
COMPILATION OF BOOK REVIEWS - 2021

RAVISHANKAR IYER, STORY RULES

Every week, I share something of value from the world of storytelling through my 'Story Rules on Saturday' Newsletter.

The first of those emails every month is a list of reading/other content recommendations - including a Book review.

I thought it would be useful for you to have all those book reviews in one place, for leisurely reading. So here goes - a compilation of all the book reviews for 2021.

Book	Review
<u>'Improvise! Use the Secrets of Improv to achieve Extraordinary Results at Work' by Max Dickins</u>	<p>My first tryst with Improv was not a very impressive one.</p> <p>Several years back, I was attending an improv workshop at the quaint and idyllic 'Pagdandi Bookstore Cafe' in Pune. The instructor - a 25-something guy - was taking a bunch of (mainly) youngsters through the basics of improv. I must have been the oldest guy in the group.</p> <p>Perhaps the coach was inexperienced, or maybe the audience was a tad too rowdy - I just found the experience very underwhelming.</p> <p>If this is improv, count me out, I thought.</p> <p>That impression has been smashed (and how) by this fabulous book on the fascinating art of Improv.</p> <p>Improv, short for 'Improvisational theatre' is the art of unscripted theatre. But it goes so much beyond that. It's a whole different way of thinking. A way of thinking that has applications in almost all aspects of life -</p>

whether at work or at home.

The author, Max Dickins is an Improv theatre artist and a coach. In this highly readable book, he shares the lessons from improv that can help you to:

- Listen better
- Become more agile
- Improve spontaneity
- Enhance collaboration
- Embrace failure and learn from it

Max illustrates these lessons with several engaging examples - from the stage and from real life.

I found three things impressive about the book.

1. How effortlessly it straddles the philosophical with the practical

On the philosophical side, here are some of the thought-provoking gems from the book:

- *As Keith Johnstone puts it: 'Many teachers think of children as immature adults. (But) It might lead to better and more "respectful" teaching if we thought of adults as atrophied children.'*
- *We act ourselves into the future, we don't think our way there. By acting rather than thinking, creativity is not just easier, we also stumble onto different sorts of thoughts.*
- *An improviser's default reaction to a mistake is not, 'Oh no!' but instead, 'How can we use this?'... Jazz legend Miles Davis once said: 'It's not the note you play that's the wrong note - it's the note you play afterwards that makes it right or wrong.'*

I especially loved that last one!

On the practical side too, the book has a ton of exercises that you can use at work - especially to improve the quality of idea-generation. These exercises can be used during meetings, brainstorming sessions or offsites. Here are a few examples

- **Listening game:** *Divide into pairs. Each pair should have a conversation together for around 90*

seconds (the topic could be anything, for example, the gym). Each person should speak for roughly the same amount of time. The twist is that the first word in your response should be the same as the last word of your partner's response. This is a great listening training game because, having no idea what word your partner will end on, you can't pre-plan what you are going to say.

- **What's the Wrong Answer:** *In this game, you invite the group to design what is definitely not the right answer to the problem at hand. This puts them in a fun, playful space as the need to be 'good' is totally lifted.*
- **Chumbawamba moment:** *Every week at the team meeting we'd have a 'Chumbawamba moment' where we'd all share an example of where we'd got knocked down and then got back up again!*

2. The use of research-backed data to substantiate the points

The book is packed with research-based backing for a lot of the concepts covered. For instance, here's Max talking about why we struggle to listen:

*"If you've ever wondered why it's so hard to stay present and fully listen to another person, the answer lies in the '**Speech-thought differential**': we think faster than other people can talk. We can comprehend around 400 words per minute as a listener, yet most people tend to talk at around 130 words per minute... (furthermore) The rate at which we can form thoughts is estimated to be between 1,000 and 3,000 words per minute. So, we listen faster than we talk, and we think faster than we listen. No wonder we drift off!"*

3. The NLDC Framework!

Of all the concepts, my single biggest takeaway from the book was the simple yet effective **NLDC framework (Notice-Let Go-Decide-Communicate)**. It's super-useful to deal with the unexpected snafus that life has a tendency of throwing at us.

Here's how Max describes them:

NOTICE The first step in the loop involves observing what has happened, or is happening, as accurately as possible. It's an obvious thing to say, but we cannot react to change if we don't notice it first. You need to notice the facts as they are. This requires us not to be stuck in our heads but to be present to the moment.

	<p>Sometimes we are so caught up within the weeds that we fail to notice when something significant changes.</p> <p><i>LET GO</i> Noticing a change is not enough. You must also remain calm despite it. If we panic, we lose the emotional balance required to adapt to it successfully. First, we must surrender our current idea or plan in order to choose a response that fits the facts we've just observed. Second, we need to reframe this change as an opportunity, in order to prevent fear paralysing us. We must ask ourselves: 'Where's the offer here?' In short, we say 'Yes, and ...' to the change and not 'Yes, but ...'.</p> <p>I often struggle with this part - my mind is in a state of wishful thinking - wanting for the status quo to continue. I should, in the words of Anna and Elsa, 'Let it Go'...!</p> <p><i>DECIDE</i> Next, we have to decide what to do from the various options available to us. The important thing here is to make this decision quickly. We can't know for certain what the outcome of our decision will be, so we need to act without full information. Improvisers say that the only bad choice you can make is no choice.</p> <p><i>COMMUNICATE</i> Finally, having made a decision, we act on it - which in improvisation, and so often in life, involves communicating this choice clearly and persuasively to others. We need them not only to understand it but to buy into it too.</p> <p>This is a book that is especially essential reading for the 'left-brain', structure-dependent types (like me) who need to balance that need for structure and certainty with the Improv-inspired comfort with chaos and living in the moment.</p>
<p><u>The Body: A Guide for Occupants' by Bill Bryson</u></p>	<p>I used to abhor Chemistry in school - especially organic chemistry. In fact, it was one of the reasons why I preferred taking Commerce.</p> <p>And then many moons later, I read this passage in a book:</p> <p><i>"What sets the carbon atom apart is that it is shamelessly promiscuous. It is the party animal of the atomic world, latching onto many other atoms (including itself) and holding tight, forming molecular</i></p>

conga lines of hearty robustness."

I was like - Whaaaat?!! Carbon as a party animal? Molecular conga lines? Who writes about science like that? I didn't know you could actually make science interesting!

That passage was from the book 'A Short History of Nearly Everything' and the writer was Bill Bryson - probably one of the most influential (and widely read) popular-science writers ever.

And so, when I found out that Mr Bryson has written a book on the human body, it went straight to the top of my to-read list! (From there, it did take some time moving to the 'Actually start reading' list).

The book is a long read - but boy, is it worth it.

Bryson goes for all the storytelling tricks in his repertoire. Here are a few I could spot:

1. Making big numbers relatable

Here's a staggering fact that Bryson uncovered during his research: our lungs, smoothed out would cover about 2,800 sq. ft. and the airways within them would stretch for about 2,700 kms.

Here's how he makes it relatable:

"Your lungs, smoothed out, would cover a tennis court, and the airways within them would stretch from London to Moscow."

(Or Ahmedabad to Assam!)

Bryson is a master at the art of making big numbers relatable.

2. Use the power of contrast to surprise the reader

Another interesting fact is that the human brain is made of 75-80% water with the rest being fat and protein.

Here's how he uses contrast to make this awe-inspiring fact stand out:

"For an object of pure wonder, the human brain is extraordinarily unprepossessing. It is, for one thing, 75-80 per cent water, with the rest split mostly between fat and protein. Pretty amazing that three such mundane substances can come together in a way that allows us thought and memory and vision and aesthetic appreciation and all the rest".

He contrasts the mundane nature of the ingredients water, fats and proteins with the outcome - the most wondrous thinking machine ever created!

3. Think of the deeper implications

Often we state something interesting - and leave it at that. For example, take the fact that we shed a lot of skin. As Bryson says *"We shed skin copiously, almost carelessly: some twenty-five thousand flakes a minute, over a million pieces every hour"*

But Bryson doesn't stop there. He thinks about it. Ponders, broods. And then follows up with this poetic line:

"Run a finger along a dusty shelf and you are in large part clearing a path through fragments of your former self. Silently and remorselessly we turn to dust."

Poetic. And philosophical.

4. Use evocative analogies to describe complex phenomena

How do you experience the taste of what you are eating? You might say - through your taste buds.

They are important, but not the only actors. The nose, eyes, and most importantly, the brain - all play critical roles in processing taste.

Here's how Bryson describes it:

"(Imagine you are eating a warm, fresh chocolate brownie)... What we appreciate when we eat is flavour, which is taste plus smell. Smell is said to account for at least 70% of flavour and maybe even

*as much as 90%. When you eat, most of the aroma reaches you not through your nostrils but by the back staircase of your nasal passage, what is known as the retronasal route – as opposed to the orthonasal route up your nose. **Your brownie is sheet music. It is your brain that makes it a symphony.** As with so much else, you experience the world that your brain allows you to experience.”*

I LOVED the sheet music analogy – and how a piece of paper with funny symbols can be transformed into mellifluous sounds by the musician, just like the brain ‘processes’ all inputs (smell, sight and taste) and gives us that nice overall feeling of happiness!

5. Narrate the fascinating human stories behind scientific discoveries

During my consulting days, I studied the Indian Healthcare Delivery sector, and had a pretty detailed understanding of hospital economics, including stats about key surgical procedures.

For instance, I would know the number of angioplasties (‘plasties’ or ‘PTCAs’ we used to call them) being performed by leading hospitals off the top of my head.

And yet, I had no idea about how this fascinating technique was invented.

Trust Bryson to dig out the scarcely believable story:

“In 1929, Forssmann was a young, newly qualified doctor working in a hospital near Berlin when he became curious to know if it would be possible to gain direct access to the heart by means of a catheter. Without any idea what the consequences would be, he fed a catheter into an artery in his arm and cautiously pushed it up towards his shoulder and on into his chest until it reached his heart, which, he was gratified to discover, didn’t go into arrest when a foreign object invaded it. Then, realizing he needed proof of what he had done, Forssmann walked to the hospital’s radiology department, on another floor of the building, and had himself X-rayed to show the shadowy and startling image of the catheter in situ in his heart. Forssmann’s procedure would eventually revolutionize heart surgery...”

	<p>It took 5 minutes for me to pick up my jaw from the floor.</p> <p>'The Body' is a book that everybody should read - from teenagers to senior citizens. You will learn many amazing facts about the uniquely designed, complex and sophisticated shells we inhabit all our life...</p> <p>And as a bonus, you also get to absorb some cool storytelling techniques!</p>
<p><u>'Big Billion Startup: The Untold Flipkart Story' by Mihir Dalal</u></p>	<p>In late 2008, A and B ran into each other in Koramangala, Bangalore.</p> <p><i>A: 'What are you up to?'</i></p> <p><i>B: 'Startup ...'</i></p> <p><i>A: 'What kind of startup?'</i></p> <p><i>B: 'We sell books.'</i></p> <p><i>A: 'Abbe, who sells books? Where is your salary coming from?'</i></p> <p><i>B: 'How will we get a salary? We're looking for funding.'</i></p> <p><i>A: 'Funding kaun dega be?' (Who will give you funding, man?)</i></p> <p>A was Anil Kumar an IIT-Delhi grad from the batch of 2005. He was working in a management consulting firm when he had this conversation. He was clearly doing much better than B, who had founded an obscure, uncertain startup.</p> <p>B, his batchmate, was Binny Bansal.</p> <p>This fascinating tidbit comes from the book, 'Big Billion Startup: The Untold Flipkart Story', by Mihir Dalal.</p> <p>It's a book that I would have most probably ignored, had it not been for a post by Anish Chandy. In the post, Anish mentioned this book among others to have been nominated for the Business Book 2020 award by Gaja Capital (the biggest business book prize in the country).</p> <p>That didn't make me buy it yet. Let's face it - Indian business biographies can be pretty ordinary. Most are</p>

hagiographical accounts by founders/founders' friends, while others are poorly researched and written. Often they are both.

But when Anish put [another post](#) congratulating the winner of the award (Mihir for the Flipkart book), I was intrigued. I decided to take a chance.

