

LEADING IN A **NON-LINEAR** **WORLD**



Building
Wellbeing,
Strategic, and
Innovation
Mindsets
for the Future

Co-author of *The New York Times* best seller
The Way We're Working Isn't Working

JEAN GOMES

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Table of Contents

[COVER](#)

[TITLE PAGE](#)

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[INTRODUCTION](#)

[PART 1: THE NEW SCIENCE OF MINDSET AND SELF-AWARENESS](#)

[CHAPTER 1: WHAT IS MINDSET?](#)

[CREATING A BIGGER INNER WORLD](#)

[CHAPTER 2: CONSCIOUSNESSES - OUR SENSE OF SELF](#)

[THE PREDICTING BRAIN](#)

[CHAPTER 3: WHAT YOUR BODY IS TELLING YOU](#)

[EMPATHY AND INTEROCEPTION](#)

[CHAPTER 4: RETHINKING EMOTIONS](#)

[CLASSICAL VS CONSTRUCTED VIEWS OF EMOTIONS](#)

[THE VALUE OF EMOTIONAL GRANULARITY](#)

[WHAT ARE POSITIVE EMOTIONS FOR?](#)

[THINKING MORE CLEARLY WITH META EMOTION](#)

[CHAPTER 5: THINK - THE ASSUMPTIONS THAT DEFINE US](#)

[WHAT WE BELIEVE INFLUENCES OBJECTIVE REALITY](#)

[ASSUMPTION BUSTING - DEEP DISRUPTIVE THINKING](#)

HOW TO BUILD AN ASSUMPTION-BUSTING LOG

THE ART OF ASKING AND BEING ASKED DISRUPTIVE QUESTIONS

CHAPTER 6: SEE - THE FRAMES WE HOLD

WE SEE WHAT ONCE WAS

DO WE SEE WHAT WE FEEL?

THE FRAMES WE HOLD

RECONCILING VS MANAGING PARADOXES

REIMAGINE

ARE YOU THINKING OR SEEING?

CHAPTER 7: METACOGNITION - STRATEGIC SELF-AWARENESS

IMPROVING METACOGNITION

CHAPTER 8: HOW TO BUILD A MINDSET

1. WHAT DO YOU *REALLY* WANT?

2. WHAT ARE YOU SOLVING FOR?

3. WHAT ARE YOUR FEELINGS TELLING YOU?

4. REFRAME TO FEEL/THINK/SEE/ACT DIFFERENTLY

TWO KEYS TO STRENGTHENING SELF-AWARENESS

CHAPTER 9: MINDSET-BUILDING EXPERIMENTS

THE BODY SCAN

MEASURE YOUR INTEROCEPTIVE ACCURACY

KEEP A PERSONAL ASSUMPTION LOG

WALKING MEETINGS

SWITCHING ON DIVERGENT THINKING

FOCUSED BREATHING

HAVE A DOUBTFUL 30 MINUTES
SPEND TIME WITH PEOPLE UNLIKE YOU
EMOTIONAL JUDGEMENT
RETHINKING CONFLICT
IMPROVING EMOTIONAL GRANULARITY
MEET YOUR 80-YEAR-OLD SELF

PART 2: BUILDING MINDSETS FOR THE FUTURE OF
WORK AND LIFE

CHAPTER 10: A MORE HUMAN MINDSET -
ALIVE, OPEN, AND CONNECTED

THE NEGATIVE NORMAL
THE AGE OF AUTOPILOT
DEPLETED, DEFENSIVE, DISCONNECTED
THE KNOWING-DOING GAP
NUMBNESS
INSUFFICIENT PURPOSE
BREAKING THE INTELLIGENCE TRAP
RECOGNISING RUMINATION
HOW CAN YOU FIND THE BLIND SPOT?
AN EXPERIMENT IN BUILDING RADICAL
SELF-AWARENESS

CHAPTER 11: FUTURE NOW - THE ULTIMATE
STRATEGIC MINDSET

THE ENTROPY PROBLEM
THE FATAL (BASELINE) ASSUMPTION
THE VALUE TRILEMMA
THE PAST PRESENT ORGANISATION: 95/5
FOCUS
THE FUTURE NOW ORGANISATION

CREATING A SYMBIOSIS WITH THE FUTURE

BREAKING THE IMMEDIACY CYCLE

HOW DOES IT *FEEL* TO BE A FUTURE NOW ORGANISATION?

ALWAYS DAY ONE: THE PERPETUAL ASSUMPTION

70/30: KNOWING HOW TO DISTINGUISH RISK AND UNCERTAINTY

DISCERNING FOUR HORIZONS OF OPPORTUNITY

HORIZON 4 - WHAT IGNORANCE ARE WE (INTENTIONALLY) GENERATING?

