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PART A : ARTICLE

BLACK SWAN

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What is a Black Swan

An event qualifies as a black swan if three conditions are fulfilled:

1. If is an outlier, outside the realm of normal human experience.
2. It has an extreme impact.
3. It becomes explainable only after the fact. Humans tend to believe that they could see it coming.

Some examples of black swan are the outbreak of World War 1, 9/11 and Black Monday.

The black swan problem is also referred to as “the problem of induction”. The basic idea is that there are great uncertainties in forecasting the future on the basis of our knowledge of the past . How can we figure out something which is infinite and unknown , based on something that is finite and known ?

The Implication of Black Swan Blindness

Nassim Taleb talks about five issues related to the Black Swan that stem from our blindness to it:

1. **The error of confirmation:** As humans we are prone to draw conclusions from what we know to what we do not know.

2. **The narrative fallacy:** Stories essentially dictate the way we think. The human tendency to be suckered by stories is referred to by Taleb as the narrative fallacy. As Taleb says, “The fallacy is associated with our vulnerability to over-interpretation and our predilection for compact stories over raw truths. It severely distorts our mental representations of the world”.

3. **We are not programmed for black swans:** Humans tend to believe in linear progression. We think that output is linearly related to input. We are not wonted to think of Black Swans.

4. **The distortion of silent evidence:** History tends to hide Black Swans for us by filtering the reality that is presented to us.

5. **Tunneling:** We tend to focus too much on what we know and overlook what we don't know. Relying too much on what we know can be devastating in the real world.

Mediocristan Vs Extremistan

Mediocristan is a land devoid of black swans. Mediocristan is the land of the average where the first 100 observations of a variable will give a fairly reliable basis for expecting what you might see, for say, the next 500 observations. The fundamental law of Mediocristan is that when your sample size is large, no single instance will significantly change the average value. For example, weight, height and road accidents are matters that belong to Mediocristan.

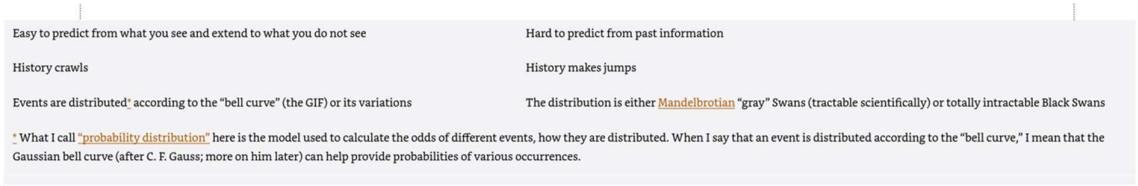
In Extremistan, Black Swans are present. So, the first 100 observations of a variable may not be a fairly reliable bases for expecting what you might see, say for the next 500 observations. Most human made or social matters such as wealth and income belong to Extremistan. For example, the average wealth of a group of 100 persons or even 1000 persons would be significantly influenced by the inclusion or exclusion of the wealth of a person like Bill Gates.

In Mediocristan, it is possible to make predictions reliably.In Extremistan, it is much more difficult, or well nigh impossible. The problem arises because in general we think we are living in Mediocristan but almost all of the matters that we try to forecast are matters of Extremistan.

In the table given below Nassim Taleb contrasts extremistan with mediocristan.

TABLE 1

Mediocristan	*Extremistan*
Nonscalable	Scalable
Mild or type 1 randomness	Wild (even superwild) or type 2 randomness
The most typical member is mediocre	The most "typical" is either giant or dwarf, i.e., there is no typical member
Winners get a small segment of the total pie	Winner-take-almost-all effects
Example: audience of an opera singer before the gramophone	Today's audience for an artist
More likely to be found in our ancestral environment	More likely to be found in our modern environment
Impervious to the Black Swan	Vulnerable to the Black Swan
Subject to gravity	There are no physical constraints on what a number can be
Corresponds (generally) to physical quantities, i.e., height	Corresponds to numbers, say, wealth
As close to utopian equality as reality can spontaneously deliver	Dominated by extreme winner-take-all inequality
Total is not determined by a single instance or observation	Total will be determined by a small number of extreme events
When you observe for a while you can get to know what's going on	It takes a long time to know what's going on
Tyranny of the collective	Tyranny of the accidental



Easy to predict from what you see and extend to what you do not see	Hard to predict from past information
History crawls	History makes jumps
Events are distributed* according to the "bell curve" (the GIF) or its variations	The distribution is either Mandelbrotian "gray" Swans (tractable scientifically) or totally intractable Black Swans

* What I call "probability distribution" here is the model used to calculate the odds of different events, how they are distributed. When I say that an event is distributed according to the "bell curve," I mean that the Gaussian bell curve (after C. F. Gauss; more on him later) can help provide probabilities of various occurrences.