Man, was I blown away.

Flipkart is a one-of-a-kind phenomenon. Two computer engineers start selling books online from their Bangalore apartment in late 2007 - and after 10 years, a behemoth is sold to Walmart for the staggering valuation of \$22 BILLION dollars.

This was a story begging to be written.

And few folks were as qualified as [Mihir Dalal](#) - a long-form writer with Mint - to write this book. As Livemint's Bangalore based writer, he extensively covered the Indian start-up scene in general and Flipkart in particular.

In an interview, Mihir mentions that despite covering the subject for several years, he was astounded by the material that was emerging from his research. It must not have been easy - converting the dozens of hours of conversation and disparate threads into a coherent narrative.

But Mihir has absolutely hit this one out of the park. The book surges forward with the pace of a thriller - one that is laced with several jaw-dropping moments.

Here are some that stayed with me:

Fascinating trivia/anecdotes:

- Flipkart was almost sold to Infibeam for a pittance. Had the Infibeam founder not been greedy, the deal may have fructified.

- One of Flipkart's early employees was a unique character called Tapas Rudrapatna. Here's Mihir: *"Whenever there was a prickly user issue or a call from an angry shopper, Tapas would handle it, pacifying them with apologies, jokes, conversation. He spoke to Flipkart users in an informal, friendly, almost-irreverent manner and wrote blogs and Twitter posts that charmed them."* This shows the value of characters
- Another 'character' was Iyyappa. Mihir writes: *"Iyyappa was Flipkart's 'human ERP' until it reached a thousand orders a day. He had a sensational career at the company. In a year's time, his salary soared from eight to nearly eighty thousand rupees a month. Over the next decade, he would become a crorepati by selling Flipkart shares and secure a BBA degree."*
- Flipkart first major investment came from a Google search! *"The (e-commerce) firms mentioned in McKinsey's report did not impress Lee Fixel, (partner at Tiger Global). He considered online retailers such as Infibeam and Indiaplaza but passed up on them. One day, restless in his New York office, he ventured online to conduct some armchair research of his own. On Amazon.com, he started looking up popular books that he thought an Indian might want to read. From there he transposed the book titles onto Google to see which Indian websites were selling them. Every search threw up Flipkart in the top results."*
- The book gives 'closure' to the aforementioned 'Anil' incident. *"When Anil introduced himself as an IIT Delhi graduate in Bangalore's tech circles, he would draw what became a familiar response. 'You're from IIT Delhi, are you?' 'Yes, batch of 2005.' 'Achha, toh Binny ke batch se ho?' ('Oh, you're from Binny's batch?')"*
- Based on conversations with insiders, the book recreates key moments and let's us be a fly in the wall. Here's an example: *"Once, in a heated discussion, Sujeet fired back, 'Sachin, the same rules should apply to everyone. Your gut is gut, but with others, it's gutter?' Sachin had looked offended. But Sujeet wouldn't back down."* - This line (surely in the far more evocative original Hindi) will make it to the inevitable movie.

Big Billion Startup is Mihir's first book, but I'm hoping it's not his last. Finally, we have an Indian business biography that is well-researched, insightful and most importantly, riveting.

'Alchemy: The Surprising Power of Ideas That Don't Make Sense' by Rory Sutherland

Alchemy is the ancient and long-discredited art of converting base metals to gold. Surely it is not possible, you'd think.

Ah, it may not be physically possible. But, as illustrated so amply and vividly in this book by Rory Sutherland (the Vice-Chairman of the Ogilvy and Mather advertising group), it is possible 'psycho-logically'.

'Psycho-logical' decisions, according to Rory are those which do not seem 'rational' or 'logical' but work perfectly well for most humans.

For instance, will you ever exchange your gold ornaments for similar ones made of iron? Willingly?

Here's a fascinating story where that happened:

In the 19th century, the king of Prussia needed money to fund the war effort against France. To do so, *"Princess Marianne appealed in 1813 to all wealthy and aristocratic women there to swap their gold ornaments for base metal... In return, they were given iron replicas of the gold items of jewellery they had donated, stamped with the words 'Gold gab ich für Eisen', ('I gave gold for iron'). At social events thereafter, wearing and displaying the iron replica jewellery and ornaments became a far better indication of status than wearing gold itself. Gold jewellery merely proved that your family was rich, while iron jewellery proved that your family was not only rich but also generous and patriotic."*

Rory continues:

"Thinking what is gold jewellery is actually for reveals it to be an extremely wasteful way of signalling status. But it was perfectly possible, with the right psychological ingredients, to allow iron to do this job just as well. Psychology 1, Chemistry 0."

Filled with utterly striking stories and examples like above, 'Alchemy' is an almighty takedown of humankind's over-dependence on "logic" and rational thinking. It's a book that is required reading for all of us 'left-brain types'.

What really helps is Rory's writing style - conversational, snarky and full of British wit - which keeps you

engaged throughout.

Here are some of the storytelling techniques Rory uses in crafting this bestseller:

1. Analogies: Rory is a *master* at analogical thinking. For instance:

- He uses a ton of botanical references and some are hilarious! For instance – *“How can the flower, at a distance, convince the bee of the existence of a reward which it cannot verify until it has already exerted time and effort? The answer is that they use ‘advertising and branding’ – they produce distinctive, hard-to-copy scents and large, brightly coloured petals”.*
- He then continues: *“Why don’t flowers cheat, by devising an alluring advertisement of huge petals, and then delivering no costly nectar? Well, sometimes they do – false advertising is common in orchids, which often seem to be the scam artists of the plant kingdom. At least one orchid species mimics the appearance (and smell) of female insect genitalia; many mimic food sources and some mimic other plants. But this can only work on a small scale – play that trick too often and insects will just learn to avoid you...orchids are the tourist restaurants of the floral world – they rely on people visiting only once so are less worried about ripping off visitors, because they know they are never going to come back anyway.”*
- About how bee-hives have an R&D function: *“Although they have an efficient way of communicating about the direction of reliable food sources, the waggle dance, a significant proportion of the hive seems to ignore it altogether and journeys off at random. In the short term, the hive would be better off if all bees slavishly followed the waggle dance, and for a time this random behaviour baffled scientists, who wondered why 20 million years of bee evolution had not enforced a greater level of behavioural compliance. However, what they discovered was fascinating: without these rogue bees, the hive would get stuck in what complexity theorists call ‘a local maximum’; they would be so efficient at collecting food from known sources that, once these existing sources of food dried up, they wouldn’t know where to go next and the hive would starve to death. So the rogue bees are, in a sense, the hive’s research and development function, and their inefficiency pays off handsomely when they discover a fresh source of food. It is precisely because they do not concentrate exclusively on short-term efficiency that bees have survived so many million years.”*

2. Human stories: Apart from the iron-for-gold story, here are a few more:

- How 'repositioning' a course helped in quadrupling the female intake: *"In 2006, Maria Klawe, a computer scientist and mathematician, was appointed president of Harvey Mudd College in California. At the time, only 10% of the college's computer science majors were women. The department devised a plan, aimed at luring in female students and making sure they actually enjoyed their computer science initiation, in the hopes of converting them to majors. A course previously entitled 'Introduction to programming in Java' was renamed 'Creative approaches to problem solving in science and engineering using Python'. The professors further divided the class into groups – Gold for those with no coding experience and Black, for those with some coding experience."* Apart from these, the department also showcased successful women in tech, and got the female students to apply their tech knowledge to solve problems they cared about. Finally, *"After the first four-year experiment, the college had quadrupled its female computer science majors in a short space of time, from 10% to 40%. Notice that there were no quotas involved – everything was voluntary"*
- How branding helps build trust (something I had written about [here](#)) and improves the overall customer experience: *"In Eastern Bloc countries under communism; brands were considered un-Marxist, so bread was simply labelled 'bread'. Customers had no idea who had made it or whom to blame if it arrived full of maggots, and couldn't avoid that make in future if it did, because all bread packaging looked the same. Unhappy customers had no threat of sanction; happy customers had no prospect of rewarding producers through repeat custom. And so the bread was rubbish."*

3. Thought-provoking insights: The book offers insights on why some actions which seem irrational from the outside, actually make logical sense. For example:

- Why do placebos (like homoeopathy) work: *"The psychologist Nicholas Humphrey argues that placebos work by prompting the body to invest more resources in its recovery. He believes that evolution has calibrated our immune system to suit a harsher environment than the current one, so we need to convince our unconscious that the conditions for recovery are especially*

	<p><i>favourable in order for our immune system to work at full tilt."</i></p> <ul style="list-style-type: none"> • How we are highly skilled at generating 'rationalisations' for our 'psycho-logic' behaviour: <i>"Conventional wisdom about human decision-making has always held that our attitudes drive our behaviour, but evidence strongly suggests that the process mostly works in reverse: the behaviours we adopt shape our attitudes. Give people a reason and they may not supply the behaviour; but give people a behaviour and they'll have no problem supplying the reasons themselves."</i> <p>4. Pithy one-liners: The book is filled with them - after all, we are dealing with one of the world's best copywriters:</p> <ul style="list-style-type: none"> • <i>"A flower is just a weed with an advertising budget"</i> • <i>"Solving problems using rationality is like playing golf with only one club"</i> <p>One criticism of the book might be that the ideas it discusses aren't exactly new or pathbreaking. The concepts of human irrationality and biased thinking have been known for a long time since Kahnemann-Tversky, Thaler, Ariely etc.</p> <p>But where 'Alchemy' dazzles is in offering a rich hoard of real-world examples from a wide array of contexts - including many from his own clients.</p> <p>Just for that - and Rory's hilarious footnotes - this book is worth a read.</p>
<p><u>'Seven and a Half Lessons About the Brain' by Lisa Feldman Barrett</u></p>	<p>You may have heard a lot of metaphors for the brain. For instance, people call it the Command Centre of the body. The CEO. The Headquarters. Etc.</p> <p>Lisa Feldman Barrett might disagree with all of the above.</p> <p><u>Lisa</u> (a leading psychology professor in the US) is among the foremost researchers of the brain and more importantly, is among those rare academics who can write for a layperson audience.</p>

She explains what is a 'body budget':

"A financial budget tracks money as it's earned and spent. A budget for your body similarly tracks resources like water, salt, and glucose as you gain and lose them. Each action that spends resources, such as swimming or running, is like a withdrawal from your account. Actions that replenish your resources, such as eating and sleeping, are like deposits."

Then she shares a crucial insight about the brain - it is a prediction machine:

"When it came to body budgeting, prediction beats reaction. A creature that prepared its movement before the predator struck was more likely to be around tomorrow than a creature that awaited a predator's pounce. Creatures that predicted correctly most of the time, or made nonfatal mistakes and learned from them, did well."

Finally, she brings out the, ahem, bottomline:

"(Body budgeting is) your brain's most important job. It's not rationality. Not emotion. Not imagination, or creativity, or empathy. Your brain's most important job is to control your body – to manage allostasis – by predicting energy needs before they arise so you can efficiently make worthwhile movements and survive. Your brain continually invests your energy in the hopes of earning a good return, such as food, shelter, affection, or physical protection, so you can perform nature's most vital task: passing your genes to the next generation."

The human brain is the greatest, most complex machine ever made. And Lisa Feldman Barrett is basically saying: It's a glorified Accountant.

I have never felt prouder of my degree.

'Seven and a Half Lessons about the Brain' is a short, highly-readable book that's essential reading for anyone interested in understanding how our brain functions and why.