A NORTH STAR

PURPOSE *SHOULD* CHALLENGE US

INDUSTRIALISING IMAGINATION

ACTIVE TOLERANCE

A FUTURE NOW DIAGNOSTIC

CHAPTER 12: THE EXPERIMENTAL MINDSET

THE LIMITS OF PLAN AND ACT

GOALS VS PROBLEMS

CURIOSITY IS LIFE. ASSUMPTION IS DEATH (MARK PARKER, CHAIRMAN, NIKE).

STAY WITH THE PROBLEM LONGER

HOW TO GET BETTER AT BEING WRONG

LINEAR VS NON-LINEAR

ARE WE SOLVING OR REIMAGING?

RATIONAL AND EMOTIONAL

SUSTAINABILITY

IDENTITY

THE PERILS OF SELF-EXPRESSION

YOU ARE NOT YOUR IDEAS

THE POWER OF THE CHECK-IN

CHAPTER 13: THE OPEN MINDSET

OPEN MINDSETS

OPEN TEAMS

BUILDING SHARED AWARENESS

HOW TO USE THE MINDSET QUADRANTS

BUILDING OPEN CULTURE

RECOGNISING THE DEFENSIVE MINDSET AT
WORK

OPEN ORGANISATIONS

IS THERE A SWITCH MARKED 'OPEN' IN
YOUR ORGANISATION?

OPEN MINDSETS CREATE ABUNDANCE

PART 3: MINDSETS IN MOTION

CHAPTER 14: BUILDING A FUTURE NOW
ORGANISATION

THE GROWTH HUB

EXTERNALISING IMI

ASSUMPTION BUSTING

BALANCING RISK, AMBITION, AND REALITY

MANGING THE VALUE TRILEMMA

THE REAL MEANING OF GROWTH MINDSET

LEARNING TO LIVE AND THRIVE WITH
FAILURE

BREAKING THE RULES

CONCLUSION

ACKNOWLEDGEMENTS

REFERENCES

[INTRODUCTION](#)

[CHAPTER 1](#)

[CHAPTER 2](#)

[CHAPTER 3](#)

[CHAPTER 4](#)

[CHAPTER 5](#)

[CHAPTER 6](#)

[CHAPTER 7](#)

[CHAPTER 8](#)

[CHAPTER 9](#)

[CHAPTER 10](#)

[CHAPTER 11](#)

[CHAPTER 12](#)

[CHAPTER 13](#)

[CHAPTER 14](#)

[ABOUT THE AUTHOR](#)

[INDEX](#)

[END USER LICENSE AGREEMENT](#)

List of Illustrations

Part 1

[FIGURE P1.1](#)

Chapter 1

[FIGURE 1.1 Layers of self-awareness that comprise mindset](#)

Chapter 2

[FIGURE 2.1 A highly conceptualised view of how unpredicted sensory informati...](#)

Chapter 3

[FIGURE 3.1 An example of an affective circumplex](#)

[FIGURE 3.2 Proportion of rulings in favour of the prisoners over a day. Circ...](#)

[FIGURE 3.3 Ultradian cycles throughout the 24 circadian cycle highlight our ...](#)

[FIGURE 3.4 Interoceptive signals generated within the body](#)

[FIGURE 3.5 Interoceptive awareness is the foundation of self-awareness](#)

Chapter 4

[FIGURE 4.1 A simplified picture of Lisa Feldman Barrett's theory of construc...](#)

[FIGURE 4.2 Differences between classical and constructed views of emotion...](#)

[FIGURE 4.3 Feelings, emotions, and core human needs](#)

Chapter 5

[FIGURE 5.1 Experimental assumption log](#)

[FIGURE 5.2 Examples of judger and learner questions](#)

Chapter 8

[FIGURE 8.1 How to build a mindset](#)

[FIGURE 8.2 Mindset-building starter questions](#)

Chapter 9

[FIGURE 9.1 The cube](#)

[FIGURE 9.2 What are your emotions telling you?](#)

Chapter 10

[FIGURE 10.1 Building the 'more human' mindset](#)

[FIGURE 10.2 The reactive cycles](#)

[FIGURE 10.3 An experiment in radical self-awareness](#)

[FIGURE 10.4 The affective circumplex](#)

[FIGURE 10.5 Weekly interoception accuracy readings](#)

[FIGURE 10.6 Daily mindset readings \(affect, social, emotion, thinking, seeing...\)](#)

[FIGURE 10.7 Daily input scores \(diet, alcohol, recovery, exercise, sleep\)...](#)

Chapter 11

[FIGURE 11.1 The 'future now' mindset](#)

