

# The Black Swan

*"Linear relationships are truly the exception; we only focus on them in classrooms and textbooks because they are easier to understand. Yesterday afternoon I tried to take a fresh look around me to catalog what I could see during my day that was linear. I could not find anything, any more than someone hunting for squares or triangles could find them in the rainforest."*

*"We, members of the human variety of primates, have a hunger for rules because we need to reduce the dimension of matters so they can get into our heads. Or, rather sadly, so we can squeeze them into our heads. The more random information is, the greater the dimensionality, and thus the more difficult to summarize. The more you summarize, the more order you put in, the less randomness. Hence the same condition that makes us simplify pushes us to think that the world is less random than it actually is."*

## In a nutshell

We want to make the world seem an orderly place, but the frequency of truly unexpected events should tell us that we do not really know what causes things.

## In a similar vein

David Hume *An Enquiry Concerning Human Understanding* (p 136)

Daniel Kahneman *Thinking, Fast and Slow* (p 148)

Karl Popper *The Logic of Scientific Discovery* (p 238)

Baruch Spinoza *Ethics* (p 286)

Slavoj Žižek *Living in the End Times* (p 306)

# Nassim Nicholas Taleb

Until a black swan was sighted in Western Australia by early explorers, people assumed that swans were white; it was part of the definition of swans that they were white. However, as Nassim Nicholas Taleb points out in this sprawling, brilliant work, all you need is one variation to show up the falsity of your assumptions.

From this simple observation, derived from Hume, Taleb creates an entire theory of events and causality. His definition of a "black swan" event is one that happens against all expectations and has an extreme impact. Most intriguingly, human nature after the fact tries to explain it away, as if it had been predictable.

Our history has become the story of big events that no one expected. No one, for instance, foresaw the severity of the First World War, the rise of Hitler, the sudden collapse of the Soviet bloc, the spread of the internet, or the terrorist attacks on 9/11. No one foresees particular ideas, fashions, or art genres coming into vogue. And yet, Taleb points out,

*"A small number of Black Swans explain almost everything in our world, from the success of ideas and religions, to the dynamics of historical events, to elements of our own personal lives."*

Moreover, the effect of black swans is increasing because the world is becoming more complicated. The combination of low predictability and large impact causes a problem for the human mind, because our brain is built to focus on the known and visible.

Taleb imagines two places to express our ways of seeing the world. "Mediocristan" is a state in which there is an equal relation between effort and result, where the future can be predicted, and where most things fall into a wide band of averages. "Extremistan" is an inherently unstable, unpredictable, winner-takes-all kind of place. It is the latter in which we actually live, and accepting that fact is the first step to thriving in it.

As a “skeptical empiricist,” Taleb’s heroes are David Hume, Sextus Empiricus, and Karl Popper. He is very critical of the kind of philosophy focused on language that fills academia. While interesting, it has nothing to do with the real world, he says, a world in which people have to live with uncertainty.

What we do not know...

The black swan effect has made a mockery of attempts to curb uncertainty, whether in the form of fancy financial algorithms that purport to eliminate risk, or the predictions of social scientists. Think about your own life: how many things, from meeting your spouse to the profession you entered, came according to plan or on schedule? Who expected that you would be fired, exiled, enriched, or impoverished? Taleb observes that “Black Swan logic makes *what you don’t know* far more relevant than what you do know,” because it is the unexpected that shapes our lives. And if that is so, why do we keep believing that things will go as they have done in the past? Our mind, he says, suffers from a “triple of opacity”:

- ❖ False understanding – we believe that we understand more of what is going on in the world than we actually do.
- ❖ Retrospective distortion – we ascribe meaning to events after they have happened, creating a story. This is what we call “history.”
- ❖ Overvaluing facts, statistics, and categories – we should not fool ourselves that they can predict the future, or even give us an accurate picture of reality.

We live according to rules for what we consider normal, but normality is rarely the test of anything. When something major happens out of the blue, we are keen to discount its rarity and unexpectedness. We want to be able to explain it away. Yet we do not really know a person until we see how they act in an extreme situation, and neither can we assess the danger of a criminal based on what he does on a regular day. It is the rare or unusual event that often defines a situation, not whatever is “normal.”

It is not merely that the average person does not see what is going on, the so-called experts and people in charge do not either. Taleb’s grandfather was a minister in the Lebanese government during its civil war, but claims that he knew no more about what was happening than his driver. He does not hold back from pointing out the “epistemic arrogance of the human race,” including CEOs who believe that their company’s success is down to them and not a million other factors, including blind luck. Such fantasies are encouraged in business schools, he notes.

Taleb comments that no one expected the rise of the world religion. Christian scholars are baffled by the lack of mention of their faith in its early days by Roman chronicles; equally, who could have foreseen the rapid diffusion of Islam? The historian Paul Veyne noted that religions spread “like bestsellers.” Nevertheless, in our mind they quickly become part of the scenery – we normalize them. The same trait means that we will be shocked by the sudden rise of the next new religion.

To illustrate his point about extreme events, Taleb asks us to consider farm turkey. The turkey will look on the farmer in very kindly terms, since every day he provides an abundance of food, plus shelter. But its experience thus far is totally misleading, because one day, totally unexpectedly, it is slaughtered. The moral is that, despite what we have been told, the past generally tells us nothing about the future; the apparent “normalness” of today is “viciously misleading.” E.J. Smith, a ship’s captain, said in 1907: “I never saw a wreck and have never been wrecked nor was I ever in any predicament that threatened to end in disaster of any sort.” Five years later, the vessel under his helm was the *Titanic*.

