

THE BIG IDEAS

Black Box Thinking

What is it?

50 lbs for an A

vs. Perfect piece of pottery.

Marginal Gains

--> Extraordinary gains.

2,003 + 50,000

= Beckham's magic formula.

Cognitive Dissonance

+ Galileo.

Pre-Mortems

+ Prospective hindsight.

Cumulative Adaptation

It's incalculable potency.

"A progressive attitude to failure turns out to be a cornerstone of success for any institution."

~ Matthew Syed

Black Box Thinking

Why Most People Never Learn from Their Mistakes—But Some Do

BY MATTHEW SYED · PORTFOLIO © 2015 · 336 PAGES

"In this book we will examine how we respond to failure, as individuals, as businesses, as societies. How do we deal with it, and learn from it? How do we react when something has gone wrong, whether because of a slip, a lapse, an error of commission or omission, or a collective failure...? ...

The purpose of this book is to offer a radically different perspective. It will argue that we need to redefine our relationship with failure, as individuals, as organizations, and as societies. This is the most important step on the road to a high-performance revolution: increasing the speed of development in human activity and transforming those areas that have been left behind. Only by redefining failure will we unleash progress, creativity, and resilience."

~ Matthew Syed from *Black Box Thinking*

Failure.

Some of us lean into it and learn as much as we can from it, and some of us prefer to avoid thinking about it and/or pretend it never happened.

As you may guess, one approach leads to dramatically better performance over the long run. (Hint: Seeing failure as feedback + learning opportunities is a very wise idea.)

This book is all about, as the sub-title suggests, *"Why Most People Never Learn from Their Mistakes—But Some Do."*

It's a fascinating read. Matthew is a brilliant, award-winning writer who brings the wisdom to life via great story telling. (To put it in perspective, I read this and his other book [Bounce](#) in < 72 hours—*Black Box* on a Friday + a little bit of Saturday and [Bounce](#) on Sunday.)

The book is geared more toward high-level concepts and organizational applications than individual self-help per se, but it's packed with Big Ideas (get a copy [here](#)) and I'm excited to focus on highlighting a handful of my favorites we can apply today.

So, let's jump straight in!

WHAT IS BLACK BOX THINKING?

"This, then, is what we might call "black box thinking." For organizations beyond aviation, it is not about creating a literal black box; rather, it is about the willingness and tenacity to investigate the lessons that often exist when we fail, but which we rarely exploit. It is about creating systems and cultures that enable organizations to learn from errors, rather than being threatened by them."

Matthew kicks the book off by juxtaposing two industries that have completely different approaches to failure: Aviation and health care.

We'll start with the aviation industry.

" Learning from mistakes is not a drain on resources; it is the most effective way of safeguarding resources- and lives."

~ Matthew Syed

We all know that every plane has a black box. In the event of a tragic accident, investigators painstakingly go through all the data they can find and try to figure out precisely what went wrong so they can prevent another accident like it from ever happening again.

It's an incredibly powerful approach that has led to an incredible level of safety. Get this: Out of every 2.4 million (!) flights there's only one accident. (WOW.)

Now, juxtapose that with the health care industry that, unfortunately, does pretty much the opposite in response to failure. Rather than open up the "black box" on what went wrong, as an industry, they tend to write failure off as "just one of those things" "that happens."

The consequences of that?

Well, did you know that there are 400,000 (!!!) preventable deaths associated with preventable harm in the US alone?

That's a staggering number, placing *"preventable medical care in hospitals as the third biggest killer in the United States—behind only heart disease and cancer."*

(Think about that for a moment. As Matthew tells us, that's the equivalent of two jumbo jets falling out of the sky every 24 hours.)

Lesson: We want to engage in Black Box Thinking.

50 LBS FOR AN A

" Systems that do not engage with failure struggle to learn."

