1

Why You Should Visit Cemeteries

Survivorship Bias

No matter where Rick looks, he sees rock stars. They appear on television, on the front pages of magazines, in concert programs, and at online fan sites. Their songs are unavoidable—in the mall, on his playlist, in the gym. The rock stars are everywhere. There are lots of them. And they are successful. Motivated by the stories of countless guitar heroes, Rick starts a band. Will he make it big? The probability lies a fraction above zero. Like so many others, he will most likely end up in the graveyard of failed musicians. This burial ground houses ten thousand times more musicians than the stage does, but no journalist is interested in failures—with the exception of fallen superstars. This makes the cemetery invisible to outsiders.

In daily life, because triumph is made more visible than failure, you systematically overestimate your chances of succeeding. As an outsider, you (like Rick) succumb to an illusion, and you mistake how minuscule the probability of success really is. Rick, like so many others, is a victim of *survivorship bias.*

Behind every popular author you can find a hundred other writers whose books will never sell. Behind them are another hundred who haven't found publishers. Behind them are yet another hundred whose unfinished manuscripts gather dust in drawers. And behind each one of these are a hundred people who dream of—one day—writing a book. You, however, hear of only the successful authors (these days, many of them self-published) and fail to recognize how unlikely literary success is. The same goes for photographers, entrepreneurs, artists, athletes, architects, Nobel Prize winners, television presenters, and beauty queens. The media is not interested in digging around in the graveyards of the unsuccessful. Nor is this its job. To elude the *survivorship bias*, you must do the digging yourself.

You will also come across *survivorship bias* when dealing with money and risk: Imagine that a friend founds a start-up. You belong to the circle of potential investors and you sense a real opportunity: This could be the next Google. Maybe you'll be lucky. But what is the reality? The most likely scenario is that the company will not even make it off the starting line. The second most likely outcome is that it will go bankrupt within three years. Of the companies that survive these first three years, most never grow to more than ten employees. So, should you never put your hard-earned money at risk? Not necessarily. But you should recognize that the *survivorship bias* is at work, distorting the probability of success like cut glass.

Take the Dow Jones Industrial Average index. It consists of out-and-out survivors. Failed and small businesses do not enter the stock market, and yet these represent the majority of business ventures. A stock index is not indicative of a country's economy. Similarly, the press does not report proportionately on all musicians. The vast number of books and coaches dealing with success should also you make skeptical: The unsuccessful don't write books or give lectures on their failures.

Survivorship bias can become especially pernicious when you become a member of the "winning" team. Even if your success stems from pure coincidence, you'll discover similarities with other winners and be tempted to mark these as "success factors." However, if you ever visit the graveyard of failed individuals and companies, you will realize that its tenants possessed many of the same traits that characterize your success.

If enough scientists examine a particular phenomenon, a few of these studies will deliver statistically significant results through pure coincidence —for example, the relationship between red wine consumption and high life expectancy. Such (false) studies immediately attain a high degree of popularity and attention. As a result, you will not read about the studies with the “boring” but correct results.

Survivorship bias means this: People systematically overestimate their chances of success. Guard against it by frequently visiting the graves of once-promising projects, investments, and careers. It is a sad walk but one that should clear your mind.

7

Beware the “Special Case”

Confirmation Bias (Part 1)

Gil wants to lose weight. He selects a particular diet and checks his progress on the scale every morning. If he has lost weight, he pats himself on the back and considers the diet a success. If he has gained weight, he writes it off as a normal fluctuation and forgets about it. For months, he lives under the illusion that the diet is working, even though his weight remains constant. Gil is a victim of the *confirmation bias*—albeit a harmless form of it.

The *confirmation bias* is the mother of all misconceptions. It is the tendency to interpret new information so that it becomes compatible with our existing theories, beliefs, and convictions. In other words, we filter out any new information that contradicts our existing views (“disconfirming evidence”). This is a dangerous practice. “Facts do not cease to exist because they are ignored,” said writer Aldous Huxley. However, we do exactly that, as super-investor Warren Buffett knows: “What the human being is best at doing is interpreting all new information so that their prior conclusions remain intact.”