Two specific aspects I found useful were

- The sheer amount of surprising insights it covers
- The use of vivid analogies (especially considering it's a work by an academic)

Several surprising insights

Lisa dives deep into the evolutionary history of brains and comes up with fascinating, myth-breaking insights. For instance:

- **We don't have "three brains"** (the reptilian, mammalian and pre-frontal cortex). She says "*The triune brain idea is one of the most successful and widespread errors in all of science. Anything you read or hear that proclaims the human neocortex, cerebral cortex, or prefrontal cortex to be the root of rationality, or says that the frontal lobe regulates so-called emotional brain areas to keep irrational behavior in check, is simply outdated or woefully incomplete.*"
- **Our real differentiator vis-a-vis animals is the size of our 'niche':** "*A mother picks up a toy dog and looks at it. She looks at her little boy, then back at the dog, guiding the baby's gaze. She turns to her son and says with intent, "What a cute little doggie," in a singsong tone. The mother's speech and the back-and-forth switching of gaze, which scientists call 'sharing attention', alert the baby that the toy dog is significant – that is, the toy could affect his body budget, so he should care about and learn about the dog. Little by little, sharing attention teaches an infant which parts of the environment matter and which parts don't. The infant brain is then able to **construct its own environment of what is relevant to its body budget and what can be ignored. Scientists call this environment a niche.** Every animal has a niche, and it creates that niche as it senses the world, makes worthwhile movements, and regulates its body budget. **Adult humans have a gigantic niche, perhaps the largest of any creature. Your niche extends far beyond your immediate surroundings to include events around the world, past, present, and future...***" I loved this point: The size of our 'niche' - across all of space and time - is our differentiator. Mainly driven by our faculty for language, humans could learn from each other all over the world and more importantly from the past too. Our key differentiator is our learning ability, for which language and communication are the most important tools
- **We 'assemble' a memory:** "*A brain doesn't store memories like files in a computer – it reconstructs them on demand with electricity and swirling chemicals. We call this process*

remembering but it's really assembling."

- **Our brain 'constructs a feeling':** Expanding on the earlier insight on our brains being 'prediction machines', our brain 'constructs a feeling' based on very preliminary data from the senses: *"In a very real sense, predictions are just your brain having a conversation with itself. A bunch of neurons make their best guess about what will happen in the immediate future based on whatever combination of past and present that your brain is currently conjuring... So, your brain issues predictions and checks them against the sense data coming from the world and your body. What happens next still astounds me, even as a neuroscientist. If your brain has predicted well, then your neurons are already firing in a pattern that matches the incoming sense data. That means this sense data itself has no further use beyond confirming your brain's predictions. What you see, hear, smell, and taste in the world and feel in your body in that moment are completely constructed in your head."*

That last sentence....? Mind. Blown.

Vivid real-life examples of prediction at work can be seen in any sport. Let's take cricket. The speed at which a ball is bowled by say, a Pat Cummins to a Rohit Sharma, gives the latter no time to actually observe, analyse and then react. Sharma's brain has predicted (based on Cummins' hand and body positions and Sharma's rich past repository of cricket memories) where the ball will be... and he moves his bat and body accordingly.

Interestingly, this prediction function of our brain is incredibly important to a storyteller. When you are telling a story, you need to constantly (and empathetically) be thinking: 'What is my audience's brain likely to predict now that I have told them X'?

And if your actual finding differs from the likely prediction, boom - you have norm-variance. The ingredient that can get your audience's attention better than anything else.

The use of vivid analogies

- In explaining the brain's functioning Lisa comes up with the vivid analogy of the hub-and-spoke

based global air travel system: *"...you have a more frugal wiring arrangement that is sort of like the global air-travel system. The air-travel system is a network of about seventeen thousand airports around the world. Whereas your brain carries electrical and chemical signals, this network carries passengers... (The) brain network is organized in much the same way (as the global hub-and-spoke airports system). Its neurons are grouped into clusters that are like airports. Most of the connections in and out of a cluster are local, so, like an airport, the cluster serves mostly local traffic. In addition, some clusters serve as hubs for communication. They are densely connected to many other clusters, and some of their axons reach far across the brain and act as long-distance connections... Hub damage is associated with depression, schizophrenia, dyslexia, chronic pain, dementia, Parkinson's disease, and other disorders. Hubs are points of vulnerability because they are points of efficiency - they make it possible to run a human brain in a human body without depleting a body budget."*

- **She talks about how we can 'program ourselves' to overcome our nervousness** before critical events, when we feel 'butterflies in the stomach': *"Research shows that students can learn to experience their physical sensations not as anxiety but as energized determination, and when they do, they perform better on tests. That determination seeds their brains to predict differently in the future so they can get their butterflies flying in formation. If they practice this skill enough, they can pass a test..."* (I loved that evocative line about 'butterflies flying in formation'!)
- Lisa also introduces **a concept called 'compression'** using an analogy: *"...Compression (is) an intricate ability that humans have to a degree not found in any other animal brain. I'll explain compression first by analogy. Imagine that you are a police detective investigating a crime by interviewing witnesses. You hear one witness's story, then another's, and so on, until you've interviewed twenty witnesses. Some of the stories have similarities - the same people involved or the same crime location. Some stories also have differences - who was at fault or what color the getaway car was. From this collection of stories, you can trim down the repetitive parts to create a summary of how the events might have occurred. Later, when the police chief asks you what happened, you can relay that summary efficiently. A similar thing transpires among neurons in your brain. You might have a single, large neuron (the detective) receiving signals*

	<p><i>from umpteen little neurons at once (the witnesses) which are firing at various rates. The large neuron doesn't represent all of the signals from the smaller neurons. It summarizes them, or compresses them, by reducing redundancy. After compression, the large neuron can efficiently pass that summary to other neurons."</i></p> <p>Ladies and gentlemen, that large neuron is doing nothing but relaying the 'BLUF' - the Bottom Line Up Front - which is a critical storytelling technique. That's how our brains are able to see patterns and derive summary insights from a seemingly contradictory mass of data.</p> <p>Ok, so the brain is a predicting machine, a detective, an assembler, an artist...</p> <p>But most of all, it is an Accountant.</p>
<p><u>'Sapiens: The Graphic Novel (Volume 1)' by Yuval Noah Harari</u></p>	<p>Many of you would have read 'Sapiens'. Almost all of you would have definitely heard of it. So this recommendation may seem a bit dated. But bear with me.</p> <p>Two things happened, coincidentally, in the previous month - which led me to a realisation.</p> <p>One I re-read Sapiens (the original book) - cover to cover. And two, my wife (Praveena; linking her venture here because she's not active on SM!) came across a 'graphic novel' adaptation of the book. (The graphic novel covers only a part of the original book. Further Volumes would be released later).</p> <p>So, this beautiful hardcover graphic novel comes home..., and it's stunning. Soon we are fighting over it. She wins, of course. To be fair, she had ordered it and started reading it first!</p> <p>Anyway, we both read the 240-odd page book in super quick time. Can't say that happens too often with non-fiction books. (Fair warning - it's not child-friendly. For readers above 13 only)</p> <p>So what's the difference between the original book and the graphic novel?</p>

It's like Yuval took a look at 'Sapiens' and said: "Hm, I think I can amp up the Storytelling quotient on that a *bit* more." And that's what he's done with the graphic novel. Taken the original (which had a fairly high Storytelling Quotient to start with - let's call it SQ for short) and solved for MAX-SQ.

No analogy left behind, no concrete examples avoided, no present-day pop reference missed out and no opportunity for anthropomorphism let slip. Every chapter, every page, every panel oozes with Storytelling techniques.

And of course, the brilliant visualisation of the ideas along with the concept of 'let-the-story-characters-keep-moving' gives the story a lot of momentum and adds to the readability.

Which brings me to the realisation I had.

Yuval Noah Harari is probably the world's greatest non-fiction storyteller alive.

The reason for that is he is able to master two worlds: The messy, arcane, complex world of raw information ... and the clear, rarefied, uplifting world of storytelling.

Here's an analogy. Take gold. You need two different sets of skills to work with it.

One is mining. Knowing where the deposits are. Being able to test its purity. Having the skills, the grit and the patience to go through the mucky, deep, dark mines - to successfully extract the raw precious metal.

"The originality of an idea depends on the obscurity of sources." — John Hegarty

But then, it's still raw. It's pretty much useless for an end-customer. Which is where the second set of skills comes in.

The ability to refine the gold through a smelter. To create the building blocks of insight. And most importantly, to know customer preferences and aesthetics to be able to design contemporary, beautiful, striking jewellery that folks will line up to buy. And use.

Yuval Noah Harari is an absolute master at BOTH these disciplines. He's like a 'Daniel Kahnemann + Malcolm Gladwell' combination. It doesn't get more powerful than that.

"The task is not so much to see what no one has yet seen, but to think what nobody yet has thought about that which everybody sees."— Arthur Schopenhauer

Whether the graphic novel or the original book, ['Sapiens: A brief history of humankind'](#) is one of those books everyone should read. And re-read.

Several Storytelling lessons

In this part of the review, I usually share extracts from the book to make my case for why it is readable. For this book, I was absolutely struggling to choose from the 597-odd Kindle highlights that I had made...!

So I thought I'll share just a few random extracts to give you a glimpse of the book's extraordinary contents:

Finding surprising insights:

Who do you think would be the **first written name** in history? Jesus? Naah, writing was invented before he was born. Some Greek/Persian King? No, it was the Sumerians, who came before them, who invented writing. (Sumer is present-day southern Iraq).

But, if you think they invented writing to put down their deepest thoughts and emotions on to paper, you are mistaken. Here's Yuval: *"Between the years 3500 BC and 3000 BC, some unknown Sumerian geniuses invented a system for storing and processing information outside their brains, one that was custom-built to handle large amounts of mathematical data. The Sumerians thereby released their social order from the limitations of the human brain, opening the way for the appearance of cities, kingdoms and empires. The*

data-processing system invented by the Sumerians is called 'writing'..."

He then adds: "*The earliest messages our ancestors have left us read, for example, '29,086 measures barley 37 months Kushim.'*" concluding with, "*It is telling that the first recorded name in history belongs to an accountant, rather than a prophet, a poet or a great conqueror.*" (emphasis mine)

It's just that we accountants are super modest about our immense contributions to human history... :D

Balancing between stats and stories:

Yuval is talking about one of the greatest victories of medical science - the drastic reduction in child mortality. He starts with the stats: "*In seventeenth-century England, 150 out of every 1,000 newborns died during their first year, and a third of all children were dead before they reached fifteen. Today, only 5 out of 1,000 English babies die during their first year, and only 7 out of 1,000 die before age fifteen.*"

He then realises that stats don't make ideas relatable, and so adds: "*We can better grasp the full impact of these figures by setting aside statistics and telling some stories.*"

This is the 'story' he narrates:

"A good example is the family of King Edward I of England (1237-1307) and his wife, Queen Eleanor (1241-90). Their children enjoyed the best conditions and the most nurturing surroundings that could be provided in medieval Europe. They lived in palaces, ate as much food as they liked, had plenty of warm clothing, well-stocked fireplaces, the cleanest water available, an army of servants and the best doctors. The sources mention sixteen children that Queen Eleanor bore between 1255 and 1284:

- *An anonymous daughter, born in 1255, died at birth.*
- *A daughter, Catherine, died either at age one or age three.*
- *A daughter, Joan, died at six months.*
- *A son, John, died at age five.*
- *A son, Henry, died at age six.*
- *A daughter, Eleanor, died at age twenty-nine.*

- *An anonymous daughter died at five months.*
- *A daughter, Joan, died at age thirty-five.*
- *A son, Alphonso, died at age ten.*
- *A daughter, Margaret, died at age fifty-eight.*
- *A daughter, Berengeria, died at age two.*
- *An anonymous daughter died shortly after birth.*
- *A daughter, Mary, died at age fifty-three.*
- *An anonymous son died shortly after birth.*
- *A daughter, Elizabeth, died at age thirty-four.*
- *A son, Edward.*

The youngest, Edward, was the first of the boys to survive the dangerous years of childhood, and at his father's death he ascended the English throne as King Edward II.

In other words, it took Eleanor sixteen tries to carry out the most fundamental mission of an English queen – to provide her husband with a male heir."

Good storytelling is not about choosing between stats and anecdotal stories. It's about using both to form a compelling narrative.

Evocative analogies (No reference to storytelling techniques by me would be complete without an analogy example!)

Here's Yuval: "*However, to understand long-term processes the bird's-eye view is too myopic. We would do better to adopt instead the viewpoint of a cosmic spy satellite, which scans millennia rather than centuries. From such a vantage point it becomes crystal clear that history is moving relentlessly towards unity.*"

'Cosmic spy-satellite view' - phew.