[FIGURE 11.2 The corporate lifecycle, Adizes Institute 2022®](#)

[FIGURE 11.3 The value trilemma](#)

[FIGURE 11.4 The 95/5 focus of the past organisation](#)

[FIGURE 11.5 Future now organisations](#)

[FIGURE 11.6 The past present vs future now mindset](#)

[FIGURE 11.7 The symbiotic relationship between value today and tomorrow in t...](#)

[FIGURE 11.8 Defensive vs open mindsets](#)

[FIGURE 11.9 The 3 Horizons model - adapted from the *Alchemy of Growth*](#)

[FIGURE 11.10 Four horizons of opportunity](#)

[FIGURE 11.11 Decoding our purpose](#)

[FIGURE 11.12 A future now diagnostic](#)

Chapter 12

[FIGURE 12.1 The experimental mindset](#)

[FIGURE 12.2 Plan and act vs test and learn](#)

[FIGURE 12.3 Test and learn methods](#)

[FIGURE 12.5 The product-market fit pyramid \(used by permission\)](#)

[FIGURE 12.6 Staying longer with the problem](#)

Chapter 13

[FIGURE 13.1 The open mindset](#)

[FIGURE 13.2 Meeting of open mindsets](#)

[FIGURE 13.3 Building the inclusive instinct](#)

[FIGURE 13.4 Mindset quadrants](#)

[FIGURE 13.5 How is mindset influencing performance?](#)

[FIGURE 13.6 Five key dynamics that set successful teams apart from other tea...](#)

[FIGURE 13.7 Recognising defensive mechanisms](#)

Chapter 14

[FIGURE 14.1 Excerpt from IMI's 2021 annual report](#)

[FIGURE 14.2 Summary of IMI's market led innovation model](#)

[FIGURE 14.3 IMI's Adaptix soft jaw](#)

LEADING IN A NON-LINEAR WORLD

**BUILDING WELLBEING, STRATEGIC
AND INNOVATION MINDSETS FOR THE
FUTURE**

JEAN GOMES

WILEY

This edition first published 2023.
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Registered offices

John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex,
PO19 8SQ, UK

John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, USA

Editorial Office

The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK

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Library of Congress Cataloging-in-Publication Data is Available

ISBN 9781119672722 (Hardback)

ISBN 9781119672753 (ePDF)

ISBN 9781119672708 (ePub)

Cover Design and Image and illustrations: Courtesy of Jean Gomes and Michelle Beagley

INTRODUCTION

We are living in a non-linear world, in which more of the problems we face do not have a clear sequence of cause to effect to solution. As the last decade of shocking and unsettling events has shown us, our environment is becoming less stable and predictable. As a result, more of the challenges we encounter in our wellbeing, work, and society cannot be solved using only the linear 'plan and act' approaches, based on assumptions of what's worked in the past.

New and emerging questions require a different way of thinking about our future:

- Can we keep working longer and more continuously?
- How will artificial intelligence (AI) or automation change career paths?
- How will a workforce of four very different generations, skill sets, and values synergise, and what does that mean for the future?
- What if decade-old assumptions about the sustainability of our global economic system no longer hold true?

And today's 'wicked problems',¹ including climate change and the availability and provision of food, energy, and clean water, will continue to play out in unexpected ways as technological innovation and geopolitics unfold.

Linear thinking and action work when problems are well understood, and solutions are conceivable or proven. However, as the complexity and uncertainty of these problems and the solutions we might build (think nanotechnologies or robotics) increase, we need to

embrace an additional approach – a non-linear way of thinking and action. This requires us to embrace not knowing what the true nature of a problem is, or how we will solve it. If linear thinking and action is about exploiting past knowledge to achieve a goal, non-linear methods are about action learning: running parallel experiments to rapidly bust our assumptions and find new solutions, as we did in developing Covid vaccines in an astonishingly short time.

Whilst work is undoubtedly more rewarding economically and intellectually than for previous generations, it has also reached a tipping point of burning out more people from top to bottom. For decades, we've gradually adapted to overflowing inboxes, back-to-back meetings, and the relentless expectation of more for less. More people live a negative-normal existence, feeling depleted, defensive, and disconnected from the priorities, people, and passions in their lives that matter outside of work.

