains: one for math and another, considerably inferior one, for everything else (which included solving problems related to the mathematics of finance). But on occasion a fast-thinking scientific-minded person with street smarts would emerge. Whatever the benefits of such population shift, it improved our chess skills and provided us with quality conversation during lunchtime—it extended the lunch hour considerably. Consider that I had in the 1980s to chat with colleagues who had an MBA or tax accounting background and were capable of the heroic feat of discussing FASB standards. I have to say that their interests were not too contagious. The interesting thing about these physicists did not lie in their ability to discuss fluid dynamics; it is that they were naturally interested in a variety of intellectual subjects and provided pleasant conversation.

Solon Visits Regine's Nightclub

As the reader may already suspect, my opinions about randomness have not earned me the smoothest of relations with some of my peers during my Wall Street career (many of whom the reader can see indirectly—but only indirectly—portrayed in these chapters). But where I had uneven relations was with some of those who had the misfortune of being my bosses. For I had two bosses in my life of contrasting characteristics in about every trait.

The first, whom I will call Kenny, was the epitome of the suburban family man. He would be of the type to coach soccer on Saturday morning, and invite his brother-in-law for a Sunday afternoon barbecue. He gave the appearance of someone I would trust with my savings—indeed he rose quite rapidly in the institution in spite of his lack of technical competence in financial derivatives (his firm's claim to fame). But he was too much a no-nonsense person to make out my logic. He once blamed me for not being impressed with the successes of some of his traders who did well during the bull market for European bonds of 1993, whom I openly considered nothing better than random gunslingers. I tried presenting him with the notion of survivorship bias (Part II of this book) in vain. His traders have all exited the business since then "to pursue other interests" (including him). But he gave the appearance of being a calm, measured man, who spoke his mind and knew how to put the other person at ease during a conversation. He was articulate, extremely presentable thanks to his athletic looks, well measured in his speech, and endowed with the extremely rare quality of being an excellent listener. His personal charm allowed him to win the confidence of the chairman—but I could not conceal my disrespect, particularly as he could not make out the nature of my conversation. In spite of his conservative looks he was a perfect time bomb, ticking away.

The second, whom I will call Jean-Patrice, in contrast, was a moody Frenchman with an explosive temper and a hyperaggressive personality. Except for those he truly liked (not that many), he was expert at making his subordinates uncomfortable, putting them in a state of constant anxiety. He greatly contributed to my formation as a risk taker; he is one of the very rare people who have the guts to care only about the generator, entirely oblivious of the results. He presented the wisdom of Solon, but, while one would expect someone with such personal wisdom and such understanding of randomness to lead a dull life, he lived a colorful one. In contrast with Kenny, who wore conservative dark suits and white shirts (his only indulgence was flashy equestrian Hermès ties), Jean-Patrice dressed like a peacock: blue shirts, plaid sports coats stuffed with gaudy silk pocket squares. No family-minded man, he rarely came to work before noon—though I can safely say that he carried his work with him to the most unlikely places. He frequently called me from Regine's, an upscale nightclub in New York, waking me up at three in the morning to discuss some small (and irrelevant) details of my risk exposure. In spite of his slight corpulence, women seemed to find him irresistible; he frequently disappeared at midday and was unreachable for hours. His advantage might have been in his being a New York Frenchman with steady bathing habits. Once he invited me to discuss an urgent business issue with him. Characteristically, I found him mid-afternoon in a strange "club" in Paris that carried no nameplate and where he sat with documents strewn across the table from him. Sipping champagne, he was simultaneously caressed by two scantily dressed young ladies. Strangely, he involved them in the conversation as if they were part of the meeting. He even had one of the ladies pick up his constantly ringing mobile phone as he did not want our conversation to be interrupted.

I am still amazed at this flamboyant man's obsession with risks, which he constantly played in his head—he literally thought of everything that could possibly happen. He forced me to make an alternative plan should a plane crash into the office building (way before the events of September 2001)—and fumed at my answer that the financial condition of his department would be of small interest to me in such circumstances. He had a horrible reputation as a philanderer, a temperamental boss capable of firing someone at a whim, yet he listened to me and understood every word I had to say, encouraging me to go the extra mile in my study of randomness. He taught me to look for the

invisible risks of blowup in any portfolio. Not coincidentally, he has an immense respect for science and an almost fawning deference for scientists; a decade or so after we worked together he showed up unexpectedly during the defense of my doctoral thesis, smiling from the back of the room. While Kenny knew how to climb the ladder of an institution, reaching a high level in the organization before being forced out, Jean-Patrice did not have such a happy career, a matter that taught me to beware of mature financial institutions.