And so that is Yuval's magic. The ability to dig deep into the bowels of the planet to unearth dazzling insights – and the wondrous ability to fly high up to stratospheric levels and take a multi-millennial view – and take us on this thrilling joyride.

	The best part? He's just 45 years old - his best years are probably yet to come!
<u>'The Premonition - A Pandemic Story' by Michael Lewis</u>	<p>We are going through an epochal period - a period which will be studied by several historians for decades from now.</p> <p>Among the many questions they study, one prominent one would be: Could we have limited the impact of this pandemic?</p> <p>When they do that, <i>this</i> might be the first book they would pick up.</p> <p><u>Michael Lewis</u> is among the most successful non-fiction storytellers in the world. Several of his books have become blockbuster movies (Moneyball, The Blind Side, The Big Short) starring Hollywood A-listers.</p> <p>For some strange reason, I hadn't read his books so far. Thankfully I corrected that anomaly with this one. And realised why he is such a big deal.</p> <p>The guy is a MASTER of narrative. He is to books what Christopher Nolan is to cinema.</p> <p><i>"The only useful definition of narrative is that it's a controlled release of information. The way in which you release that information is all up to you."</i> - Christopher Nolan</p> <p>Here's the story of the book in one line: A bunch of committed public health professionals in the US anticipate the Covid-19 pandemic and are ready with a plan that could have potentially saved hundreds of thousands of lives; but they are ignored and thwarted by a combination of cynical politics and dysfunctional institutions.</p> <p>That's it. This one-line story is told in a gripping manner over 320 pages.</p> <p>And almost throughout, the book makes you wonder: 'what might have been' had the right people been in charge.</p>

Ah, the people. So here's the deal with Michael Lewis. When writing narrative non-fiction, instead of writing the story through the eyes of the key institutions or the overall system, he envisions it through the eyes of a set of individuals. Let's call them the protagonists.

By using this technique, he makes it easier for readers to 'follow' the story, since there aren't a multiplicity of perspectives that crowd the pages.

Admittedly, this approach does give the book a bias - Lewis has clearly picked a side in the story. But he has done so unequivocally and without obfuscation.

Now, having chosen this approach, Lewis' real magic is in his execution.

Several Storytelling lessons

Three techniques stood out for me: one the use of rich, layered backstories. Two, the focus on key moments. And three, the sheer poetic writing.

1. The backstories

Like an expert archaeologist, Lewis digs deep to unearth several character-revealing incidents for the story's protagonists. For example, Chapter 1 opens almost like a movie scene, with one of the protagonists (Dr. Charity Dean, a public health official in Santa Barbara, California) being faced with the body of a woman who's died of a mysterious (and highly infectious) TB infection.

The rest of the chapter alternates between the present (where Dr Dean struggles to get an autopsy done on the body, by a reluctant coroner) and her past backstory as a struggling yet fiercely determined public health professional.

Here's how that chapter ends:

"Now she held the young woman's lungs in her hands. This Jell-O. Outside the human body, lung tissue

didn't hold its form. And now she could see just how sure the coroner had been that none of this would ever happen: he had nowhere to put them. The only container in sight was an orange plastic bucket from Home Depot. She grabbed the woman's lungs and placed them into it, then tossed the bucket into the car and drove away. To the men she left behind, the entire scene would remain a vivid memory; to her it was almost just another day in her life as the local health officer. They had no idea of the things she had done, or what she was capable of. The coroner obviously hadn't even considered the possibility that she was a trained surgeon. "Men like that always underestimate me," she said. "They think my spirit animal is a bunny. And it's a fucking dragon."

Now that entire Chapter 1 had nothing to do with the Covid pandemic. It happened several years before, and the gist of the chapter could be explained in that final line about her spirit animal: Basically Lewis wants to say, 'You don't mess with Dr. Charity Dean'.

Oh but that would have been so dull and boring. Instead, Lewis takes us deep into the backstory, and really shows us... no, makes us *feel*/what sort of a person Dr. Charity Dean is.

And by the time he is done with the backstories of the protagonists, you are completely rooting for them to win.

2. The focus on key moments

Throughout the narrative, Lewis constantly looks for critical moments... and then amplifies them.

For instance, let's take a moment featuring my favourite character in the book, Dr. Carter Mecher, a senior public health expert. Carter was the unofficial conductor orchestrating the efforts of a group (who called themselves 'The Wolverines') to predict the pandemic's impact and come up with the right recommendations.

Carter is a behind-the-scenes doer and is brilliant with details... but he's also a big-picture thinker and a natural storyteller.

To illustrate this point, Lewis describes a heart-rending moment.

In a crucial meeting, Carter is trying to convince the US CDC to adopt 'social distancing' as a strategy to battle a potential pandemic (this is several years pre-Covid). At that time, the only reference point of a major global pandemic was the Spanish Flu of 1919.

The CDC was sceptical. After all, distancing measures such as closing down schools, offices, restaurants could be highly unpopular and damaging to the economy. There had been several 'false alarms' before this...

Carter realises he needs to change track, to convince the reluctant officials.

Here's how Lewis describes the moment:

"The way to change minds was by first changing hearts. Carter ceased his appeals to reason and began to appeal to emotion—which is to say that he stopped making an argument and began to tell a story. His story, at its core, was about the hole left when someone dies, especially when the death is preventable, and the someone is a child.

He'd put up on a screen a heart-tugging photograph of a nine-year-old girl in 1918, smiling and dressed for church. Then he'd describe how she and other small children would end up as bodies, stacked liked cordwood. He'd even put up a picture of his mother as a child and tell the story of her next-door neighbor. The woman who lived next door to his mom had given birth to four children. After the third had died of flu, the undertaker had told the woman that if the fourth child died, he'd bury him for free."

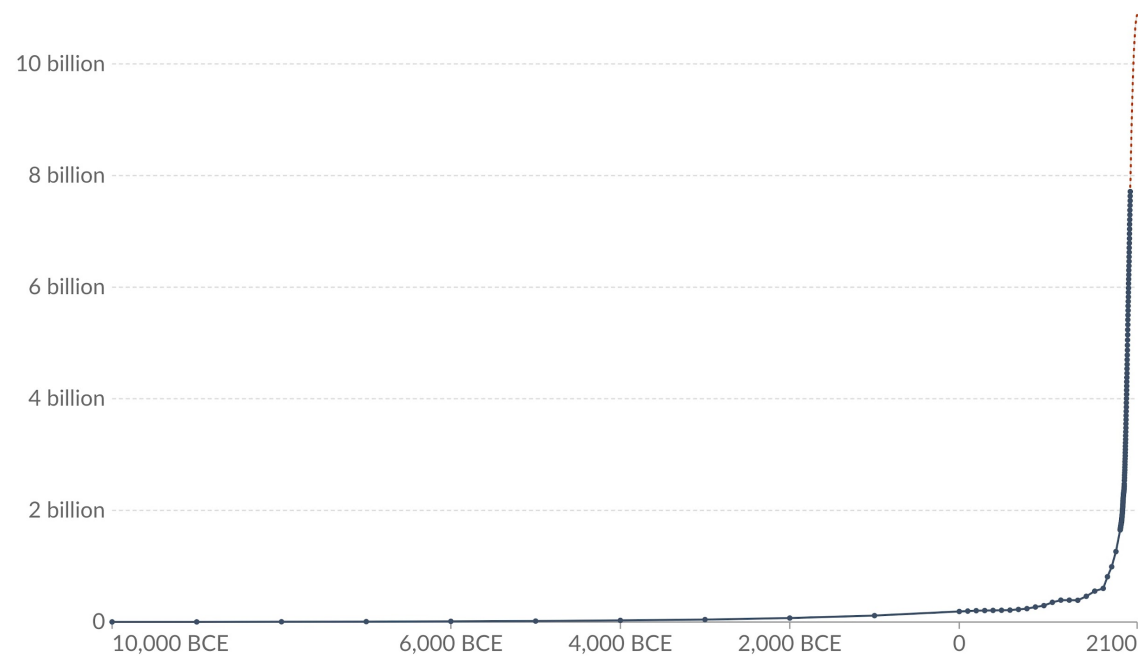
3. The writing chops

Here's a memorable para, pulsing with rhythm:

"Richard played chess and quoted Borges; Carter took apart pickup trucks and put them back together. Much of what Richard loved doing could be done in a white linen suit. Much of what Carter

	<p><i>loved doing left his hands black. Richard liked to borrow a phrase, Carter a tool. Richard was top-down—he conversed easily with the fancy academics and important policy people, and they with him. Carter was bottom-up—there was no fact, and no person, trivial enough to evade his curiosity. Richard left every classroom he entered at or near the top; Carter often just left the classroom."</i></p> <p>Sheer magic.</p> <p>Now, while all this is good, the book does have one flaw. Given the exclusive spotlight on the protagonists, some of the other characters (especially the senior CDC employees) come across as weak, ineffective and frankly, culpable. A good reporter would have included their side of the story.</p> <p>Perhaps a historian might address this imbalance.</p> <p>Meanwhile, Michael Lewis's cautionary tale is required reading for anyone interested in public health - and definitely anyone who'd like to read and learn from a gifted storyteller at the peak of his powers.</p>
<p><u>'How Innovation Works: And Why It Flourishes in Freedom' by Matt Ridley</u></p>	<p>It was while reading another book (The Second Machine Age) that I had come across a staggering chart.</p>

World Population over the last 12,000 years and UN projection until 2100

Our World
in Data

Source: World Population over 12000 years - various sources (2019), Medium Projection - UN Population Division (2019 revision)
OurWorldInData.org/world-population-growth/ • CC BY

That period - when world population just zooms up - is around 1770, the dawn of the Industrial Revolution. A time when it seemed that humankind decided to collectively turn on their innovation switch, leading to the greatest era of prosperity and health we have ever seen on the planet.

Sure, there was innovation before the 18th century. Agriculture, trade, writing... even fire - were all superb ideas that propelled us forward.

What the Industrial Revolution did was to slowly turn up the 'Innovation dial' on Earth towards maximum intensity... letting loose an explosion of ever-amazing discoveries and inventions.

Today, of course, that dial is turned up to full-on 'Beast' mode.

In this seminal book, Matt Ridley tells this fascinating story of Innovation – through the ages.

It is an astonishing piece of writing, in which, apart from breezing through innovation since the dawn of humankind, he covers areas as diverse as: Energy, Manufacturing, Health, Transport, Food, Communications and Computing.

And he does that by superbly combining two rare skills: the all-encompassing eye of an army commander with the precision of a hand-surgeon. Despite covering so much ground, the book is relatively short at just 400-odd pages.

Ridley has an impressive resume: he's an accomplished author with several bestselling books (mostly on science, especially genomics), a former science editor at The Economist, a business leader and also a member of the UK House of Lords.

My biggest takeaways from the book were the fascinating patterns that Ridley identifies on innovation.

Here are the five most striking ones (all quotes from the book):

1. The field is more important than the lab:

"For most of the innovations that changed people's lives, at least at first, owed little to new scientific knowledge and few of the innovators who drove the changes were trained scientists. Indeed many, such as Thomas Newcomen, the inventor of the steam engine, or Richard Arkwright of the textile revolution, or George Stephenson of the railways, were poorly educated men of humble origins. Much innovation preceded the science that underpinned it."

You don't need to be a 'scientist' or have fancy degrees to be an innovator. All you need is the next ingredient...

2. The importance of tinkering or trial-and-error in invention

Curious, patient and meticulous tinkering is probably the most important feature of innovators.

As a contrast, Ridley offers the cautionary tale of the nuclear energy sector as one impacted by the lack of opportunity to learn using trial-and-error:

"In terms of its energy density, nuclear is without equal: an object the size of a suitcase, suitably plumbed in, can power a town or an aircraft carrier almost indefinitely..."

Yet today the picture is of an industry in decline, its electrical output shrinking as old plants close faster than new ones open, and an innovation whose time has passed, or a technology that has stalled. This is not for lack of ideas, but for a very different reason: lack of opportunity to experiment. The story of nuclear power is a cautionary tale of how innovation falters, and even goes backwards, if it cannot evolve. The problem is cost inflation..."