Acceptance of the non-linear nature of our world allows us to see better both the complexity of our circumstances and the patterns in our responses. By learning how we make sense of the overwhelming tide of information rolling over us, tuning into our mindset, and drawing on what only the combined forces of thinking, feeling, and seeing can offer, we can start to meet complexity with complexity. I believe hope lies in our inexorable ingenuity as a species to evolve out of a burnout spiral, whilst at the same time recognising that we are always our own worst enemies. In the coming decade, as new technologies automate more routine work, we have an opportunity to ask ourselves: *What should work mean to us in the future, and what do we uniquely bring?*

One part of the answer is to focus on and celebrate how we as humans uniquely create value. Creative problem-solving, nuanced judgement, and decision-making, combined with

our ability for sensemaking (our ability to organise chaotic data into a form we can process and understand) in complex and uncertain situations, are vital to surviving a non-linear world. All humans are capable of this – but these qualities are more contingent on mindset than our track record, education, or status.

These qualities are unique to us. AI and other forms of technological automation lack the capacity to perform these ‘mystical’ acts of intuition, non-linear and counterfactual thinking, and there's no likelihood they will develop the ability to do so in the next 50 or more years.²

We are living in an era of *radical uncertainty* according to economists John Kay and Mervyn King,³ where more of the answers we should be giving as leaders are, ‘I don't know’. This provokes feelings and emotions, such as doubt, that have long been seen as signs of weakness and a barrier to rational thinking and problem-solving. As we'll see, nothing could be further from the truth.

Leading in a Non-Linear World aims to give you a deeper understanding of your mindset and the means to grow and strengthen it. It draws on exciting developments in neuroscience, experimental psychology, and physiology, and our team's research and work with over 70,000 people worldwide.

[Part 1](#) begins with a redefinition of the term ‘mindset’, from being a set of beliefs and attitudes, to widening it to encompass how we make sense of the world through feelings, emotions, thoughts, and perception. This includes recent breakthroughs in the understanding of consciousness, metacognition (our ability to think about thinking), and the influence of our bodies on our sensemaking – including new theories overturning conventional wisdom on how our emotions and perception

work. These combine into a model for mindset that enables us to explore ways of building and strengthening it.

In [Part 2](#), we'll explore four mindsets for the future of our life and work, applying the tools and theories discussed in [Part 1](#).

- The *more human* mindset looks at how radical self-awareness increases the flow of information from our mind and bodies, making healthier behaviours and wellbeing a more natural default setting.
- The *future now* mindset tackles the perennial challenge of short termism. How can individuals and organisations simultaneously achieve their short- and long-term goals?
- The *experimental* mindset helps those adopting the 'test and learn' playbook developed by the start-up community to succeed in the many countercultural and counterintuitive ways it asks of us.
- The *open* mindset is about unlocking new ways of seeing the world; how we can pioneer new ways of working and build future organisations.

In [Part 3](#), we'll examine a case study of an enterprise driving change through mindset adoption to improve wellbeing, performance, and growth.

We build our mindsets by intentionally thinking about them. By reading this book, you're taking an important step in building mindsets for your future.

