

Shifting Paradigms in a Shifting World

Recognizing and Overcoming Cognitive Biases

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20+ years of experience in the engineering field

- Surveying
- Land Development
- Public Sector
- Consulting Engineer
- Marketing Engineer

8 years in the pipe and precast industry



**IT'S GAME
TIME**

The Black Swan Theory

Why we can't see what's right in front of us



The Black Swan

The Impact of the
Highly Improbable

NASSIM NICHOLAS TALEB

Summary by ReadinGraphics

The Black Swan

Book Summary

*"This combination of low predictability
and large impact makes the Black
Swan a great puzzle."*

- Nassim Nicholas Taleb



READINGGRAPHICS

Ideas Come Alive



Black Swan Theory – Nassim Taleb

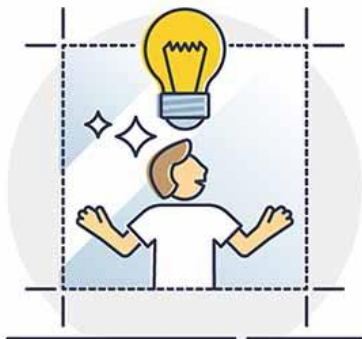
1. Disproportionate role of high-profile, hard-to-predict, and rare events that are beyond the realm of normal expectations in history, science, finance, and technology.
2. Non-computability of the probability of consequential rare events using scientific methods (owing to the very nature of small probabilities).
3. **Psychological biases that blind people, both individually and collectively, to uncertainty and a rare event's massive role in historical affairs.**







COGNITIVE BIASES



**CONFIRMATION
BIAS**



**LOSS
AVERSION**



**GAMBLER'S
FALLACY**



**AVAILABILITY
CASCADE**



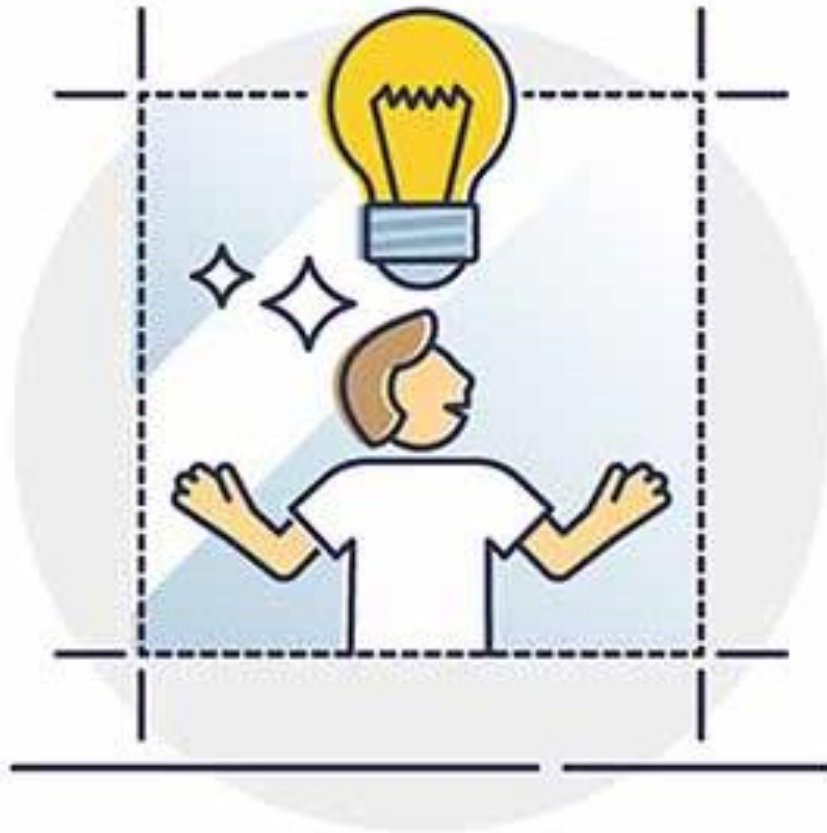
**FRAMING
EFFECT**



**BANDWAGON
EFFECT**



**DUNNING-KRUGER
EFFECT**



CONFIRMATION BIAS



LOSS AVERSION



GAMBLER'S FALLACY



AVAILABILITY CASCADE



FRAMING EFFECT



BANDWAGON EFFECT



DUNNING-KRUGER EFFECT

unique radical
success destination significant disrupt
solution plan leap motivation
future fundamental communicate different business
sudden scientific distrupt change strategy
metaphor marketing evolve improvement technology
dissimilar computing rethink adaptation way buzzword
creativity inspiration revolution diverging
achievement solve motivate
adapt innovate challenge message drastic
idea

WHAT IS A PARADIGM SHIFT?

