Unknown Unknowns

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I have just finished reading **The Black Swan: The Impact of the Highly Improbable** by Nassim Taleb. It is one of the most intelligent books I have read. According to Taleb, a Black Swan is an event with the following 3 attributes:

1. It is an outlier
2. It carries an extreme impact
3. It seems predictable and is rationalized in hindsight

Examples that come to mind are: 9/11 attacks, Fukushima disaster, stock market crash of 1987, fall of the Soviet Union and the 1998 Russian financial crisis which led to the implosion of the hedge fund Long Term Capital Management. History does not crawl, it jumps.

What is interesting is that we are constantly trying to predict the future despite our poor track record. Many financial institutions produce booklets every year-end called 'Outlook for 200X'. You will be surprised how their previous forecasts fared *after* they were formulated.

Thanksgiving Turkey

The essence of the book can be summed up in the graph below. The graph depicts the traps built into any kind of knowledge gained from observation.

FIGURE 1: ONE THOUSAND AND ONE DAYS OF HISTORY
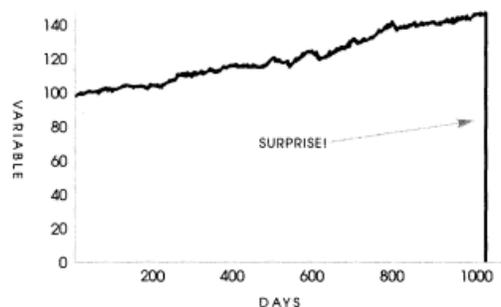
A turkey before and after Thanksgiving. The history of a process over a thousand days tells you nothing about what is to happen next. This naïve projection of the future from the past can be applied to anything.

Source: The Black Swan by Nassim Taleb

Taleb:

Consider a turkey that is fed every day. Every single feeding will firm up the bird's belief that it is the general rule of life to be fed every day by friendly members of the human race 'looking out for its best interests,' as a politician would say. On the afternoon of the Wednesday before Thanksgiving, something unexpected will happen to the turkey. It will incur a revision of belief.
[…]
Its confidence increased as the number of friendly feedings grew, and it felt increasingly safe even though the slaughter was more and more imminent. Consider that the feeling of safety reached its maximum when the risk was at the highest!
[…]
Something has worked well in the past, until – well, it unexpectedly no longer does, and what we have learned from the past turns out to be at best irrelevant or false, at worst viciously misleading.

Below are some of the lessons that I drew from the book:

- Practice diversification in your investments
- Focus on what is 'important' and 'knowable'
- Seek investments with optionality/asymmetric payoffs – use pennies to make dollars
- Build robustness to negative Black Swans and exploit positive Black Swans (in domains such as scientific discovery and venture capital investments there is a disproportionate payoff from the unknown)

There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know.

-   Donald Rumsfeld