PART 1
THE NEW SCIENCE OF
MINDSET AND SELF-
AWARENESS

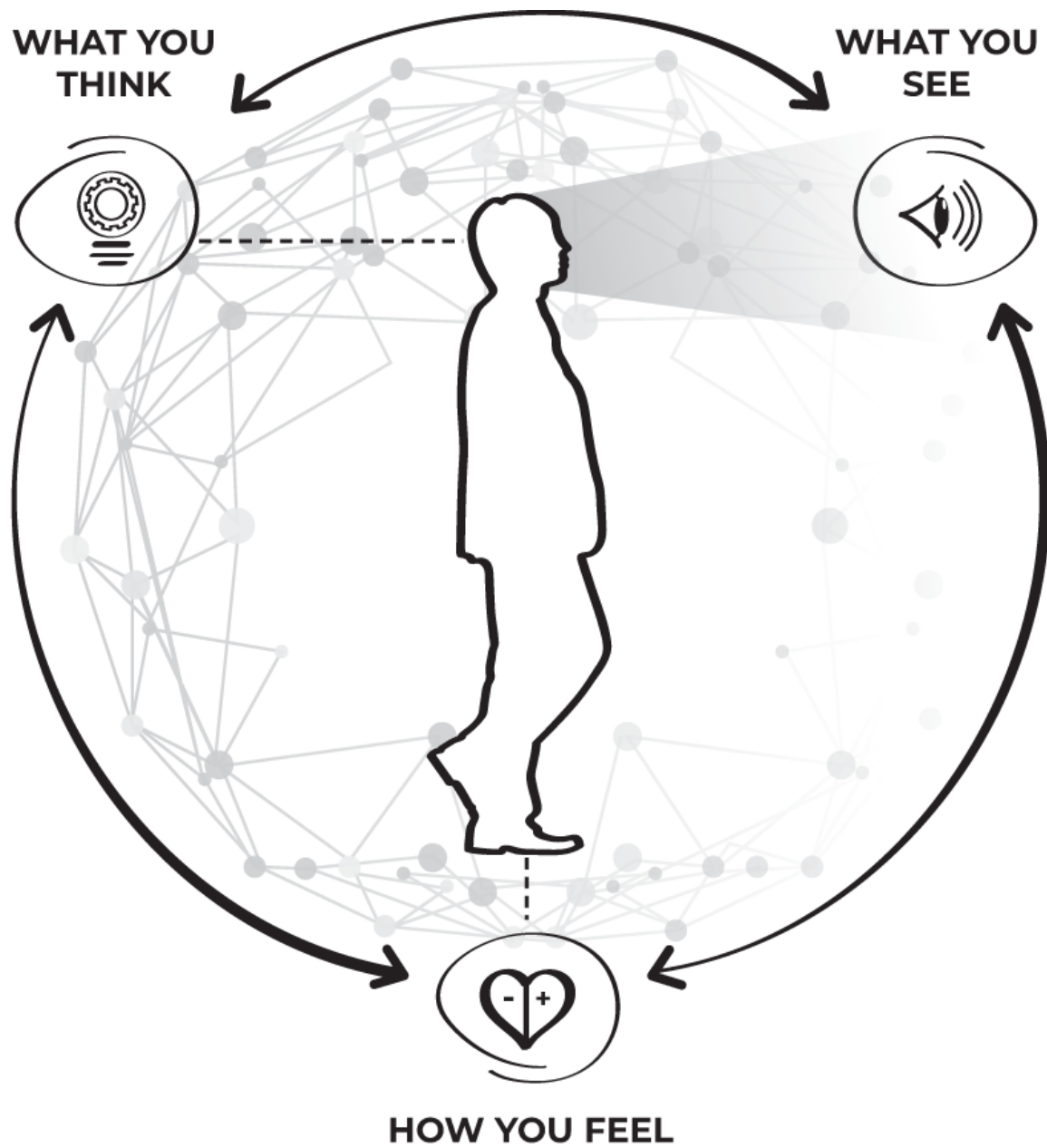


FIGURE P1.1

Source: Jean Gomes

Our mindsets result from the interplay of feeling, thinking, and seeing - creating instances of knowing, doubt, or certainty.

CHAPTER 1

WHAT IS MINDSET?

The term 'mindset' has become laden with significance in recent times. The dictionary definition suggests a fixed set of beliefs and attitudes that shape our actions. But think about this for a moment. Are your actions driven solely by your assumptions and beliefs? I'm sure it won't take you long to recall numerous situations where you acted against your 'beliefs'. Not because of cognitive bias, or social pressure, but for a whole host of urges and feelings that combined to create a sense of certainty in the moment which defied being logical.

And we don't have just one mindset. We have collections of beliefs, many of which occupy contradictory positions, shaped by different contexts, interpretations of risk, uncertainty, and social influences. We may have a playful mindset when working with one group of people and unconsciously adopt a pragmatic one with another. Our mindset can be profoundly different when we're with strangers, travelling, fatigued, overwhelmed, or feeling unfairly treated.

Mindset is now code for everything from the zeitgeist, worldviews, personality, attitudes, beliefs, motivation, political and social affiliation, and identity. Why has the term, relatively little used until a decade ago, become so sticky? Perhaps it helps us to join the dots between the enormous societal change we're experiencing and what's going on inside us.

Most influential in the recent popularity of the term has been Carol Dweck's theory of fixed and growth mindsets in children. According to Dweck, a child with a fixed mindset

believes their abilities are permanent traits and can't be changed. The belief, for example, that 'I'm not good at maths', leads to another thought that 'working harder won't pay off'. These beliefs shape behaviours, such as de-prioritising maths revision, and become a self-fulfilling prophecy when they fail or get poor grades - 'see I was right, I'm no good at maths!'. A fixed mindset works the other way too. A child naturally good at maths thinking that their talent and inherent ability is a given may believe they don't need to work any harder. Either way, a fixed mindset becomes a narrowing self-definition of an individual's potential.

A growth mindset is based on the belief that one's talents and abilities can be developed over time through effort and persistence. Dweck observed children with this belief seeing maths problems that they couldn't yet solve as a positive challenge; their belief was 'bring it on!'. In her laboratory, Dweck was able to demonstrate that simple interventions could help children build a growth mindset and positively impact on their performance. Children were taught about the brain's capacity to change and how memory worked. Teachers were encouraged to use specific forms of appreciation to encourage and reinforce when children adopted growth mindset approaches. Evidence showed academic improvements and reduction in aggression and bullying.