It can be disturbing for many self-styled “bottom line”–oriented people to be questioned about the histories that did not take place rather than the ones that actually happened. Clearly, to a no-nonsense person of the “successful in business” variety, my language (and, I have to reckon, some traits of my personality) appears strange and incomprehensible. To my amusement, the argument appears offensive to many.

The contrast between Kenny and Jean-Patrice is not a mere coincidence that I happened to witness in a protracted career. Beware the spendthrift “businesswise” person; the cemetery of markets is disproportionately well stocked with the self-styled “bottom line” people. In contrast with their customary Masters of the Universe demeanor, they suddenly look pale, humble, and hormone-deprived on the way to the personnel office for the customary discussion of the severance agreement.

GEORGE WILL IS NO SOLON:

ON COUNTERINTUITIVE TRUTHS

Realism can be punishing. Probabilistic skepticism is worse. It is difficult to go about life wearing probabilistic glasses, as one starts seeing fools of randomness all around, in a variety of situations—obdurate in their perceptional illusion. To start, it is impossible to read a historian’s analysis without questioning the inferences: We know that Hannibal and Hitler were mad in their pursuits, as Rome is not today Phoenician-speaking and Times Square in New York currently exhibits no swastikas. But what of all those generals who were equally foolish, but ended up winning the war and consequently the esteem of the historical chronicler? It is hard to think of Alexander the Great or Julius Caesar as men who won only in the visible history, but who could have suffered defeat in others. If we have heard of them, it is simply because they took considerable risks, along with thousands of others, and happened to win. They were intelligent, courageous, noble (at times), had the highest possible obtainable culture in their day—but so did thousands of others who live in the musty footnotes of history. Again I am not contesting that they won their wars—only the claims concerning the quality of their strategies. (My very first impression upon a recent rereading of the Iliad, the first in my adulthood, is that the epic poet did not judge his heroes by the result: Heroes won and lost battles in a manner that was totally independent of their own valor; their fate depended upon totally external forces, generally the explicit agency of the scheming gods (not devoid of nepotism). Heroes are heroes because they are heroic in behavior, not because they won or lost. Patrocles does not strike us as a hero because of his accomplishments (he was rapidly killed) but because he preferred to die than see Achilles sulking into inaction. Clearly, the epic poets understood invisible histories. Also later thinkers and poets had more elaborate methods for dealing with randomness, as we will see with stoicism.

Listening to the media, mostly because I am not used to it, can cause me on occasion to jump out of my seat and become emotional in front of the moving image (I grew up with no television and was in my late twenties when I learned to operate a TV set). One illustration of a dangerous refusal to consider alternative histories is provided by the interview that media person George Will, a “commentator” of the extensively commenting variety, conducted with Professor Robert Shiller, a man known to the public for his bestselling book Irrational Exuberance, but known to the connoisseur for his remarkable insights about the structure of market randomness and volatility (expressed in the precision of mathematics).

The interview is illustrative of the destructive aspect of the media, in catering to our heavily warped common sense and biases. I was told that George Will was very famous and extremely respected (that is, for a journalist). He might even be someone of the utmost intellectual integrity; his profession, however, is merely to sound smart and intelligent to the hordes. Shiller, on the other hand, understands the ins and outs of randomness; he is trained to deal with rigorous argumentation, but does sound less smart in public because his subject matter is highly counterintuitive. Shiller had been pronouncing the stock market to be overpriced for a long time. George Will indicated to Shiller that had people listened to him in the past they would have lost money, as the market has more than doubled since he started pronouncing it overvalued. To such a journalistic and well-sounding (but senseless) argument, Shiller was unable to respond except to explain that the fact that he was wrong in one single market call should not carry undue significance. Shiller, as a scientist, did not claim to be a prophet or one of the entertainers who comment on the markets on the evening news. Yogi Berra would have had a better time with his confident comment on the fat lady not having sung yet.

I could not understand what Shiller, untrained to compress his ideas into vapid sound bites, was doing on such a TV show. Clearly, it is foolish to think that an irrational market cannot become even more irrational; Shiller's views on the rationality of the market are not invalidated by the argument that he was wrong in the past. Here I could not help seeing in the person of George Will the representative of so many nightmares in my career; my attempting to prevent someone from playing Russian roulette for $10 million and seeing journalist George Will humiliating me in public by saying that had the person listened to me it would have cost him a considerable fortune. In addition, Will's comment was not an off-the-cuff remark; he wrote an article on the matter discussing Shiller's bad "prophecy." Such tendency to make and unmake prophets based on the fate of the roulette wheel is symptomatic of our ingrained inability to cope with the complex structure of randomness prevailing in the modern world. Mixing forecast and prophecy is symptomatic of randomness-foolishness (prophecy belongs to the right column; forecast is its mere left-column equivalent).