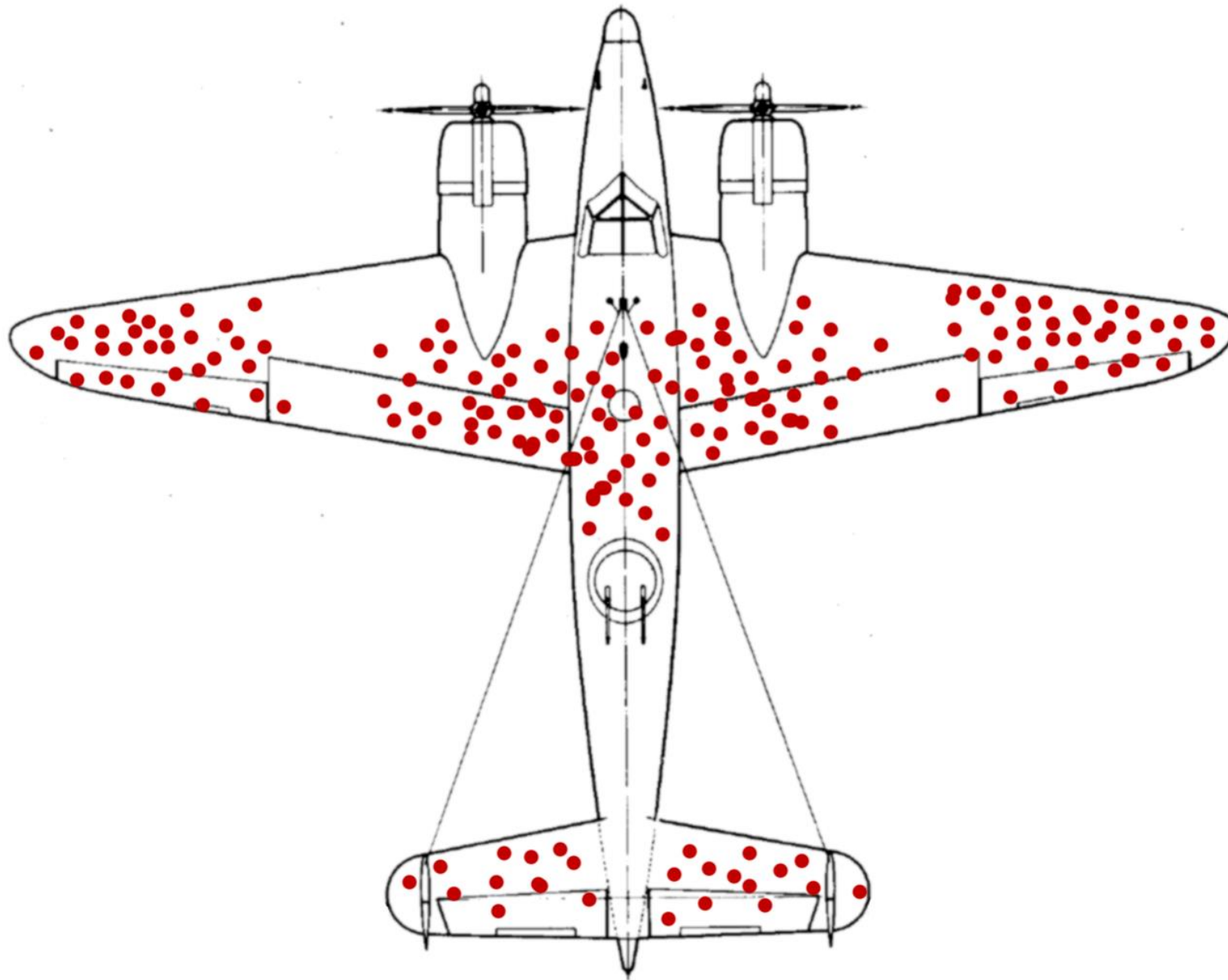
paradigm shift/'perə,dīm SHift/noun:

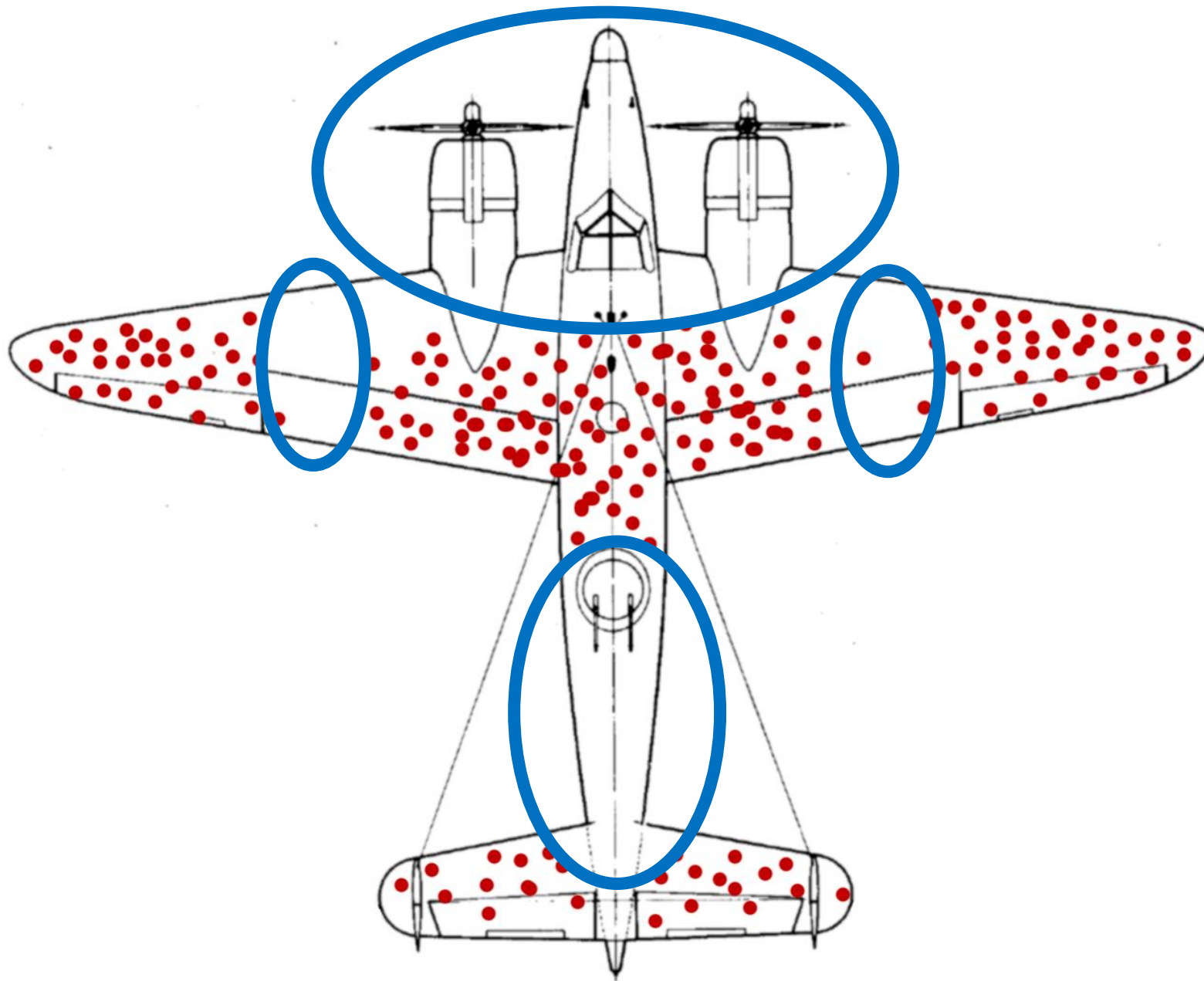
1. a fundamental change in approach or underlying assumptions
2. an important change that happens when the usual way of thinking about or doing something is replaced by a new and different way.