The appeal of the growth mindset was such that it was readily adopted as a model in classrooms around the world. However, it soon became clear that it was not as simple as showing children a picture of the fixed and growth mindsets and encouraging them to adopt a new set of beliefs. In a much-cited meta-analysis study¹ of mindset and academic achievement across 400,000 students, classroom training efforts showed a weak effect on improved performance. Another detailed study² conducted

amongst 600 school children, closely replicating Dweck's studies, failed to show interventions leading to *any* improvement in students overcoming difficult challenges more effectively. There *is* evidence of the positive impact of the training, but generally in settings where the school's culture *already* encourages children to strive beyond their expectations. Where peer norms amongst students discourage challenge-seeking, the impact was unclear. The failure lies not in the theory but in the execution according to Dweck, but she acknowledges³ that the 'growth mindset is even more complex than we imagined'.

Part of the success of the idea of fixed vs growth mindsets is that it makes intuitive sense. I'm sure we have all seen children, or young adults, perhaps our own, who tell themselves they are incapable of things that we 'know' they could achieve if they just believed in themselves. The immediacy of the idea - its 'rightness' - is a clue as to why teachers may have failed to understand how to create the conditions for building a growth mindset. Dave Paunesku, co-founder of the Project for Education Research in the USA, points to the root of failures being that many 'teachers approach it like quadratic equation. You can't just think of it as a regular thing to teach, because the internalization of it is so important'.⁴ The trap lies in thinking that a mindset is simply a cognitive framework or model that you can show people and suddenly they think, 'of course, I could be great at maths if only I believed in myself'.

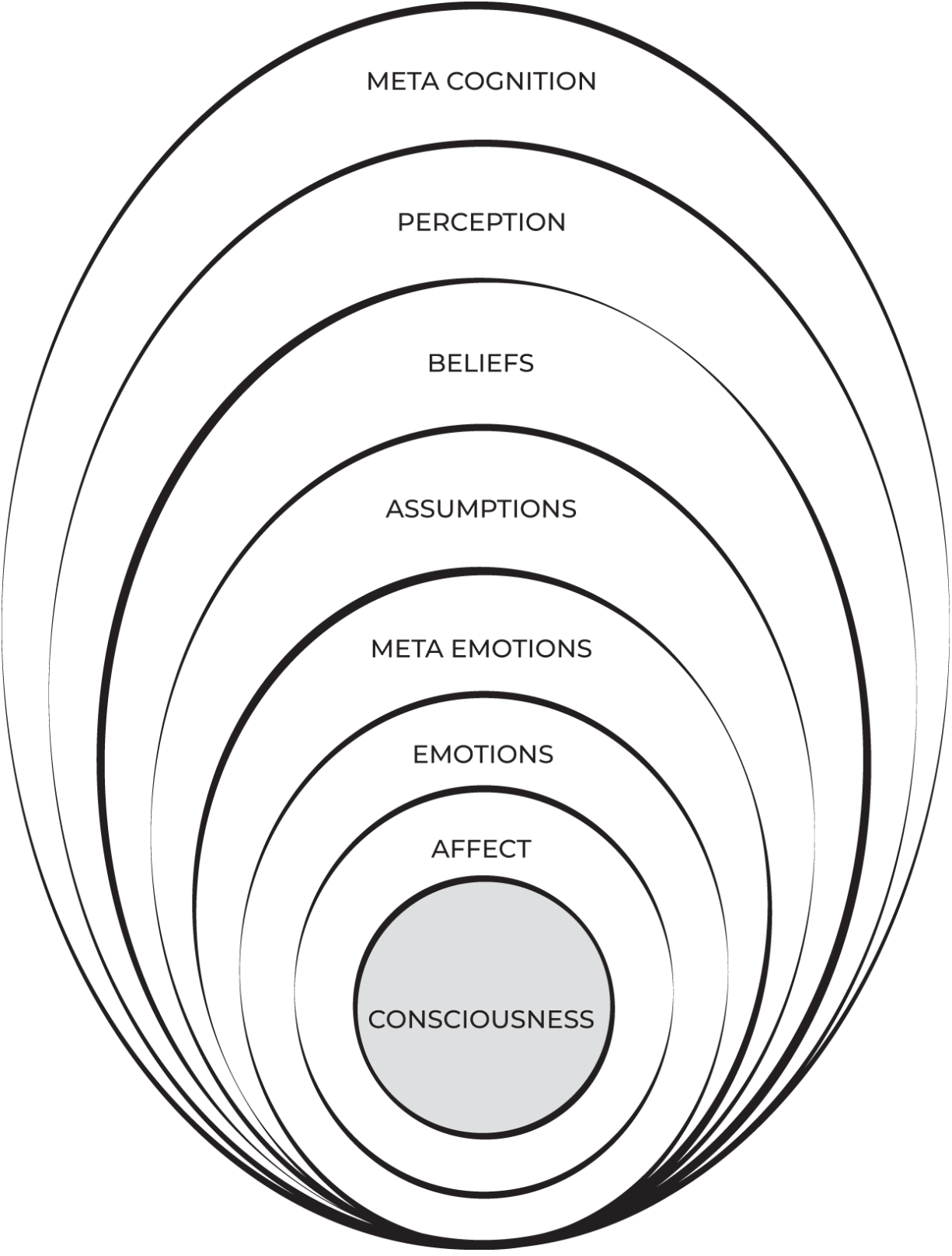
This is where we depart from Dweck and many other descriptions of mindset. Most of which are, in fact, simply mental models. In other words, they are ways of looking at, or thinking about, situations. As we'll consider later, most smart people have a misplaced belief that once they intellectually understand something, they can master it behaviourally. So, mindset as an idea seems eminently