The industry remains insulated almost entirely from the one known human process that reliably pulls down costs: trial and error. Because error could be so cataclysmic in the case of nuclear power, and because trials are so gigantically costly, nuclear power cannot get trial and error restarted. So we are stuck with an immature and inefficient version of the technology, the pressurized-water reactor..."

3. You can't stop an idea whose time has come

"The coincidence of timing is strange, but quite characteristic of inventors. Again and again, simultaneous invention marks the progress of technology as if there is something ripe about the moment."

Corollary: Sometimes the world may not be ready for a new idea

An idea is not a standalone thing. Like a cog, it needs to fit in the wider ecosystem. That ecosystem needs to be ready.

For instance, Ridley talks about wheeled suitcases:

"Clearly, the problem was not a lack of inspiration. Instead, what seems to have stopped wheeled suitcases from catching on was mainly the architecture of stations and airports. Porters were numerous and willing, especially for executives. Platforms and concourses were short and close to drop-off points where cars could drive right up. Staircases abounded. Airports were small."

The rapid expansion of air travel in the 1970s and the increasing distance that passengers had to walk created a tipping point when wheeled suitcases came into their own.

The lesson of wheeled baggage is that you often cannot innovate before the world is ready. And that when the world is ready, the idea will be already out there, waiting to be employed..."

I loved that last line – as an entrepreneur, you need not even ask: What can I invent? You can just explore – what idea is already out there, but was perhaps too early for its time?

4. Not all inventors end up wealthy

"I have chosen to tell the stories of Newcomen, Watt, Edison, Swan, Parsons and Steinsberger, but they were all stones in an arch or links in a chain. And not all of them ended up wealthy, let alone their descendants. There is no foundation named after any of them today and funded by their wealth."

They may not have ended up wealthy, but probably many of them were doing it for the thrill of innovating itself. Having said that, there is a tenuous link between creating something new and useful... and being able to profit from it.

5. There's a long and hard road to turn a discovery/invention into an innovation

Paraphrasing Peter Thiel, you may have the product, but do you have the distribution?

Ridley mentions the case of penicillin, and how it took a lot of work after its (lucky) discovery to make it a global success:

"(The results of trying) penicillin as a topical antiseptic applied to infected wounds were disappointing. Nobody yet realized that it worked best if injected into the body. Also, it was hard to produce in quantities or to store. Notoriously, in 1936, the pharmaceutical company Squibb concluded that 'in view of the slow development, lack of stability and slowness of bacterial action shown by penicillin, its production and marketing as a bactericide does not appear practicable.' So penicillin languished as a curiosity..."

The story of penicillin reinforces the lesson that even when a scientific discovery is made, by serendipitous good fortune, it takes a lot of practical work to turn it into a useful innovation."

Incidentally, startups are often told – create painkillers, not vitamins. Well, penicillin (an antibiotic) is as close

as it gets to being a painkiller. And yet it struggled to get acceptance...

The book has several such high value lessons on how innovation actually happens. In addition to these lessons, it's also got a great set of storytelling techniques to learn from.

Several Storytelling lessons

Here are four techniques that stood out for me: .

1. Mystery/buildup

A good storyteller never lets a surprising fact go without a drumroll-type announcement.

For instance, instead of simply saying:

"The first controlled conversion of heat to work was the most important event in the history of humankind"

...here's what Ridley says:

"Possibly the most important event in the history of humankind, I would argue, happened somewhere in north-west Europe, some time around 1700, and was achieved by somebody or somebodies (probably French or English) – but we may never know who. Why so vague? The event I am talking about is the first controlled conversion of heat to work, the key breakthrough that made the Industrial Revolution possible if not inevitable and hence led to the prosperity of the modern world and the stupendous flowering of technology today."

The buildup he uses creates immense curiosity around the concept... and also makes you appreciate it more.

2. Clutter breaking insights

When you research such a wide array of material, you would naturally be pondering about them all the time. During such periods of reflection, you might come across a gobsmacking insight that suddenly explains a lot in a surprising yet simple way.

This is one such insight from the book:

"The main theme of human history is that we become steadily more specialized in what we produce, and steadily more diversified in what we consume: we move away from precarious self-sufficiency to safer mutual interdependence."

Ponder on that a bit!

3. Surprise - using norm and variance

Which form of energy is the most dangerous? Is it:

- Coal
- Biofuels
- Gas
- Hydro
- Solar
- Wind
- Nuclear

Surely, your answer would be 'Nuclear'?

Surprise! It is the lowest, according to one study cited by Ridley:

"According to one estimate, per unit of power, coal kills nearly 2,000 times as many people as nuclear; bioenergy fifty times; gas forty times; hydro fifteen times; solar five times (people fall off roofs installing panels) and even wind power kills nearly twice as many as nuclear. These numbers include the accidents at Chernobyl and Fukushima."

Wow.

4. Fascinating incidents

The chapter on food is incredibly deeply researched. Ridley dives into the history of what drove the 'Green Revolution' which ensured that India (and other populous, poor countries) did not see mass starvation (something which was predicted by many leading scientists of that time).

	<p>Here's Ridley sharing the story of an incident between the food scientist, Normal Borlaug and Ashok Mehta, a senior Indian government official:</p> <p><i>"Borlaug's long campaign culminated in a stormy meeting on 31 March 1967 with the deputy prime minister and head of planning, Ashok Mehta. Borlaug decided to throw caution to the winds. In the midst of an argument, he yelled: 'Tear up those five-year plans. Start again and multiply everything for farm support three or four times. Increase your fertilizer, increase your support prices, increase your loan funds. Then you will be closer to what is needed to keep India from starving. Imagine your country free of famine . . . it is within your grasp!'"</i></p> <p><i>Mehta listened. India doubled its wheat harvest in just six years."</i></p> <p>A minor quibble</p> <p>One minor quibble about the book: In some parts Ridley's writing assumes that the audience 'gets' science terms. For instance he says:</p> <p><i>"He redesigned dynamos to generate electricity from turbines and within a few years the first electric grids were being built with larger and larger Parsons turbines."</i></p> <p>Reading this, I was like: "What's a dynamo?" Surely a writer cannot assume that all readers would know that.</p> <p>Overall though, 'How Innovation Works' is a must-read for anyone interested in knowing about this fascinating topic.</p>
<p><u>'Effective Data Storytelling: How to drive change with data, narrative and visuals' by Brent Dykes</u></p>	<p>I've been studying the craft of data storytelling for more than 15 years now and have been deeply influenced by several books.</p> <p>Allow me to take you through a brief history of my learning, in the order in which I read the books (The years in the brackets denote when I read the book, not when it was released).</p> <p><u>"The McKinsey Way"</u> (2005) was handed over to me by one of my bosses at my first job, post MBA (I think it was <u>Monika</u>!). It blew my mind. I mean, it laid out, step by step, the entire consulting process. My biggest takeaway from the book: you need to have a set of intelligent hypotheses when you are researching and analysing data.</p>

"[Presenting to Win](#)" by Jerry Weissman (gifted by another boss, [Mukesh](#)) is a good, though now dated, read. It taught me the importance of figuring out the right start point (Point A) for your data story.

"[Made to Stick](#)" (2009) by Chip and Dan Heath is the most influential book I've ever read. I learnt the importance of six key story elements - which I still remember because of the easy mnemonic used by the authors. As per the book, sticky ideas are:

Simple to understand

Unexpected (the most powerful concept)

Concrete

Credible

Emotional

Stories

Made to Stick was gifted to me by my colleague and good friend, [Rohan Desai](#) and in turn, is the book that I've gifted the most to others! It's a classic.

After Made to Stick, there was a longish break, and I picked up the next set of books once I started formally training the subject.

"[Storytelling with Data](#)" (2016) by Cole Nussbaumer Knaflic has the distinction of being the first to coin the term in its title - and subsequently, hoard all Google search results of that keyword!

The book is incredibly useful in one very specific (and narrow) aspect of data storytelling - how to create visual hierarchy in your slides, specifically charts, so that readers can 'get' your data-story quickly.

However, for a book called 'Storytelling with Data' the book is unpardonably weak on the 'Narrative' aspect - which to me is the most important element of the craft.

The immense success of this book is a testament to the dominance of data-visualisation in the data-storytelling space. It also tells you something about the concept of 'storytelling': the blessed word has several interpretations. Every person has their own definition of the term!

Net net, "Storytelling with Data" is great for learning about visual representation and hierarchy. But if you pick it up hoping to get a comprehensive primer on the subject, best of luck! It's a classic case of an evocative description of the trunk of the elephant... being presented as the whole elephant.

["The Pyramid Principle"](#) (2016) by Barbara Minto is the first (and last) book on story frameworks and logical writing you will ever need. Essential stuff.

Having said that, for a book on writing well, it is not... written very engagingly...?

Then came ["Data Story"](#) (2019) from the storied house of Duarte (the McKinsey of the storytelling world?). It came at a time when I had gotten fairly established in the field and was hungry for more interesting material, so I had great expectations from the book. I was like, "C'mon, wow me".

You could say that my expectations were met, to some extent?

Don't get me wrong. I think it's a great book for someone getting into the craft. In parts it is sublime... in parts banal and in some parts it is surprisingly mundane (at one point, it gets into a long list of exclamatory words you can use to express surprise)!

Overall, for someone steeped into the subject for several years, it is... a bit underwhelming. I did incorporate a few new practices (especially on the visual front), but it did not alter my thinking in a foundational way.

Brent Dykes' ["Effective Data Storytelling"](#) (2021) kinda did that.

Brent (who I subsequently managed to interview for my podcast - yay! - episode coming later) is a deep,

fundamental thinker. He *gets* data and is also a keen and curious student of the craft of storytelling.

Brent's assertions in the book are based on rock-solid research. On top of that he has also come up with some clutter-breaking insights. Let's dig into a few of them.

Key insights from the book

Here are three most striking ones (all quotes from the book):

1. A data story needs data (duh):

Brent has a simple three-part structure for a good data story: Data, Narrative and Visuals.

I've always had a three-part structure too: Narrative, Visuals and Delivery.

So, mine didn't have 'data' and his doesn't have 'delivery'.

Now, I still believe that 'delivery' (your verbal presentation) is a critical element, so I will retain that. But when I saw 'data' among his list, I was like - isn't that obvious? Wouldn't every data story, umm, have data?

Umm, no.

Often, when we are presenting our data findings, we have an agenda to push, a point of view to share, an unconscious bias that drives us - essentially a narrative in our heads that influences the story.

Make no mistake - it *is* critical to have a narrative. In fact data without narrative is the great shortcoming that plagues almost ALL data-heavy presentations in the corporate world.

But there is a problem on the other end of the spectrum too. We often have a narrative in our heads and don't bother to back it with data.

I remember a real-life instance. In 2017, I was working with a client in the air travel space and one of the

division managers (let's call him Ankit) was in-charge of the Air-Cargo business to East Asia. In the previous quarter, his division's revenue had seen a smart increase. The reason? Well, Ankit was convinced it was because of the new dynamic pricing policy his team had implemented that quarter.

Turns out, he was wrong.

A closer examination of the data revealed that much more than price, it was a change in the *mix* of cargo that had had the maximum impact on revenue. For Ankit though, his mind had been made – his narrative overrode the data.

In the book, Brent devotes an entire chapter to the importance of having a solid data foundation. He says that your data sources must be:

- Relevant: The data should be applicable to the problem at hand
- Trustworthy: The data should be from credible sources and should retain its integrity in the compilation, cleaning up and analysis process

He also lists down how to avoid some common fallacies in the data gathering and analysis process.

2. Messages < Insights < Valuable insights

For the longest time I have been teaching the importance of identifying and crafting clear messages from the data. While that remains important, I learnt a nuance about the different *types* of messages from this book.

Often we use the word 'insight' loosely – referring to it as a critical finding from the data.

Brent uses a definition by psychologist Gary Klein, to describe what is an insight:

An insight is an "unexpected shift in the way we understand things" – Gary Klein

Another evocative description by the same thinker:

"Intuition is the use of patterns we've already learned, whereas insight is the discovery of new

patterns"

As I was reading these parts, I realised - hang on, he is essentially saying that a message, to be called an 'insight', has to convey something new i.e. it must be surprising or unexpected!

