ANTIFRAGILE: Things That Gain From Disorder

by Nassim Nicholas Taleb

Overview

Fragile things break easily (like fine china). Robust systems are tough and enduring (like a bowling ball). "Antifragility", however, includes systems or objects which actually benefit from disorder. For example, when a muscle is put under some small amount of stress and variation, it grows. This book discusses the theoretical concept of antifragility in detail and then discusses practical applications. For example: taking advantage of the natural variation in Nature by repeatedly identifying & exploiting positive random options.

Book 1. The Antifragile: An Introduction

There has not been a sufficient word for 'the opposite of fragile'. One could say that 'robust' or 'unbreakable' fits, but those are neutral words. Antifragility is *actively* seeking to be mishandled, because it benefits from this volatility. Mathematically, it's negative fragility.

- **Fragile:** Benefits *most* from being unharmed.
- **Robust:** Neutral from being unharmed.
- **Antifragile:** Benefits *least* from being unharmed.

Hormesis is *"when a small dose of a harmful substance is actually beneficial for the organism"*. Depriving systems of vital stressors is not beneficial, as innovation is borne via situations of necessity. Progress is hindered when one innovates from a position of comfort or predictability. Natural systems use redundancy as a form of risk management (like our extra kidneys).

*"The excess energy release from overreaction to setbacks is what **innovates**!"*

- **Information** is particularly antifragile; when you attempt to refute (or "harm") information, further data is gleaned from such attempts at "harm".
- **Reputation** works similarly. If you can survive an attack, people will be left to wonder why you were attacked in the first place, what power you possessed; this will put you on the map.

Antifragility is what separates life from inanimate objects which undergo material fatigue or break under stress. Yet some things begin as man-made, but grow to develop complex interdependency. A washing machine will not produce any long-lasting effects if broken. A large corporation, however, will cause ripple effects across multiple countries if suddenly shut down. Complex systems convey information throughout their interacting parts via stressors.

Equilibrium refers to objects which behave like a pendulum, responding to deviations in one direction by adjusting to the other direction to compensate and attempt to return stability. Yet organisms and other natural systems have been proven to exist *outside* a state of equilibrium. For these systems constantly outside of equilibrium, deprivation of chaos may actually prove *harmful* to their state of normalcy. This is because their "normalcy" is not in equilibrium; they *thrive* in the presence of volatility and stressors.

Natural organisms are composed of subunits, and themselves may be subunits of larger collectives. Some parts may need to be fragile in order for the whole to be antifragile, and vice versa. Fragility is layered and transferred throughout the different systems and parts. An example is how others benefit from the *error* of an individual rather than from the individual himself.

*"Nature likes diversity **between** organisms rather than diversity **within** an immortal organism."*

Fragility depends on things going according to a certain plan, and treats any deviations from this plan as harmful. Yet antifragility *craves* variation, and cares little of the spectrum of possible outcomes (since most outcomes will be helpful for the whole anyway).

*"If every trial provides you with information about what does not work, you start zooming in on a solution – so every attempt becomes more valuable, more like an **expense** than an **error**."*