

Black swan theory

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For Taleb's book on the subject, see [The Black Swan](#).

In [Nassim Nicholas Taleb's](#) definition, a **black swan** is a large-impact, hard-to-predict, and rare event beyond the realm of normal expectations. Much of scientific discoveries for him are black swans—"undirected" and unpredicted. An event often referred to as a "black swan" is the [September 11, 2001 attacks](#).^[1]

The term *black swan* comes from the ancient [Western](#) conception that all [swans](#) were [white](#) in color. In that context, a [black swan](#) was a [metaphor](#) for something that could not exist. The [17th Century discovery of black swans](#) in [Australia](#) metamorphosed the term to connote that the perceived impossibility actually came to pass.

[Karl Popper](#) first used the black swan narrative to discuss falsification, a fact that Taleb acknowledges in his work.

[\[edit\]](#) The high impact of the unexpected

Before Taleb, those who dealt with the notion of improbable, like [Hume](#), [Mill](#) and [Popper](#), focused on a problem in [logic](#), in the limits of making general statements from specific observations. Taleb's Black Swan has a central and unique attribute: **The high impact**. His claim is that *almost all consequential events in history come from the unexpected*—while humans convince themselves that these events are explainable in [hindsight](#).

One problem, labeled the [Ludic fallacy](#) by Taleb, is not enough 'bottom up' and too much reliance on generalizations (called Platonicity). That is, the [unexpected](#) is thought to be minimized through a too strong reliance on [large numbers](#) of observations (hence, the title of the book, relating to the fallacy of "all swans are white"), which assumes the nice properties of the [Bell Curve](#). Taleb notes that other functions could very well be in order, such as the [fractal](#), [power law](#), or scalable distributions; the awareness of these might help to temper expectations.^[2] Taleb also argues for the use of [counterfactual reasoning](#) when considering risk.^[3]

[\[edit\]](#) See also

[List of cognitive biases](#)

[Quasi-empiricism in mathematics](#)

[\[edit\]](#) References

1. [^] Nassim Nicholas Taleb, Edge, "[Learning to expect the unexpected](#)"
2. [^] Brendan Nyhan, Columbia Univ, "[Statistical Modeling, Causal Inference, and Social Science](#)"
3. [^] Nassim Nicholas Taleb, NY Times, "[The Black Swan: The Impact of the Highly Improbable](#)" (First Chapter)

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