The *confirmation bias* is alive and well in the business world. One example: An executive team decides on a new strategy. The team enthusiastically celebrates any sign that the strategy is a success. Everywhere the executives look, they see plenty of confirming evidence, while indications to the contrary remain unseen or are quickly dismissed as "exceptions" or "special cases." They have become blind to disconfirming evidence.

What can you do? If the word "exception" crops up, prick up your ears. Often it hides the presence of disconfirming evidence. It pays to listen to Charles Darwin: Since his youth, he set out to fight the *confirmation bias* systematically. Whenever observations contradicted his theory, he took them very seriously and noted them down immediately. He knew that the brain actively "forgets" disconfirming evidence after a short time. The more correct he judged his theory to be, the more actively he looked for contradictions.

The following experiment shows how much effort it takes to question your own theory. A professor presented his students with the number sequence 2–4–6. They had to calculate the underlying rule that the professor had written on the back of a sheet of paper. The students had to provide the next number in the sequence to which the professor would reply "fits the rule" or "does not fit the rule." The students could guess as many numbers as they wanted but could try only once to identify the rule. Most students suggested 8 as the next number, and the professor replied: "Fits the rule." To be sure, they tried 10, 12, and 14. The professor replied each time: "Fits the rule." The students concluded: "The rule is to add two to the last number." The professor shook his head: "That is not the rule."

One shrewd student tried a different approach. He tested out the number –2. The professor said: "Does not fit the rule." "Seven?" he asked. "Fits the rule." The student tried all sorts of numbers: –24, 9, –43. Apparently he had an idea, and he was trying to find a flaw with it. Only when he could no longer find a counterexample, the student said: "The rule is this: The next number must be higher than the previous one." The professor turned over the sheet of paper, revealing those very words. What distinguished the resourceful student from the others? While the majority of students sought merely to confirm their theories, he tried to find fault with his, consciously looking for disconfirming evidence. You might think: "Good for him, but

not the end of the world for the others." However, falling for the *confirmation bias* is not a petty intellectual offense. How it affects our lives will be revealed in the next chapter.

8

Murder Your Darlings

Confirmation Bias (Part 2)

In the previous chapter, we met the father of all fallacies, the *confirmation bias*. Here are a few examples of it: We are forced to establish beliefs about the world, our lives, the economy, investments, our careers, and more. We deal mostly in assumptions, and the more nebulous these are, the stronger the *confirmation bias*. Whether you go through life believing that "people are inherently good" or "people are inherently bad," you will find daily proof to support your case. Both parties, the philanthropists and the misanthropes, simply filter disconfirming evidence (evidence to the contrary) and focus on the do-gooders and dictators who support their worldviews.

Astrologers and economists operate on the same principle. They utter prophecies so vague that any event can substantiate them: "In the coming weeks you will experience sadness," or "In the medium term, the pressure on the dollar will increase." But what is the medium term? What will cause the dollar to depreciate? And depreciation measured against what—gold,

yen, pesos, wheat, residential property in Manhattan, the average price of a hot dog?

Religious and philosophical beliefs represent an excellent breeding ground for the *confirmation bias*. Here, in soft, spongy terrain, it grows wild and free. For example, worshippers always find evidence for God's existence, even though he never shows himself overtly—except to illiterates in the desert and in isolated mountain villages. It is never to the masses in, say, Frankfurt or New York. Counterarguments are dismissed by the faithful, demonstrating just how powerful the *confirmation bias* is.

No professionals suffer more from the *confirmation bias* than business journalists. Often, they formulate an easy theory, pad it out with two or three pieces of "evidence," and call it a day. For example: "Google is so successful because the company nurtures a culture of creativity." Once this idea is on paper, the journalist corroborates it by mentioning a few other prosperous companies that foster ingenuity. Rarely does the writer seek out disconfirming evidence, which in this instance would be struggling businesses that live and breathe creativity or, conversely, flourishing firms that are utterly uncreative. Both groups have plenty of members, but the journalist simply ignores them. If he or she were to mention just one, the story line would be ruined.

Self-help and get-rich-quick books are further examples of blinkered storytelling. Their shrewd authors collect piles of proof to pump up the most banal of theories, such as "meditation is the key to happiness." Any reader seeking disconfirming evidence does so in vain: Nowhere in these books do we see people who lead fulfilled lives without meditation, or those who, despite meditation, are still sad.