I have been teaching about the importance of surprise and norm-variance (as a part of messaging) for years now. But now, I could connect the two and clear say: Message+Surprise = Insight.

But that's not all - there may be surprising findings which the audience doesn't care about - because they don't move the needle for them. Which is where the next factor comes in: value.

Some findings may be insights (i.e. new), but not really valuable for the audience. What makes an insight valuable is its ability to move the needle on a **key business metric** that the audience cares about.

Based on this clarity, I created a 2x2 chart (what else) to explain the different types of messages:

3. Not every data presentation needs to be a 'Data Story'

A few months back, someone asked me in an interaction: When should we not use a Story?

My response to the question was not very convincing. I said something on the lines of: "If you refer to a 'human story', then you would use it only if the context, audience and objective warrants it. But if you talk about storytelling as a skill, you need to be using it all the time."

After reading Brent's book, I have a better answer now (although it's for the related question: When should we not use a 'Data Story'?)

Let's face it - putting in the time and effort to craft a clear, comprehensive, visual data story is a lot of work. You should do it only if the stakes are worth it.

In the book, Brent defines those stakes using a (here we go again) 2x2 chart. And he calls it 'The Story Zone' Not every insight is worth creating a data story for. You don't need to create an elaborate story, if your insight

is:

- Of low value: Why bother wasting the audience's time?
- Easy to understand: The findings can be shared with the audience over an email/phone call. Why bother wasting their time with a formal presentation?

Data stories are most essential for insights which are both high-value and hard to understand/believe for the audience - which make up the 'Story Zone'!

This insight itself was worth the price of the book for me.

Other striking points about the book

1. Great collection of stories about data stories

Apart from several such foundational insights, Brent also includes several real-life data-stories in his book (many of them which are famous ones from history). For instance, one chapter narrates contrasting stories that illustrate the power of data storytelling:

- The tragic 19th century story of the obstetrician Dr. [Ignaz Semmelweis](#), who was unsuccessful in convincing his fellow medical practitioners to wash their hands more often, despite having compelling evidence to make a strong case. His failure in persuading them led to several avoidable deaths...
- The uplifting story of Florence Nightingale (also from the mid-19th century), who apart from being a once-in-a-generation nurse, was also a brilliant data storyteller. Her ability to convince a deeply patriarchal military and medical establishment to adopt her recommendations led to fundamental changes in the practice and saved thousands (if not millions) of lives.

In addition, Brent also includes his own personal stories of successes and failures when presenting data stories.

2. Superb compilation of quotes on storytelling

Despite being steeped in the subject, I came across several quotes on storytelling which I hadn't encountered before.

For instance,

"Data! Data! Data!", he cried impatiently, "I can't make bricks without clay" - Sherlock Holmes by Sir Arthur Conan Doyle

This quote especially resonated given [this](#).

Or this one:

"A wealth of information creates a poverty of attention" - Herbert A Simon

and this:

"Address the eye without fatiguing the mind" - Alexander von Humboldt (German cartographer)

In short: Brent Dykes has not written a book on data storytelling.

He has written THE book on data storytelling.

What could be better? It is a dense read at times. And the multiplicity of frameworks does make it difficult for readers to place the concept they are reading in the overall context.

But if you are interested in learning this craft, this is one book that you must read and re-read.

PS: Incidentally, this book was also a gift! My colleague, [Sanket](#), wanted to give me something as a gift and I suggested this book, given that it'd been on my to-read list for a long time.

It's amazing how much book-gifts can influence your life :)

'Tamarind City:
Where Modern India
began' by Biswanath

I thought I'll mix up my reading diet a bit with some easy-reading non-fiction and picked up this book on a whim. I'm so glad I did.

Ghosh

Tamarind City is an ode to the city of Chennai. Now, despite being a TAMILIAN, my connection with the city is tenuous.

My wife has a lot of relatives there and I have great memories of visiting them over the years. Another fond memory is attending one of the famous December Music Season 'kutchcheris' with a music-loving relative...and once taking a charming walking tour by [Storytrails](#).

But despite all that, I hardly knew the city (as much as Pune, Mumbai or Delhi).

This book changed that - and made me want to visit Chennai. It made me want to stroll through the beach at Marina, walk the lanes in Triplicane and Mylapore, explore the historic Fort St. George... and most importantly, indulge in some authentic sambhar with kara dosai and filter coffee at Saravana Bhavan. (The Udupi restaurants - God bless them - have absolutely ruined sambhar).

'Tamarind City' made me homesick for Chennai.

The book effortlessly straddles and celebrates Chennai's rich colonial past (of which, shockingly little is known) and its tech-meets-tradition present.

It also does a great job of giving Chennai it's due position as the cradle of modern India's institutions (which the present-day city is surprisingly shy to celebrate). Here's the author:

... almost every modern institution in the country—be it education, engineering, medicine, the army, or judiciary—has its roots in Fort St George. Modern India originated in Fort St George.

Many clerks and soldiers and administrators who came to serve in Madras as non-entities were catapulted to unbelievably high positions—high enough not only to decide the destiny of India but also of Britain. During the eighteenth and nineteenth centuries, a number of illustrious Britons, including prime ministers, commanders-in-chief, governors-general, members of Parliament and bureaucrats had one thing in common—the Madras connection.

Present-day Madras, that is Chennai, is somehow shy of celebrating this connection. It would make far

	<p><i>more sense to have the entire Fort vacated so that it could be restored and turned into a museum that would welcome visitors with the signboard, 'Modern India began here.'</i></p> <p>Apart from the history, the book has some lovely interviews with leading present day Chennai celebrities - including the poet Meena Kandasamy, the Carnatic vocalist TM Krishna and the IVF specialist, Dr. Kamala Selvaraj - as well as ordinary citizens.</p> <p>Biswanath has a languid, easy writing style. He often does nothing else but get out of the way between the subject and the reader... and lets the story gently unfold in front of you.</p> <p>A highly readable, engaging book on one of India's most fascinating major cities.</p>
<p><u>'Last Chance to See' by Douglas Adams and Mark Carwardine</u></p>	<p>In my podcast interviews I often ask my guests about books that influenced them. Praveen Gopal Krishnan of The Ken recommended this book to me.</p> <p>I knew of Douglas Adams and the iconic 'Hitchhikers Guide' series, but had never gotten around to reading it. (I'd given up reading fiction a long time ago).</p> <p>But then this was non-fiction... and it was humour. Two words you don't often see in the same sentence.</p> <p>I read it - and I loved it!</p> <p>Here's the premise of the book. In 1985, the BBC decided to make a documentary series called 'Last Chance to See' about endangered species on the planet.</p> <p>I guess it was a time when humankind was becoming more aware of the destruction they had caused on the planet, especially to exotic plant and animal species.</p> <p>From the book:</p>

For millions of years, on average, one species became extinct every century. But most of the extinctions since prehistoric times have occurred in the last three hundred years. And most of the extinctions that have occurred in the last three hundred years have occurred in the last fifty. And most of the extinctions that have occurred in the last fifty have occurred in the last ten. It is the sheer rate of acceleration that is as terrifying as anything else.

To raise awareness about this crisis, the BBC wanted to create rich, deep profiles of some species which were on the brink of extinction. These included the nocturnal aye-aye lemur in Madagascar, the flightless kakapo in New Zealand and the fearsome komodo dragon in Indonesia. For leading this mission, they chose a highly experienced zoologist named Mark Carwardine.

What was remarkable was who they decided to pair him with.

Not a botanist, not a local expert and certainly not a celebrity to add glamour value.

They chose a storyteller.

Douglas Adams - who had till then only written humourous science-fiction - was an inspired choice. For one, he was a passionate environmentalist. Two, despite being a successful and affluent writer, he didn't mind the rigours of travel to remote corners of the planet where one had to sleep on hard floors and endure rickety forms of transport. And three, it helped that he came with no prior knowledge of the animal kingdom. That meant applying a fresh set of eyes.

As he writes in the beginning:

My role for which I was entirely qualified, was to be an extremely ignorant non-zoologist to whom everything that happened would come as a complete surprise.

Adams may not have known anything about the animal kingdom. But boy, did he knew a thing or two about telling a good story.

Let's explore some of the storytelling techniques (with examples) he used in the book.

Storytelling techniques used in the book

1. Contrast

Adams does a masterful job of using contrast. For instance (contrast highlighted in bold):

Mark, who had gone out ahead to make the arrangements for the expedition, met me for the first time there and explained the set-up.

"Everything's gone wrong," he said.

I also loved this:

'Could we perhaps take a snake bite detector kit with us to Komodo?'

*'Course you can, course you can. Take as many as you like. **Won't do you a blind bit of good because they're only for Australian snakes.***

'So what do we do if we get bitten by something deadly, then?' I asked.

He blinked at me as if I were stupid. 'Well what do you think you do?' he said. 'You die of course. That's what deadly means.'

And this:

*If you took the whole of Norway, scrunched it up a bit, shook out all the moose and reindeer, hurled it ten thousand miles round the world and filled it with birds **then you'd be wasting your time, because it looks very much as if someone has already done it.***

Fiordland, a vast tract of mountainous terrain that occupies the south-west corner of South Island New Zealand, is one of the most astounding pieces of land anywhere on God's earth, and one's first impulse, standing on a cliff top surveying it all, is simply to burst into spontaneous applause.

2. Striking analogies:

For instance:

Richard had trained in the Philippines, working to save the Philippines monkey-eating eagle, a wildly

improbable-looking piece of flying hardware that you would more readily expect to see coming in to land on an aircraft carrier than nesting in a tree.

And this:

Island ecologies are fragile time capsules. So you can imagine what happens when a mainland species gets introduced to an island. It would be like introducing Al Capone, Genghis Khan and Rupert Murdoch into the Isle of Wight – the locals wouldn't stand a chance.

Rupert Murdoch, hehe.

And this one:

As zoologists and botanists explore new areas, scrabbling to record the mere existence of species before they become extinct, it is like someone hurrying through a burning library desperately trying to jot down some of the titles of books that will now never be read.

Uff, that's an evocative analogy.

3. And that humour

Here's his description on being on the road in China (remember, this is the late 1980s):

What I could never get used to, however, was this situation: the vehicle in front of you is overtaking the vehicle in front of him, and your driver pulls out and overtakes the overtaking vehicle, just as three other vehicles are coming towards you performing exactly the same manoeuvre. Presumably Sir Isaac Newton has long ago been discredited as a bourgeois capitalist running dog lackey.

Some of the best laughs are from when he sees the humour in stressful situations. For instance:

The Komodo lizards are also big. Very big. There's one on Komodo at the moment which is over twelve feet long and stands about a yard high, which you can't help but feel is entirely the wrong size for a lizard to be, particularly if it's a man-eater and you're about to go and share an island with it.

And another one:

He was tall, dark and laconic and had a slight nervous tic. He explained that he used to be just tall, dark and laconic, but the events of the last few days had rather got to him.

At several points in every chapter, I was laughing out loud. That's not something I can say for most of the

	<p>books I read.</p> <p>'Last Chance to See' is a hilarious, warm and insightful read. I'd highly recommend it for young readers too. (Fair warning: It does have references to animal mating, so older than 15 probably?).</p> <p>Small quibble: I felt there was some subtle condescension - to put it mildly - especially in the chapters featuring China and Africa. We need to remember that this was written in the 1980s though. Perhaps if he was writing in a different time, he would have been more cognizant.</p> <p>(PS: For those inclined to watch rather than read, here's a video of Adams giving a talk about this book).</p>
<p><u>'Decoding Greatness: The Hidden Strategy for Achieving Extraordinary Success' by Ron Friedman</u></p>	<p>The year was 1983, and Steve Jobs was incensed.</p> <p>He had realised that a certain Bill Gates of Microsoft had gone ahead and launched his own operating system, something called Windows.</p> <p>Here's how the author describes what happened next:</p> <p><i>Jobs was livid. After all, Gates wasn't a competitor—he was a vendor. It was almost too baffling to comprehend. Jobs had personally handpicked Microsoft to develop software for Apple's computers. He'd been good to Gates. He had traveled with him to conferences, invited him onstage at Apple events, treated him as a member of his inner circle. And this was how he was being repaid?</i></p> <p><i>"Get Bill Gates down here," he demanded of his Microsoft handler. "Tomorrow!" It didn't matter that Gates was at the other end of the country. Jobs got his wish.</i></p> <p><i>The following day, Apple's boardroom filled with its top brass. Jobs wanted bodies—a show of force when Microsoft's team arrived. A showdown was about to take place, and he wasn't about to be outnumbered.</i></p> <p><i>He need not have bothered. To everyone's surprise, Microsoft didn't send a team. Gates arrived alone,</i></p>

ambling awkwardly in to face the firing squad.