Gaussian Schmaussian

The bell curve or normal distribution, also called the Gussian distribution, is commonly used tool for risk management by regulators and central banker among others. In a normal distribution, the farther the value of a variable from its expected value, the smaller is its probability of occurrence. The normal distribution is an excellent tool in the land of Mediocristan. However, it does not work with variables from Extremistan. For example, if stock market returns are modeled as normally distributed, an occurrence like the Black Monday of 1987, when the market fell by nearly 23% in a single day, would clearly be an outlier because according to the normal distribution such an event would happen once in several billion lifetimes. Many investors were bankrupted.

So using normal distribution can be misleading in making decisions in matters from Extremistan. And this seems to apply pretty much to all human-made social matters.

What can we do then? We can use what Nassim Taleb calls Mandelbrotian randomness instead of assuming that everything conforms to normal distribution. Mandelbrotian randomness does not assume that deviations from the mean become progressively much rarer. Instead, it suggests, if we talk about the returns in the stock market, that the probability of seeing a return of -10% not significantly lower than the probability of seeing a return of -5% . If we had made that assumption on the Friday before the Black Monday, a decline of -22.6% would have been considered a possibility and some protective measure against that could have been taken. By replacing normal distribution with Mandelbrotian distribution, we can turn some Black Swans into Grey Swans. Grey Swans are known unknowns rather than unknown unknows (Black Swans). They are better to deal with because we can least adapt our decision-making to something that we don't know about.

How to Act as an Investor in an Environment of Black Swans:

In a world dominated by Black Swans where we are vulnerable to the error of confirmation, the narrative fallacy and tunnelling we have to be wary in using the normal distribution.

What then should we do? Taleb suggests two different approaches :

1. **The hyper- conservative and hyper aggressive approach** Put 85% of your money in something hyper-conservative like Treasury bills and the rest of the money in something speculative, like options or angel investments. With such a portfolio your risk is limited because of the hyper-conservative segment of the portfolio and at the same time you have the possibility of hitting a positive Black Swan with the hyper – aggressive segment of your portfolio. Taleb calls this as a convex combination.

2. **The Speculative insured portfolio approach** The second option is to have a very speculative portfolio, which is insured against losses that are greater than, for example, 15% you can take an insurance cover or use stop losses at -15% or take multiple bets with small parts of your equity or buy put options. This strategy too is convex as it limits your risk but gives the upside of positive Black Swans.

PART B : SNIPPETS

Peter Lynch on the Advantage of Being a Small Investor

"I have been hearing that the small investor has no chance in this dangerous environment where there are 50,000 professional stock pickers who dominate the show and the small investor ought to get out. From where I sit, I'd say that the 50,000 stock pickers are usually right, but only for the last 20 percent of a typical stock move. It's that last 20 percent that Wall Street studies for, clamours for, and then lines up for – all the while with a sharp eye on the exits. The idea is to make a quick gain and then stampede out of the door. Small investors don't have to fight this mob. They can calmly walk in the entrance when there's a crowd at the exit, and walk out the exit when there's crowd at the entrance."

The Prisoner's Dilemma

The prisoner's dilemma represents the difficulty of achieving the best outcome when there are obstacles to cooperation. Consider two prisoners A and B who have been arrested for a crime. They are kept apart from each other and have been offered the same deal as shown in the following matrix:

		B	
		Incriminates	**Does not Incriminate**
A	**Incriminates**	A & B receive light punishment	A receives no punishment but B receives severe punishment
	Does not Incriminate	A receives severe punishment but B receives no punishment	A & B receive no punishment

Clearly the best course of action for both A and B is to not to incriminate each other. But if they cannot cooporate the choice becomes difficult.

Reversion to the Mean

According to Galton, regression or reversion to the mean "is the tendency of the ideal filial type to depart from the parent type, reverting to what may be roughly and perhaps fairly described as the average ancestral type."

Why is forecasting so difficult, if Galton's Law is immutable. The difficulty stems from three sources:

1. Reversion to the mean does not always happen quickly. Undervaluation and overvaluation can persist for extended periods.
2. In fluid environments (like markets), the mean itself may be unstable. In physical systems the mean is stable, but markets are biological systems.
3. Due to high volatility and irregular deviations stock prices do not correct neatly or come to rest easily on top of the mean.

PART C : WIT AND WISDOM

HUMOUR

Alaska

A man living at the border of Canada and Alaska asked a surveyor to find out where his house is located actually. The surveyor, after finishing his work, declared that the house was in Canada. Relieved, the man said, "Thank God, I will no longer have to endure the terrible Alaskan winters."

Transfer

A weatherman working in London had great difficulty in predicting the London weather. So he applied for transfer saying, "The weather in London does not suit him."

WISE SAWS

- The difficult part in an argument is not to defend one's opinion but rather to know it. : Andre Maurois.
- It takes less time to do a thing right than to explain why you did it wrong. :H. W. Long fellow