teachable. Of course, the idea part *is* important, but it doesn't reflect fully what's going on inside us to describe how we respond to these models.

CREATING A BIGGER INNER WORLD

What researchers are showing us is that our mindsets result from the interplay of feeling, thinking, and seeing – creating instances of knowing, doubt, or certainty. This opens new possibilities for us taking more control over our lives and gaining greater psychological freedom in the face of uncertainty. This is not just about understanding an idea and adopting positive thinking. Building a mindset modifies and grows the networks and structures in your brain, and the hormones and neurotransmitters you produce. In turn, these impact on your immediate and long-term health, how open you are to new information, the decisions you make, how others see you, and the nature of the relationships you form. Your mindset, for better or worse, defines your life.

The disciplines of neuroscience, psychology, and physiology are showing us a new way of thinking about how our bodies and brain work together to navigate the world. This understanding highlights the central importance of self-awareness, for example how significant it is to be connected to your physical feelings and understand how they are different from emotions and thoughts, which we often confuse.



META COGNITION

PERCEPTION

BELIEFS

ASSUMPTIONS

META EMOTIONS

EMOTIONS

AFFECT

CONSCIOUSNESS

FIGURE 1.1 Layers of self-awareness that comprise mindset

Source: Jean Gomes

At the core of mindset building is a new, deeper form of self-awareness: being able to pay attention to multiple dimensions of your interior world and observe how they influence one another. These 'layers' of self-awareness ([Figure 1.1](#)) start with raw **consciousness** – the sense of self. Depending on the metabolic state of your body, you experience positive or negative **affect**, the term psychologists use to describe the sum of your physical feelings. Next in our mindset system come **emotions**, which require a necessary re-evaluation in both their function and potential. As we'll see, your brain runs profoundly on predictions, so the **assumptions** you make and how they inform your **beliefs** are generally inseparable from what you see as reality. **Perception** is part of your prediction system, so we often confuse what we see with what we think. Across each dimension of this system, you have the incredible capacity of **metacognition**, the ability to pull apart and think about how you feel, think, and see. This strategic form of awareness enables you to connect deeply with the signals in your body, to read the invaluable information your emotions are telling you, to challenge and bust unhelpful or limiting assumptions and to see more clearly.

What's truly exciting is that the chief mechanism of mindset building is within the immediate reach of everyone. It's not dependent on intelligence or means. As the metacognition neuroscientist, Stephen Fleming, told me, the most powerful way of building our interior world is *to think about it*. When we do it intentionally, the processes of neuroplasticity, our brain's ability to adapt to experience, enables us to build our mindset. Self-awareness, in its many

forms, is key to building mindsets, not conceptually, but architecturally. Our mindset is, at its most fundamental level, the product of the neurochemistry, brain structures, and neural networks we've evolved over the course of our life. As we do so, we gain the power to see and close the knowing-doing gaps in our lives, where we confuse an intellectual understanding of something we should do with actually doing it.

CHAPTER 2

CONSCIOUSNESSES - OUR SENSE OF SELF

Let's start by understanding the importance of connecting deeply with our sense of self and our physical feelings, because when this connection is lost or weakened, it undermines the foundation of our mindset.

Consciousness can be described as the mind's subjective experience, our most profound sense of self. When you wake up in the morning, there are a few moments before you start thinking when you experience it most fully. Our interior world of feelings and thoughts is suffused with this sense of self. Neuroscientist, Anil Seth, borrowing from the philosopher, Thomas Nagel, describes consciousness as what 'it feels like something to be me'.¹ This sensation is *distinct* from the awareness of your thoughts, knowledge, identity, or behaviour.