Humiliated in Debates

Clearly, this idea of alternative history does not make intuitive sense, which is where the fun begins. For starters, we are not wired in a way to understand probability, a point that we will examine backward and forward in this book. I will just say at this point that researchers of the brain believe that mathematical truths make little sense to our mind, particularly when it comes to the examination of random outcomes. Most results in probability are entirely counterintuitive;we will see plenty of them. Then why argue with a mere journalist whose paycheck comes from playing on the conventional wisdom of the hordes? I recall that every time I have been humiliated in a public discussion on markets by someone (of the George Will variety) who seemed to present more palatable and easier-to-understand arguments, I turned out (much later) to be right. I do not dispute that arguments should be simplified to their maximum potential; but people often confuse complex ideas that cannot be simplified into a media-friendly statement as symptomatic of a confused mind. MBAs learn the concept of clarity and simplicity—the five-minute-manager take on things. The concept may apply to the business plan for a fertilizer plant, but not to highly probabilistic arguments—which is the reason I have anecdotal evidence in my business that MBAs tend to blow up in financial markets, as they are trained to simplify matters a couple of steps beyond their requirement. (I beg the MBA reader not to take offense; I am myself the unhappy holder of the degree.)

A Different Kind of Earthquake

Try the following experiment. Go to the airport and ask travelers en route to some remote destination how much they would pay for an insurance policy paying, say, a million tugrits (the currency of Mongolia) if they died during the trip (for any reason).Then ask another collection of travelers how much they would pay for insurance that pays the same in the event of death from a terrorist act (and only a terrorist act). Guess which one would command a higher price? Odds are that people would rather pay

for the second policy (although the former includes death from terrorism). The psychologists Daniel Kahneman and Amos Tversky figured this out several decades ago. The irony is that one of the sampled populations did not include people on the street, but professional predictors attending some society of forecasters' annual meeting. In a now famous experiment they found that the majority of people, whether predictors or nonpredictors, will judge a deadly flood (causing thousands of deaths) caused by a California earthquake to be more likely than a fatal flood (causing thousands of deaths) occurring somewhere in North America (which happens to include California). As a derivatives trader I noticed that people do not like to insure against something abstract; the risk that merits their attention is always something vivid.

This brings us to a more dangerous dimension of journalism. We just saw how the scientifically hideous George Will and his colleagues can twist arguments to sound right without being right. But there is a more general impact by information providers in biasing the representation of the world one gets from the delivered information. It is a fact that our brain tends to go for superficial clues when it comes to risk and probability, these clues being largely determined by what emotions they elicit or the ease with which they come to mind. In addition to such problems with the perception of risk, it is also a scientific fact, and a shocking one, that both risk detection and risk avoidance are not mediated in the "thinking" part of the brain but largely in the emotional one (the "risk as feelings" theory). The consequences are not trivial: It means that rational thinking has little, very little, to do with risk avoidance. Much of what rational thinking seems to do is rationalize one's actions by fitting some logic to them.

In that sense the description coming from journalism is certainly not just an unrealistic representation of the world but rather the one that can fool you the most by grabbing your attention via your emotional apparatus—the cheapest to deliver sensation. Take the mad cow "threat" for example: Over a decade of hype, it only killed people (in the highest estimates) in the hundreds as compared to car accidents (several hundred thousands!)—except that the journalistic description of the latter would not be commercially fruitful. (Note that the risk of dying from food poisoning or in a car accident on the way to a restaurant is greater than dying from mad cow disease.) This sensationalism can divert empathy toward wrong causes: cancer and malnutrition being the ones that suffer the most from the lack of such attention. Malnutrition in Africa and Southeast Asia no longer causes the emotional impact—so it literally dropped out of the picture. In that sense the mental probabilistic map in one's mind is so geared toward the sensational that one would realize informational gains by dispensing with the news. Another example concerns the volatility of markets. In people's minds lower prices are far more "volatile" than sharply higher moves. In addition, volatility seems to be determined not by the actual moves but by the tone of the media. The market movements in the eighteen months after September 11, 2001, were far smaller than the ones that we faced in the eighteen months prior—but somehow in the mind of investors they were very volatile. The discussions in the media of the "terrorist threats" magnified the effect of these market moves in people's heads. This is one of the many reasons that journalism may be the greatest plague we face today—as the world becomes more and more complicated and our minds are trained for more and more simplification.