DEFINITION





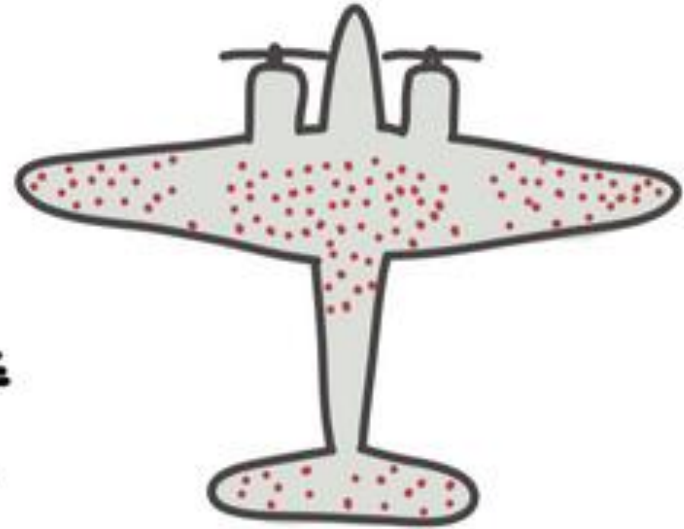




“The extra armor belonged not on the part of the plane that could survive a lot of bullets, but to the part of the plane that couldn't.”

SURVIVORSHIP BIAS

A FOCUS ON THE EXAMPLES THAT SURVIVE SOME PROCESS WHILE ACCIDENTALLY OVERLOOKING THOSE THAT DID NOT SURVIVE — BECAUSE THEY ARE NO LONGER VISIBLE.





“No one wants to work anymore.”

Cognitive Bias Case Study #1

WE ARE SHORT STAFFED
PLEASE BE PATIENT WITH THE STAFF
THAT DID SHOW UP

NO ONE WANTS TO WORK ANYMORE



Thank You
Dairy Queen Management

12\$ hr. Paid EVERY WEEK!

What We See

Cognitive Bias Case Study #1

What We See:

- Employee retention is near impossible
- Offering competitive salaries
- Consistent with the past methods

What We Assume

Cognitive Bias Case Study #1

What We Assume:

- Young people don't work as hard and are unreliable
- We are doing everything we can
- Past experiences dictate future occurrences
- People are lazy and want handouts
- “No one wants to work anymore.”

What We Know

Cognitive Bias Case Study #1

What We Know:

- February 2020 Unemployment Rate: 3.50%
- December 2022 Unemployment Rate: 3.50%
- Younger generations have different values than previous generations
- Doing what we've always done is not working

Messaging: “Sustainable & Environmentally Friendly.”

Cognitive Bias Case Study #2

Search adspipe.com



Sustainability

Pipe

Water Management
Solutions

Markets

Resources
& Tools

Start a Project

Home / Sustainability

Sustainability

Water

Recycling

Community: ADS Foundation

Environmental Stewardship

Operational Excellence

Safety

Transportation Efficiency



Give Feedback

What We See

Cognitive Bias Case Study #2

What We See:

- Buzz words
 - “sustainable”
 - “environmentally friendly”
 - “recycled resin”
- Pictures of clean water with no plastic in it
- Company concerned with the environment

What We Assume

Cognitive Bias Case Study #2

What We Assume:

- Product is sustainable and environmentally friendly
- Recycling plastic is a good thing
- Choosing recycled resins makes us environmentally conscious

What We Know

Cognitive Bias Case Study #2

What We Know:

- Plastic manufacturing process
- Microplastic issues
- Recycled resins vs. virgin resins
- Messaging matters

What We Can Do

10 Tips to Overcome Cognitive Biases

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1. Be aware and acknowledge biases
2. Consider current factors that may be influencing your decision
3. Reflect on the past

10 Tips to Overcome Cognitive Biases

4. Be curious

5. Strive for a growth mindset

6. Identify what makes you uncomfortable

10 Tips to Overcome Cognitive Biases

7. Embrace the opposite
8. Seek multiple perspectives
9. Look for disconfirming evidence
10. Practice intellectual humility

Takeaways

- Cognitive biases and the Black Swan
- Discuss examples of biases
- Ways to shift our paradigms

For more information:

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10 Tips to Overcome Cognitive Biases

1. **Be aware and acknowledge biases**
2. **Consider current factors that may be influencing your decision**
3. **Reflect on the past**
4. **Be curious**
5. **Strive for a growth mindset**
6. **Identify what makes you uncomfortable**
7. **Embrace the opposite**
8. **Seek multiple perspectives**
9. **Look for disconfirming evidence**
10. **Practice intellectual humility**