Jobs wasted little time tearing into him. "You're ripping us off!" he yelled, his underlings glaring, all eyes on Gates. "I trusted you, and now you're stealing from us!"

Gates took it in quietly. He paused a moment, not once looking away. Then he casually delivered a devastating line, rendering the entire room speechless: "Well, Steve, I think there's more than one way of looking at it. I think it's more like we both had this rich neighbor named Xerox, and I broke into his house to steal the TV set and found out that you had already stolen it."

It turns out, it wasn't just Gates who was copying ideas. Jobs had done it too. Their target: the famed Palo Alto Research Centre (PARC) of the Xerox Corporation.

It was the Xerox PARC which had first developed the personal computer, featuring the then-revolutionary graphical user interface. Why did they not launch it then?

Here's that critical part of the story:

Xerox had a blind spot. Its executives, many of whom had come of age in the 1940s and '50s, considered typing the domain of secretaries. They simply could not conceive of a world in which computers were a household item. Which may explain why they were so cavalier about granting demonstrations of the Alto to many visitors, including one in 1979 to Steve Jobs.

Jobs was instantly captivated. "You're sitting on a gold mine," he told the Xerox engineer tasked with showing him the Alto. As the presentation went on, Jobs could barely sit still. He grew increasingly animated, visibly struggling to contain his excitement. At one point he blurted out, "I can't believe Xerox is not taking advantage of this."

Afterward, he jumped into his car and sped back to the office. Unlike those plodding Xerox executives, he fully recognized the significance of this invention. Jobs believed he'd been offered a glimpse of the future, and he wasn't about to wait until Xerox figured it out. "This is it!" he told his team. "We've got to do it!"

Overnight, developing a mouse-driven graphic user interface became Apple's central focus. Except they weren't trying to copy the Alto. Jobs thought he could do better. He would simplify the mouse

down to a single button. He would leverage the computer's graphics capabilities to produce artistic fonts. And he would find a technological solution to slashing the Alto's exorbitant price tag, bringing personal computers to the masses.

But before he could do any of that, Jobs would debrief his team. He would share everything he remembered about the Alto, detailing its features, capabilities, and design. They were going to work backward, mapping out what it did to approximate how it had been assembled, with the goal of leveraging that information to develop a groundbreaking new machine.

That gripping story is how social psychologist, [Ron Friedman](#) starts this book on reverse-engineering greatness.

'Good artists copy. Great artists steal.' Steve Jobs was fond of using this quote. He was [probably misquoting Picasso](#), who was himself basing it on someone else's words – all of which seem appropriate for this quote.

We all take inspiration from the work and behaviour of others. This book teaches us how to get really good at that game.

I was introduced to this book when Tiago Forte did an interview with its author. When Tiago recommends something, you listen. And I'm glad I did.

In the book, Ron offers a framework with several actionable tactics to improve the way we learn from experts.

Now, I know what you are thinking – copying is a terrible thing – it pays to be original and no one likes derivative work! But Ron makes two points to dispel that belief.

1. He shares several examples of famous artists who copied from other greats

For instance, from literature:

...copywork, a technique popularized by Benjamin Franklin and practiced by literary greats F. Scott Fitzgerald, Jack London, and Hunter Thompson. It involves studying an exceptional piece of writing,

setting it aside, and then re-creating it word for word from memory, later comparing your version to the original.

And painting:

Many of the painters we now celebrate as creative geniuses devoted a significant portion of their careers to copywork. Claude Monet, Pablo Picasso, Mary Cassatt, Paul Gauguin, and Paul Cézanne all developed their skills by copying the works of the French painter Eugène Delacroix. Delacroix himself spent years copying the Renaissance artists he grew up admiring. And even those Renaissance greats—Raphael, Leonardo da Vinci, Michelangelo—honed their craft by reproducing the work of their fellow artists, including one another.

Also, non-fiction writing:

Another (technique), popular among nonfiction writers, is to leaf through the endnotes section at the back of a book and examine the original sources an author used to construct their piece. It's the writer's equivalent of enjoying a delicious meal at a restaurant and then raiding the chef's pantry to uncover the ingredients.

2. Ron also points out a nuance in the argument between copying and reverse engineering

In a majority of cases, copying or over-relying on established recipes is a losing strategy that rarely results in memorable outcomes. Just as dangerous, however, is ignoring proven formulas altogether and overwhelming audiences with a flood of originality.

And later:

The alternative to reverse engineering isn't originality. It's operating with intellectual blinders.

After establishing the need to apply reverse engineering principles, Ron shares several actionable tactics to do it well.

I'll be honest - I don't agree with all of his suggestions. But some of them have been eye-opening. Here are a few which I found most influential.

1. Become a collector

Let's say you really admired something you read online. Normally you might read it and then continue browsing. What Ron suggests is to have a system to store it for later use:

The first step to achieving greatness is recognizing it in others. When you come across examples that move you, capture them in a way that allows you to revisit, study, and compare them to other items in your collection. When we think of collections, we tend to think of physical objects, like artwork, wine, or stamps. That definition is too limited. Copywriters collect headlines, designers collect logos, consultants collect presentation decks. Tour your collection as you would a private museum that you visit to find inspiration, study the greats, and remind yourself to think big.

Apps like Evernote and Notion are great to capture, store, tag and easily access your private collection. Head over to [Tiago Forte's blog](#) if you'd like to explore more on this front. This [article](#) is a good place to start.

2. Spot the differences

Having spotted something great, Ron asks us to go one step further:

To learn from your favorite examples, you need to pinpoint what makes them unique. When you encounter works that resonate with you, make a habit of reflecting on a single question: "What's different about this example?" By comparing the stellar to the average, you can pinpoint key ingredients that give a work its flavor and identify particular elements that can be incorporated or evolved elsewhere.

This resonated with me, since Ron's essentially asking us to look for norm-variance - something which I have coined and [written about](#) before.

3. Think in blueprints

This is the core part of breaking down good work - trying to find the structure and principles which underpin its creation.

Nearly every example you admire was developed using a blueprint: chefs utilize recipes, writers employ outlines, web designers work off site maps. Instead of attempting to re-create a fully realized

work, inject a level of abstraction and draft a high-level outline. By working backward and crafting a blueprint, you will find patterns that demystify complex works.

And:

Reverse outlining is traditional outlining's sneakier, more provocative cousin. It doesn't involve listing the important arguments you intend to include in the future. Rather, it entails working backward and outlining the major points contained within a completed piece.

It works because it prompts us to do something unnatural: take in the entirety of a piece all at once. That's vastly different from the way we typically experience a creative work. When we read a book or watch a movie, we can't help but focus on a small sliver of the performance—the scene unfolding in one particular moment.

We can finally stop staring at the brushstrokes and textures and cracks, take a few steps back, and admire the complete canvas.

The Pyramid Principle is a great tool to use if you'd like to create a reverse outline. Here's the [e-book](#) that I created with examples of how this can be applied to speeches, presentations etc.

Finally he cautions us to take inspiration from others' work, but give it our own unique twist:

The right question, therefore, is not "How do I write like Malcolm Gladwell?" It's "How do I take Gladwell's formula and make it my own?"

4. Reflect

I've written about [the importance of reflection](#) for knowledge workers. This book suggests journalling as a technique to reflect on your learnings more deliberately.

Developing a daily practice to pause, reflect, and strategize can yield substantial benefits that compound over time. We've already seen how reflective practice can foster quicker learning, higher confidence, and deeper knowledge. That's just the beginning. Writing about daily events has also been shown to help us process emotions, quiet anxiety, and diminish stress. By placing our own narrative spin on events, we no longer feel as if events are happening to us. Writing about our lives tips the scales, restoring our sense of control.

Journaling by hand, in particular, forces us to slow down. Because most adults think faster than they

write, we're compelled to pause and reflect as we wait for our hand to catch up, examining our thoughts in a way that rarely occurs on a busy day. This simple practice can yield surprisingly profound insights, not unlike when a therapist repeats your words back to you, illuminating a hidden motive or a limiting belief.

He then offers a specific way to execute this: the five-year journal.

I want to highlight a particular kind of journaling that I have found to be especially useful in promoting self-reflection, learning, and skill development: the five-year journal.

A number of different versions of these journals are sold in bookstores, and they all have one thing in common: they feature five blocks for entries on the same calendar date—one for each consecutive year. Each day, journalers handwrite a few lines in the space provided. Then, one year after starting, something magical happens. They revisit the page of their original entry and, after entering a few observations on the present day, have the opportunity to review the entry they wrote on the same day the previous year.

I give every coaching client I work with a five-year journal because I have found it to be an invaluable tool for discovery and growth. In addition to sparking self-reflection through nightly journaling, rereading entries strengthens memory for past events and helps you detect patterns in both your professional and personal lives.

I found this practice to be a fascinating one, and was inspired to start some form of journalling after reading about it. And so I did!

So, it's not handwritten and I'm not using the five-year journal... but it is something that I try to do everyday and something that I'm quite excited about. I will write about it in the subsequent weeks, once I have continued to do it for a reasonable period of time!

In addition to the above, the book offers several other techniques to improve the way we learn from good work. As mentioned earlier, not all of them resonated with me. But the way I look at it, if a book can give me

	<p>even one good idea which alters how I work or live, it has more than fulfilled it's job.</p> <p>And this book has done that.</p>
<p><u>'Seeing What Others Don't: The Remarkable Ways We Gain Insights' by Gary Klein</u></p>	<p>Two cops were on a routine patrol when they saw something unusual.</p> <p>Here's how the author describes what happened next:</p> <p><i>As they waited for the light to change, the younger cop glanced at the fancy new BMW in front of them. The driver took a long drag on his cigarette, took it out of his mouth, and flicked the ashes onto the upholstery.</i></p> <p><i>"Did you see that? He just ashed his car," the younger cop exclaimed. He couldn't believe it. "That's a new car and he just ashed his cigarette in that car."</i></p> <p><i>That was his insight. Who would ash his cigarette in a brand new car? Not the owner of the car. Not a friend who borrowed the car. Possibly a guy who had just stolen the car.</i></p> <p><i>As the older cop described it, "We lit him up. Wham! We're in pursuit, stolen car. Beautiful observation. Genius."</i></p> <p>That young cop had an 'insight' - an A-ha moment - which led him to identify and apprehend a car thief.</p> <p>We get insights all the time. Insights that help unknot tricky problems. Insights which enable us understand the world better. And insights which help us do better at work and in life.</p> <p>But do we ever stop to think and wonder: Hey, how am I actually getting this insight? And can I do something to actually increase my insights?</p> <p>Luckily for us, Prof. Gary Klein, a cognitive psychologist who has studied the science of decision-making in real-world situations, decided to do a deep-dive into the world of insights.</p> <p>First up, his definition of an insight is really simple yet powerful: 'An insight is an unexpected shift to a better</p>

story'.

I had come across this definition in an earlier [book I had reviewed](#) ([Effective Data Storytelling](#) by Brent Dykes) and had then gotten inspired to pick up Klein's book.

I also liked the way Klein frames why it is important to encourage better insight-generation. So, insights are supposed to aid decision making. And in the world of decision-making, the last 20-odd years have been dominated by the field of behavioural science, especially focused on cognitive biases.

The avalanche was kicked off by the work of psychologists Daniel Kahnemann and Amos Tversky (Kahnemann won the Economics Nobel in 2002), and has been carried forward by several luminaries, including another Nobel laureate, Richard Thaler. Several books have been written on the topic - from the magisterial 'Thinking Fast and Slow', to the bestsellers 'Predictably Irrational' by Dan Ariely and 'Nudge' by Richard Thaler. There have also been mass-market paperbacks such as 'The Art of Thinking Clearly'.