The Internet is particularly fertile ground for the *confirmation bias*. To stay informed, we browse news sites and blogs, forgetting that our favored pages mirror our existing values, be they liberal, conservative, or somewhere in between. Moreover, a lot of sites now tailor content to personal interests and browsing history, causing new and divergent opinions to vanish from the radar altogether. We inevitably land in communities of like-minded people, further reinforcing our convictions—and the *confirmation bias*.

Literary critic Arthur Quiller-Couch had a memorable motto: "Murder your darlings." This was his advice to writers who struggled with cutting

cherished but redundant sentences. Quiller-Couch's appeal is not just for hesitant hacks but for all of us who suffer from the deafening silence of assent. To fight against the *confirmation bias*, try writing down your beliefs —whether in terms of worldview, investments, marriage, health care, diet, career strategies—and set out to find disconfirming evidence. Axing beliefs that feel like old friends is hard work but imperative.

43

Why Watching and Waiting Is Torture

Action Bias

In a penalty situation in soccer, the ball takes less than 0.3 seconds from the player who kicks the ball to the goal. There is not enough time for the goalkeeper to watch the ball's trajectory. He must make a decision before the ball is kicked. Soccer players who take penalty kicks shoot one third of the time at the middle of the goal, one third of the time at the left, and one third of the time at the right. Surely goalkeepers have spotted this, but what do they do? They dive either to the left or to the right. Rarely do they stay standing in the middle—even though roughly a third of all balls land there. Why on earth would they jeopardize saving these penalties? The simple answer: appearance. It looks more impressive and feels less embarrassing to dive to the wrong side than to freeze on the spot and watch the ball sail past. This is the *action bias*: Look active, even if it achieves nothing.

This study comes from the Israeli researcher Michael Bar-Eli, who evaluated hundreds of penalty shoot-outs. But not just goalkeepers fall victim to the *action bias*. Suppose a group of youths exit a nightclub and

begin to argue, shouting at each other and gesturing wildly. The situation is close to escalating into an all-out brawl. The police officers in the area—some young, some more senior—hold back, monitor the scene from a distance, and intervene only when the first casualties appear. If no experienced officers are involved, this situation often ends differently: Young, overzealous officers succumb to the *action bias* and dive in immediately. A study revealed that later intervention, thanks to the calming presence of senior officers, results in fewer casualties.

The *action bias* is accentuated when a situation is new or unclear. When starting out, many investors act like the young, gung ho police officers outside the nightclub: They can't yet judge the stock market so they compensate with a sort of hyperactivity. Of course this is a waste of time. As Charlie Munger sums up his approach to investing: "We've got . . . discipline in avoiding just doing any damn thing just because you can't stand inactivity."

The *action bias* exists even in the most educated circles. If a patient's illness cannot yet be diagnosed with certainty, and doctors must choose between intervening (i.e., prescribing something) or waiting and seeing, they are prone to take action. Such decisions have nothing to do with profiteering, but rather with the human tendency to want to do anything but sit and wait in the face of uncertainty.

So what accounts for this tendency? In our old hunter-gatherer environment (which suited us quite well), action trumped reflection. Lightning-fast reactions were essential to survival; deliberation could be fatal. When our ancestors saw a silhouette appear at the edge of the forest—something that looked a lot like a saber-toothed tiger—they did not take a pew to muse over what it might be. They hit the road—and fast. We are the descendants of these quick responders. Back then, it was better to run away once too often. However, our world today is different; it rewards reflection, even though our instincts may suggest otherwise.

Although we now value contemplation more highly, outright inaction remains a cardinal sin. You get no honor, no medal, no statue with your name on it if you make exactly the right decision by *waiting*—for the good of the company, the state, even humanity. On the other hand, if you demonstrate decisiveness and quick judgment, and the situation improves (though perhaps coincidentally), it's quite possible your boss, or even the

mayor, will shake your hand. Society at large still prefers rash action to a sensible wait-and-see strategy.

In conclusion: In new or shaky circumstances, we feel compelled to do something, anything. Afterward we feel better, even if we have made things worse by acting too quickly or too often. So, though it might not merit a parade in your honor, if a situation is unclear, hold back until you can assess your options. “All of humanity’s problems stem from man’s inability to sit quietly in a room alone,” wrote Blaise Pascal. At home, in his study.