The human brain is wired to make general assumptions from experience. The problem is that in real life, a black swan can come along after a whole existence of seeing only white ones. It is better to rest in the fact of how little we know, and also be aware of the faults in our reasoning; the point is not to be able to predict black swan events, only to be a little more mentally prepared. It is human nature to react to big, unforeseen events with small, focused adaptations that either try to prevent an event happening again (if it was bad) or to make it happen it again (if it was good). But what we should be doing is peering into what we do not know and why we do not know it. Humans think much less than we believe we do, Taleb says; most of our action is instinctive. This makes us less likely to understand black swan events, because we are always lost in the details, only reacting. Everything comes from unknown factors, while “all the while we spend our time engaged in small talk, focusing on the known, and the repeated.”

...and how to get around it

We like certainty, but the wise see that certainty is elusive, that “understanding how to act under conditions of incomplete information is the highest and most urgent human pursuit.”

Taleb notes that a “successions of anecdotes selected to fit a story do not constitute evidence.” Instead of trying to confirm our existing ideas, we should, as Popper taught, be trying to falsify them. Only then might we get a semi-accurate sense of the truth. When making a financial bet, the best investors,

like George Soros, try to find instances where their assumption is wrong. Taleb sees this “ability to look at the world without the need to find signs that stroke one’s ego” as genuine self-confidence. He admits:

*“It takes considerable effort to see facts ... while withholding judgment and resisting explanations. And this theorizing disease is rarely under our control: it is largely anatomical, part of our biology, so fighting it requires fighting one’s own self.”*

That we are like this is understandable. We have to make rules and oversimplify in order to put endless information into some order in our heads. Myths and stories enable us to make sense of our world. Science is meant to be different, but instead we use science to organize things for our own benefit. Seen in this context, knowledge is *therapy*, doing little more than making us feel better. Scientists and academics of all stripes are guilty of this, and of course we see examples in the media every day. If a candidate loses an election, “causes” will be trotted out. Whether or not they are correct is of little import; what does matter is that a narrative is quickly put in place for why an event happened. It would be shocking for the newsreader to say, “Smith lost the election, but we actually have no idea why.”

Not only do we not know stuff, we totally overestimate the extent of our knowledge, and how efficient and effective we are. This overconfidence seems to be hardwired. Taleb mentions experiments with students who have to estimate the time needed to complete their assignment. Broken into two groups, the optimistic ones thought they could deliver in 26 days; the pessimists promised that they would deliver in 47 days. What was the actual average time for completion? 56 days. (Taleb’s own manuscript was delivered to his publisher 15 months late.)

We are like this because we “tunnel” mentally, not taking account of the “unexpected” things that take us off course, while of course the unexpected should be incorporated into calculations for the achievement of anything.

#### Find comments

Taleb’s assertion that “almost no discovery, no technologies of note, came from design and planning – they were just Black Swans” is easily argued against. For example, DuPont spent years developing Nylon, knowing how valuable the material would be; and most successful medicines, though they often stem from chance discoveries, need years of development and planning before being brought to market. Yet Taleb is right that organizations and individuals need to focus more on tinkering than on planning, in the probability that, through constant trial and error, the chances are increased of creating a

positive black swan – an idea that sweeps all before it, a product that becomes the market leader. The other tip Taleb offers is to have patience:

*“[E]arthquakes last minutes, 9/11 lasted hours, but historical changes and technological implementations are Black Swans that can take decades. In general, positive Black Swans take time to show their effect while negative ones happen very quickly.”*

Building a great enterprise will occupy many years, and though we can never know what the future holds, the long view allows us to take obstacles and reversals in our stride.

*The Black Swan* itself is a microcosm of Taleb’s argument about complexity: it has almost too much information, too many startling challenges to our thinking, to be susceptible to a neat summary. It is best to read it yourself, if only for the many entertaining digressions and examples that there is no room for here. Summarization takes out the possibility of random discovery, and it is such discoveries that make all the difference in our life and career.

Taleb is famed for having predicted, in the original edition of the book, the 2008 financial crisis, when he wrote about the fragility of the large banks, suggesting that if one collapsed they could all go, as they were so entwined with each other. In the second edition (2010) he elaborates on this concept of fragility, noting that few lessons have been learned. His critique of mega-sized companies and institutions is that they can get away with much more than smaller ones, and so their risks tend to be hidden. This makes them more, not less, vulnerable to black swan events.

#### Nassim Nicholas Taleb

*Taleb was born in Amioun, Lebanon, in 1960. His parents had French citizenship and he attended a French school. During the Lebanese Civil War, which began in 1975, he studied for several years in the basement of his home.*

*A former derivatives trader turned mathematical analyst specializing in problems of probability and uncertainty, he held positions with major banks such as Credit Suisse First Boston, UBS, and BNP-Paribas. Taleb is currently Distinguished Professor of Risk Engineering at New York University’s Polytechnic Institute and is also a consultant to Universa, a hedge fund, and the IMF. His degrees include an MBA from the Wharton School, University of Pennsylvania, and a PhD from the University of Paris.*

*Other books include Fooled by Randomness (2001), Dynamic Hedging (1997), The Bed of Procrustes (2010), and Antifragile: Things That Gain from Disorder (2012).*