Consciousness has long been held to have mystic properties and assumed to be beyond our comprehension. In the 17th century René Descartes described the mind-body problem which has continued to challenge us for over four centuries. Whilst consciousness was an undeniable quality of mind, Descartes argued that the structure of the brain and body could not explain its existence. The brain and body exist in space, the mind does not. Therefore, consciousness must be a God-given phenomenon. The belief that it must exist outside the discernible physical universe has exerted a powerful, if sometimes unspoken, influence over science ever since, warning researchers off the territory. Stuart Sutherland's 1989 entry on consciousnesses in no less than the *International*

Dictionary of Psychology asserted that 'it is impossible to specify what it is, what it does, or why it evolved. Nothing worth reading has been written on it'.

Until the 1990s, efforts to explain consciousness were still largely the preserve of philosophers. They too regarded it as unfathomable by science. However, in 1994, an unknown 27-year-old philosopher, David Chalmers, threw an intellectual mind bomb that has continued to reverberate ever since. He described the *hard part of consciousness* as 'why and how do neurophysiological activities *produce* the experience of consciousness?'.² The easy (not easy, but conceivable) part of consciousness being 'how individual sensory mechanisms such as sight, focus and process information?'. For Chalmers, the hard part of the problem was finding a reason why our mental functions needed to feel like anything in the first place. Memory, or learning, *could* theoretically function, as computers and phones do, without consciousness, without any sense of self.

Chalmers' new framing of consciousness energised the debate with Nobel laureate Francis Crick and Christof Koch kick-starting the current neuroscience-led revolution in understanding. Using emerging scanning technologies, their work on the *neural correlates* of consciousness gave researchers a practical method of, for example, observing the experience of sensing a specific colour and how that resulted in a consistent and specific pattern of brain activity. Experiments were able to seemingly tease apart sensory responses such as vision and taste from those of consciousness, but they couldn't tell us why. Thirty years on, answers are now starting to emerge as researchers look beyond the brain's cortex, where it was long held to reside.

Mark Solms is part of a new wave of researchers who are taking a different approach which opens up a new way of thinking about mindset. Solms believes that the hard

problem arose because we were looking in the wrong place and at the wrong mental functions. Instead of seeking consciousness as a property of higher cortical functions, such as reading or facial recognition, that can run independently of consciousness, he argues we should be looking at functions that are *intrinsically* conscious. This led him to focus on physical feelings that arise from internal sensors in the body. Feelings, he points out, unlike perception and memory, are inherently conscious mental states.

Feelings such as hunger, sleepiness, thirst, rage, and fear that, whilst *registered* in the cortex, are *generated* in the brain stem. Solms believes the cortex is not intrinsically conscious but *borrow*s its consciousness from the brain stem. To illustrate this, he points out that even minor damage to certain parts of the brain stem - say the removal of a match head-sized piece - will consistently result in a coma. 'That's how concentrated the consciousness producing power of the brain stem is. Conversely, you can remove large parts of cortex, without obliterating *any* consciousness'. This is evidenced in children born without a cortex, a devastating condition known as hydranencephaly. Remarkably, these children show a clear sense of self, responding with appropriate emotions to stimuli. They will giggle when tickled, startle when frightened, cry when frustrated. Without *any* cortex, affective consciousness is clearly present.

The earliest forms of consciousness evolved in simple creatures and were no more sophisticated than feeling hot or thirsty. These feelings were rooted in the most basic biological need to survive. Feelings enabled them to discern what was good and bad for them and raised an organism's action beyond automaticity, reflex, and instinct; responses which only work in predictable situations.

The evolutionary advantage of feeling was that it created feedback loops that facilitated voluntary behaviour, allowing organisms to navigate new and uncertain situations by *feeling* their way through them. As Solms puts it, this profound form of decision-making is based on the notion that 'I feel like this about that. Thinking about consciousness from the bottom-up makes the hard problem less hard'.

Just how deeply feeling and the maintenance of our metabolic equilibrium influences our mindset can be seen in the work of researchers looking at the impact of temperature on decision-making.³ Decision-making under pressure has long been studied as it involves a trade-off between speed and accuracy. Putting people in hot tubs and testing their decision-making confirmed the phenomenon that time appears to speed up when core body temperature increases, reducing the perceived time available and lessening the quality and accuracy of our decisions.

THE PREDICTING BRAIN

Imagine you're picking up your 9.30am cup of coffee from the desk in front of you. Largely unconsciously, your brain is calculating the effects that it will have on your body. But as you start to drink, you realise it's tea not coffee and, despite it being made to your liking, it has created a prediction error which you register as a feeling of surprise, or even mild disgust. You expected coffee, based on prior experiences, and your senses created an error signal registered in your brain stem as a feeling.