~ Matthew Syed

"In their book *Art and Fear* David Bayles and Ted Orland tell the story of a ceramics teacher who announced on the opening day of class that he was dividing the students into two groups. Half were told that they would be graded on quantity. On the final day of the term, the teacher said he would come to class with some scales and weigh the pots they had made. They would get an 'A' for 50 lbs of pots, a 'B' for 40 lbs, and so on. The other half would be graded on quality. They just had to bring along their one, perfect pot.

The results were emphatic: the works of highest quality were all produced by the group graded for quantity. As Bayles and Orland put it: 'It seems that while the 'quantity' group was busily churning out piles of work—and learning from their mistakes—the 'quality' group had sat theorizing about perfection, and in the end had little more to show for their efforts than grandiose theories and a pile of dead clay.'

Matthew shares this story in the context of a discussion on perfectionism.

He tells us there are two main fallacies regarding perfectionism.

First, we think we're somehow going to figure out the perfect solution in the comfort of our bedroom or ivory towers—mapping it all out **perfectly** then bringing it to the world.

Next, we're so afraid of failure and so unwilling to use setbacks as learning opportunities that we never actually even fail. As he says, *"You are so worried about messing up that you never even get on the field of play."*

Neither one of those approaches are particularly helpful.

We'd be much better off to crank out 50 lbs of pottery than to try to create the **perfect** piece.

In my [interview](#) with [Grant Cardone](#) he said basically the same thing: Crank out so many reps of something that you HAVE to get better.

Which student are *you*?

50 lbs of hustle or the perfect piece?

P.S. Matthew shares this as well: “Babineaux and Krumboltz, the two psychologists, have some advice for those who are prone to the curse of perfectionism. It involves stating the following mantras: ‘If I want to be a great musician, I must first play a lot of bad music.’ ‘If I want to become a great tennis player, I must first lose lots of tennis games.’ ‘If I want to become a top commercial architect known for energy-efficient, minimalist designs, I must first design inefficient, clunky buildings.’”

MARGINAL GAINS —> EXTRAORDINARY GAINS

“Every error, every flaw, every failure, however small, is a marginal gain in disguise. This information is regarded not as a threat but as an opportunity.”

~ Matthew Syed

“His [Sir David Brailsford, general manager of Team Sky] answer was clear: ‘It is about marginal gains,’ he said. ‘The approach comes from the idea that if you break down a big goal into small parts, and then improve on each of them, you will deliver huge increase when you put them all together.’”

It sounds simple, but as a philosophy, marginal gains has become one of the hottest concepts not just in sports, but beyond. ...

As Brailsford puts it: ‘I realized early on that having a grand strategy was futile on its own. You also have to look at the smaller level, figure out what is working and what isn’t. Each step may be small, but the aggregation can be huge.’ ...

Brailsford puts it this way: ‘If you break a performance into its component parts, you can build back up with confidence. Clear feedback is the cornerstone of improvement. Marginal gains, as an approach, is about having the intellectual honesty to see where you are going wrong, and delivering improvements as a result.’

The marginal gains mentality has pervaded the entire Team Sky mindset. They make sure that the cyclists sleep on the same mattress each night to deliver a marginal gain in sleep quality; that the rooms are vacuumed before they arrive at each new hotel, to deliver a marginal gain in reduced infections; that the clothes are washed with skin-friendly detergent, a marginal gain in comfort.”

Sir David Brailsford is one of the world’s leading cycling geniuses who led British cycling to unprecedented dominance at the Olympics and then set his sights on road cycling and, specifically, the Tour de France.

No British rider had *ever* won the Tour de France when he created Team Sky. He said his team would win within 5 years. People thought that was absurd. Until his team won it in two.

The cornerstone of his approach?

Marginal gains.

He took his high-level goal and broke it down into the smallest components imaginable—knowing that if he could get tiny “marginal gains” in each of the smaller components, those gains, in aggregate, would be HUGE.

Syed shares a similar approach taken by the Mercedes Formula One racing team. They analyze and test EVERY.SINGLE.LITTLE thing that goes into their performance—CONSTANTLY looking for tiny, *marginal* gains that, when aggregated and compounded over time lead to *extraordinary* gains.