Proverbs Galore

Beware the confusion between correctness and intelligibility. Part of conventional wisdom favors things that can be explained rather instantly and "in a nutshell"—in many circles it is considered law. Having attended a French elementary school, a lycée primaire, I was trained to rehash Boileau's adage:

Ce qui se conçoit bien s'énonce clairement

Et les mots pour le dire viennent aisément

What is easy to conceive is clear to express / Words to say it would come effortlessly.

The reader can imagine my disappointment at realizing, while growing up as a practitioner of randomness, that most poetic sounding adages are plain wrong. Borrowed wisdom can be vicious. I need to make a huge effort not to be swayed by well-sounding remarks. I remind myself of Einstein's remark that common sense is nothing but a collection of misconceptions acquired by age eighteen. Furthermore, What sounds intelligent in a conversation or a meeting, or, particularly, in the media, is suspicious.

Any reading of the history of science would show that almost all the smart things that have been proven by science appeared like lunacies at the time they were first discovered. Try to explain to a Times (of London) journalist in 1905 that time slows down when one travels (even the Nobel committee never granted Einstein the prize on account of his insight on special relativity). Or to someone with no exposure to physics that there are places in our universe where time does not exist. Try to explain to Kenny that, although his star trader "proved" to be extremely successful, I have enough arguments to convince him that he is a dangerous idiot.

Risk Managers

Corporations and financial institutions have recently created the strange position of risk manager, someone who is supposed to monitor the institution and verify that it is not too deeply involved in the business of playing Russian roulette. Clearly, having been burned a few times, the incentive is there to have someone take a look at the generator, the roulette that produces the profits and losses. Although it is more fun to trade, many extremely smart people among my friends (including Jean-Patrice) felt attracted by such positions. It is an important and attractive fact that the average risk manager earns more than the average trader (particularly when we take into account the number of traders thrown out of the business: While a ten-year survival rate for a trader is in the single digits, that of a risk manager is close to 100%). "Traders come and go; risk managers are here to stay." I keep thinking of taking such a position both on economic grounds (as it is probabilistically more profitable) and because the job offers more intellectual content than the one consisting in just buying and selling, and allows one to integrate research and execution. Finally, a risk manager's blood has smaller quantities of the harmful kind of stress hormones. But something has held me back, aside from the irrationality of wanting the pains and entertainment from the emotions of speculation. The risk managers' job feels strange: As we said, the generator of reality is not observable. They are limited in their power to stop profitable traders from taking risks, given that they would, ex post, be accused by the George Wills around of costing the shareholder some precious opportunity shekels. On the other hand, the occurrence of a blowup would cause them to be responsible for it. What to do in such circumstances?

Their focus becomes to play politics, cover themselves by issuing vaguely phrased internal memoranda that warn against risk-taking activities yet stop short of completely condemning it, lest they lose their job. Like a doctor torn between the two types of errors, the false positive (telling the patient he has cancer when in fact he does not) and the false negative (telling the patient he is healthy when in fact he has cancer), they need to balance their existence with the fact that they inherently need some margin of error in their business.

Epiphenomena

From the standpoint of an institution, the existence of a risk manager has less to do with actual risk reduction than it has to do with the impression of risk reduction. Philosophers since Hume and modern psychologists have been studying the concept of epiphenomenalism, or when one has the illusion of cause-and-effect. Does the compass move the boat? By "watching" your risks, are you effectively reducing them or are you giving yourself the feeling that you are doing your duty? Are you like a chief executive officer or just an observing press officer? Is such illusion of control harmful?

I conclude the chapter with a presentation of the central paradox of my career in financial randomness. By definition, I go against the grain, so it should come as no surprise that my style and methods are neither popular nor easy to understand. But I have a dilemma: On the one hand, I work with others in the real world, and the real world is not just populated with babbling but ultimately inconsequential journalists. So my wish is for people in general to remain fools of randomness (so I can trade against them), yet for there to remain a minority intelligent enough to value my methods and hire my services. In other words, I need people to remain fools of randomness, but not all of them. I was fortunate to meet Donald Sussman, who corresponds to such an ideal partner; he helped me in the second stage of my career by freeing me from the ills of employment. My greatest risk is to become successful, as it would mean that my business is about to disappear; strange business, ours.