All of these works have focused on one aspect of human thought: our propensity to make systematic errors of judgement in decision-making. These errors are called cognitive biases and there is a [long list of them](#).

Gary Klein thought these get too much importance. He wanted to turn the spotlight on another factor.

A factor that doesn't focus on our biased thinking. A factor that doesn't make us feel bad about our shortcomings. And a factor that actually inspires us to think better (rather than to just avoid mistakes).

He wanted to focus on insights.

Klein gives a simple equation that we should all be aware of:

[Performance Improvement = (Reduce Errors) + (Increase insights)]

For progress, humankind needs a balance of both the variables above. According to Klein, for too long we

have been focusing on the 'error reduction' part and haven't paid adequate attention to the 'increase insights' part. This book is a manual on how to do so.

What is remarkable about the book is the approach that Klein took to come up with his insight-generation model:

- Over several years, Klein put together a collection of 120 real-life stories of insight generation. These include mundane ideas generated over conversations at home, breakthroughs that led to remarkable innovations in science and staggering realisations that turned the tide of war
- He then studied these stories by categorising them under various heads and finding common patterns
- Finally, he came up with his own insight generation model

Klein boils down all insights into 5 categories - you could call them the 5Cs:

1. Connections

In this category, the thinker 'connects' a new piece of information in a different field and applies it to his or her own field. Here's the story from the book that illustrates the connection approach:

Martin Chalfie (was) conducting research on the nervous system of worms. One day, almost twenty-five years ago, he walked into a casual lunchtime seminar in his department at Columbia University to hear a lecture outside his field of research.

An hour later he walked out with what turned out to be a million-dollar idea for a natural flashlight that would let him look inside living organisms to watch their biological processes in action. Chalfie's insight was akin to the invention of the microscope, enabling researchers to see what had previously been invisible. In 2008, he received a Nobel Prize in Chemistry for his work.

Chalfie realised that he could use an idea from that lunchtime seminar on bioluminescence and apply it to his field of work. By doing so, he 'connected' an idea from one field with another seemingly disparate field... But a field which did have something in common with the former.

One of the most famous 'connection insights' is how the Ford Assembly line (probably one of the biggest inventions in manufacturing) was inspired by a visit to a Chicago meatpacking operation, where animal

carcasses were 'dis-assembled' as it went on a line.

2. Coincidences

Coincidence insights arise from observing several instances of an unusual occurrence, leading to a pattern. In the 1980s, Dr. Michael Gottlieb was a physician at UCLA, where he came across several unusual cases of patients with severely compromised immune systems:

When Michael Gottlieb encountered a second and then a third patient with a compromised immune system, he might have dismissed it. Instead he became suspicious. Something was going on, something he didn't understand, and he needed to monitor it more carefully.

Gottlieb didn't believe his patients had anything to do with each other. But the coincidence in their symptoms seemed important. And the men were all gay. Was there any significance in that? Quickly, the coincidence turned into a pattern, the deadly pattern of AIDS.

Coincidence insights tend to drive a lot of stereotypes. Beliefs like "People from X like to eat Y" or "All Xs tend to visit P" are driven by coincidence insights. These can, of course, be misleading.

3. Curiosities

Curiosities are similar to coincidences - they arise when we spot something unusual. But the key difference is it that it needs just one surprising occurrence instead of several for the thinker to investigate.

Wilhelm Roentgen's discovery of X-rays in 1885 came about through a curiosity. He was investigating cathode rays. He used a cardboard covering to prevent any light from escaping his apparatus. Then he noticed that a barium platinocyanide screen across the room was glowing when his apparatus discharged cathode rays despite the cardboard covering. That was odd. So he stopped his investigation to look more carefully at what this was all about. After several weeks Roentgen satisfied himself that the effect was not due to the cathode rays but to some new form of light. At the time, physicists appreciated a number of forms of radiation: visible, infrared, and ultraviolet. So X-rays could have been added to the list. But that didn't happen. X-rays were greeted with disbelief. Lord Kelvin labeled them an elaborate hoax. One reason for the resistance was that a number of people

used cathode ray equipment. If X-rays existed, surely others should have noticed them. (One researcher had noticed a glow but never accounted for it.) The skeptics eventually came around, and in 1901 Roentgen received the very first Nobel Prize in Physics.

Curiosity insights are driven by the 'Vuja De' mindset - the ability to spot the unusual in the mundane.

4. Contradictions

Contradiction insights arise when we find something that goes against a norm or deeply held belief.

If it sounds familiar to a Curiosity insight, here's Klein:

Contradictions are different from curiosity insights. Curiosities make us wonder what's going on, whereas contradictions make us doubt—"That can't be right."

The story of the cop figuring out about the stolen BMW was a Contradiction insight.

When the housing market was soaring in the US in the 2000s, some market experts were were deeply suspicious of the underlying fundamentals. Several of them believed that the 'irrational exuberance' in the market was contradictory with the ground situation and their basic reasoning.

Here's the story of Steve Eisman, a wall-street insider, portrayed by Steve Carrell in the movie 'The Big Short':

When Eisman investigated, he found that the lenders had learned a lesson from the 1998 subprime crash. It was just a different lesson than he expected. When the subprime bubble burst in the late 1990s, the lenders went bankrupt because they had made bad loans to unworthy applicants and kept too much of those loans on their books.

Instead of learning not to make bad loans, the industry had learned not to keep the risky loans on their books. They sold the loans to Wall Street banks that repackaged them as bonds, found ways to mask the riskiness, and sold them to unwary investors. That's when Eisman's Tilt! reflex went into overdrive. It reached even higher levels when he investigated the ratings agencies. In a conversation with a representative of Standard and Poor (S&P), Eisman asked what a drop in real estate prices would do to default rates. The S&P representative had no answer because the model the agency used for the

housing market didn't have any way to accept a negative number. Analysts just assumed housing prices would always increase.

5. Creative desperation

Sometimes insights emerge when we are in a desperate situation where we try several ideas till one works out.

Often, in such situations, when we are trying to solve a problem we find a breakthrough when we *let go* of a flawed assumption. Here's a classic example:

The box-candle puzzle challenges subjects in an experiment to attach three candles to a door. They are given three small boxes, one containing three candles, the second containing three tacks, and the third containing three matches. Most subjects try to tack the candles to the wall, but this strategy fails miserably.

The trick is to tack the boxes to the door and set the candles on them.

The flawed assumption: The boxes are just receptacles for the items and don't have any other role to play in the solution.

In this chapter, Klein narrates a thrilling story. In 1949, a group of firemen in Montana, US, try to put down a forest fire, but are unfortunately consumed by it instead. Not all of them though. Some lucky folks survived. One of them - the leader, Warner Dodge - did an act of unimaginable creative desperation:

Wagner Dodge survived through creative desperation—an ingenious counterintuitive tactic. To escape the fire, he started a fire.

Dodge lit a fire in front of him, knowing that this escape fire would race uphill and he could take refuge in its ashes. He wet his handkerchief from his canteen and put it over his mouth and nose, then dived facedown into the ashes of the escape fire to isolate himself from any flammable vegetation. He was saved with less than a minute to spare.

But he could not persuade anyone to join him in the ashes. None of the others could make sense of what he was doing. He had invented a new tactic, but he never had a chance to describe it to his crew. As one of the two survivors put it, upon seeing Dodge light a fire, "we thought he must have gone nuts."

Putting it all together

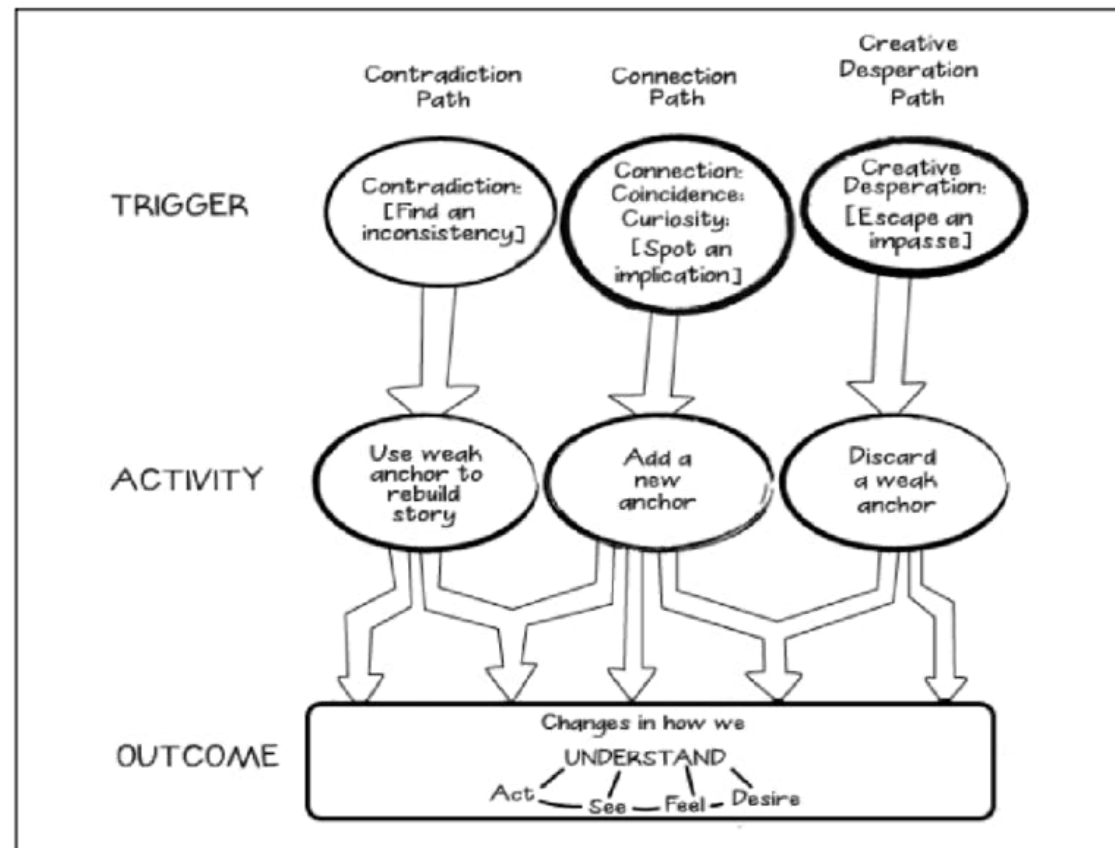
As per Klein's analysis, Connections and Contradictions were the most common approaches seen in these stories:

I found Connection insights in 82% of the cases. Contradictions showed up in 38% of the cases.

Coincidences played a role in 10% of the cases. Curiosities contributed to 7½%. Impasses and creative desperation were found in 25% of the cases.

(He's of course tagged individual stories with multiple categories, which is why it totals up more than 100%).

Finally, Klein combines all the insight pathways into a 'Triple Path Model of Insight'



Triple Path Model for Insights by Gary Klein

In addition to the above, the book also shares ideas on how to generate more insights for yourself and how to enable your teams and organisations to generate more insights.

It's not an easy task at an organisational level - and Klein is pessimistic about the insight-generation capacity of large entities... According to him, as organisations grow larger, they employ more resources on reducing errors rather than improving insights.

Unfortunately, the two arrows often conflict with each other. The actions we take to reduce errors and uncertainty can get in the way of insights. Therefore, organizations are faced with a balancing act. Too often they become imbalanced and overemphasize the down arrow. They care more about reducing errors and uncertainty than about making discoveries.

He gives the example of the CIA:

The intelligence community has a unit to enforce tradecraft, the Office of Analytical Integrity and Standards. Its job is to reduce mistaken inferences and unsupported conclusions. When I have asked senior officials in the intelligence community if there is a parallel office to encourage insights, all I get are blank stares. Not only is there no such office; the officials have trouble imagining why they would need one.

Insights are the origin of all progress. If we want to grow sustainably, as we navigate challenges in a VUCA world, we need all the good insights we can get.

This book is a great resource that tells you how.