We need to do the same thing.

We have grand visions of optimizing and actualizing. Now, we need to identify all the facets of our lives that influence how we show up.

What can YOU do to create some marginal gains in *your* life?

Do you have a better day when begin your day in a certain way? Do you have more energy when you eat less of x and more of y? Do you feel better when you exercise or go to bed by a certain time? What other data can you collect?

TEST!!! Get feedback. Look honestly at what's working and what's not and dial it in.

FIND MARGINAL GAINS.

Know that although each of those marginal gains may not be huge on its own, when you put it all together and continue optimizing over an extended period of time, the aggregate + compound effect on that is truly astonishing.

In sports, that's what separates you from the rest of the pack.

In life, it's what separates us from our old selves so we can actualize our potential.

Here's to marginal gains!!!!

2,003 + 50,000 = FORMULA TO BEND IT LIKE BECKHAM

"Aversion to failure is the single largest obstacle to creative change, not just in business but beyond."

~ Matthew Syed

"It is striking how often successful people have a counterintuitive perspective on failure. They strive to succeed, like everyone else, but they are intimately aware of how indispensable failure is to the overall process. And they embrace, rather than shy away from, this part of the journey.

Michael Jordan, the basketball great, is a case in point. In a famous Nike commercial, he said: 'I've missed more than nine thousand shots. I've lost almost three hundred games. Twenty-six times I've been trusted to take the game-winning shot and missed.'

For many the ad was perplexing. Why boast about your mistakes? But to Jordan it made perfect sense. 'Mental toughness and heart are a lot stronger than some of the physical advantages you might have,' he said. 'I've always said that and I've always believed that.'

James Dyson embodies this perspective, too. He was once called 'an evangelist for failure.' 'The most important quality I look for in people coming to Dyson is the willingness to try, fail and learn. I love that spirit, all too rare in the world today,' he says."

In a chapter called "The Beckham Effect," Syed tells the incredible story of David Beckham, one of England's best soccer players.

Beckham is known as one of the best dead-ball specialists in the world. (Check out [this video](#) for one of his heroic goals.)

Syed walks us through the Black Box Thinking that led to Beckham's genius.

It started when little David was a 6-year-old kid who practiced keep-me-ups. He was average when he started. He could keep the ball up five or six times before it hit the ground.

But he had a very un-average appetite for hard work and practice.

Little 6-year-old Beckham used to spend HOURS every.single.day practicing keeping the ball up in the air just a little longer. Six months after practicing that one skill (for hours a day!) he was up to 50. Another six months and he was up to 200.

He kept at it for (echo!) hours per day (!) until he could do 2,003 of them (!!) as a 9-year-old.

At that point, he figured he'd mastered that skill. So, what did he do next?

He practiced free kicks. His dad says he must have practiced 50,000 (!) of them. He got so good that people would just stop and stare at this kid kicking the ball. (Think of those 50,000 kicks as a kid as you watch that video above.)

Most people who saw that thought he must be a natural-born genius. Syed calls that the "iceberg effect"—we talk about it more in [Bounce](#).

Here's how Beckham captured the power of his Black Box Thinking in a chat with Syed: *"When people talk about my free kicks they focus on the goals. But when I think about free kicks I think about all those failures. It took tons of misses before I got it right."*

The rest of the chapter is dedicated to HOW we learn to embrace failure as an integral part of mastery. The key? A GROWTH MINDSET.

As Syed says: *"Being able to see failure in a clear-eyed way: not as an indictment of one's judgment, but as a learning opportunity."*

Check out the Notes on Carol Dweck's [Mindset](#) for more. For now, remember this gem from Dweck: *"The passion for stretching yourself and sticking to it, even (or especially) when it's not going well, is the hallmark of the growth mindset. This is the mindset that allows people to thrive during some of the most challenging times in their lives."*

GALILEO + COGNITIVE DISSONANCE

"It is by testing our ideas, subjecting them to failure, that we set the stage for growth."

~ Matthew Syed

"But when Galileo invited Christian scholars to look through his telescope in order to see the new evidence, they flatly refused. They didn't want to see any data that might count against the earth-centric view of the universe. It is difficult to think of a more revelatory episode of cognitive dissonance. They simply shut their eyes."

Syed walks us through some fascinating research on cognitive dissonance.

Basic idea: When confronted with evidence that challenges our beliefs, rather than open to the possibility that we have something to learn, we often do the exact opposite—closing our minds and becoming even more entrenched in our existing beliefs.

Although we all do it to some degree, that's not helpful.

And, it's certainly not Black Box Thinking.

Spotlight on *you*: Are any of your deeply held beliefs being challenged these days? Do you find yourself resisting even *looking at* the possibility that you might be wrong?

Remember Galileo trying to show the Christian scholars a new perspective. Let's keep our eyes open to new perspectives.

P.S. Remember this GREAT quote from John Maynard Keynes that Syed shares:

"When my information changes, I alter my conclusions. What do you do, sir?"

PRE-MORTEM + PROSPECTIVE HINDSIGHT

"Learning from failure expresses a profound moral purpose. It is about saving, sustaining and enhancing human life."

~ Matthew Syed

"Another failure-based technique, which has come into vogue in recent years, is the so-called pre-mortem. With this method a team is invited to consider why a plan has gone wrong before it has even been put into action. It is the ultimate 'fail fast' technique. The idea is to encourage people to be open about their concerns, rather than hiding them out of fear of sounding negative."

The pre-mortem is crucially different from considering what *might* go wrong. With a pre-mortem, the team is told, in effect, that 'the patient is dead': the project has failed; the objectives have not been met; the plans have bombed. Team members are then asked to generate plausible reasons why. By making the failure concrete rather than abstract, it alters the way the mind thinks about the problem.

According to celebrated psychologist Gary Klein, 'prospective hindsight,' as it is called, increases the ability of people to correctly identify reasons for future outcomes by 30 percent. It has also been backed by a host of leading thinkers, including Daniel Kahneman. 'The pre-mortem is a great idea,' he said. 'I mentioned it at Davos . . . and the chairman of a large corporation said it was worth coming to Davos for.'

"If valid learning can be achieved through iteration at a fast pace and low cost, it is crazy to pass up the opportunity. Success, at the level of the individual as well as at the level of the system, will increasingly hinge on adaptability. In other words, learning from failure."

~ Matthew Syed

Pre-mortems.

Powerful stuff. Let's do one now.

What's your most important project right now? (Take a moment to see it...)

Alright. I'm sorry to break the news but... It failed. It's dead.

Why? What went wrong? (Take a moment to see it—not, as Syed says, *"to kill off plans, but to strengthen them."*)

Science says pre-mortems are a great way to cultivate prospective hindsight. Let's do that.

THE INCALCULABLE POTENCY OF CUMULATIVE ADAPTATION

"Throughout the book we have looked at other techniques such as marginal gains and the lean start-up. But the point about all these methods is that they harness the incalculable potency of the evolutionary mechanism. Providing they are used with an eye to context, and are fused with a growth-oriented mindset, they set the stage for an endlessly powerful process: cumulative adaptation."

Cumulative adaptation.

It's incalculably potent. The key that unlocks the black box?

Embracing failure.

Cultivating the growth mindset that allows us to see one of the most important lessons of the most successful among us: We NEED failure if we want to evolve.

Here's to leaning into all the wonderful growth opportunities as we optimize and actualize!

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Brian Johnson,
Heroic Philosopher CEO

About the Author of This Note

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Brian Johnson is the Founder + CEO of Heroic. He's spent half of the last 25 years as a Founder/CEO and the other half as a Philosopher. Brian loves integrating ancient wisdom and modern science to help YOU become the best, most heroic version of yourself so we can create a world in which 51% of humanity is flourishing by 2051. Learn more at heroic.us.

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