'ACCESSIBLE, LUCID AND WISE' *THE INDEPENDENT*

THE SLOW FIX

LASTING SOLUTIONS IN A FAST-MOVING WORLD

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BESTSELLING AUTHOR OF *IN PRAISE OF SLOW*

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The Slow Fix: Solve Problems, Work Smarter and Live Better in a Fast World

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What do we do when things go wrong in a fast world? Many of us go for the quick fix that delays the problem rather than solving it. To make real progress we need real solutions – we need to take time for THE SLOW FIX. People have long been in search of a quick fix. Truth is, it doesn't work. The problems facing us today are bigger and more urgent than ever before and we need to learn to start fixing things properly, rather than settling for short-term solutions. The Slow Fix offers real, life-changing solutions to tackling these problems and extends the movement defined by Carl Honore in his global bestseller, In Praise of Slow, to offer a recipe for problem-solving that can be applied to every walk of life, from business and politics to relationships, education and health reform. Taking time to build up expertise, taking advantage of the hidden benefits of teamwork, finding the right messenger to deliver the message, and employing a transparent approach are all essential elements of the Slow Fix. This book will help you make sense of what is going wrong – and right – in the world, and gives inspiration, ideas and practical tools to help fix your own life and everything around you.

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CARL HONORÉ

THE SLOW FIX

SOLVE PROBLEMS, WORK SMARTER AND LIVE BETTER IN A FAST WORLD

WILLIAM COLLINS

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To Miranda, Benjamin and Susannah

You cannot solve a problem from the same consciousness that created it. You must learn to see the world anew.

Albert Einstein

INTRODUCTION
Pulling the Andon Rope

How poor are they who have not patience! What wound did ever heal but by degrees?
William Shakespeare

In a small, windowless room, in a busy clinic in south London, a familiar ritual is about to begin. Let's call it Man with Back Pain Visits Specialist.

You may recognise the scene: the white walls are bare apart from an anatomical poster and a few smudged fingerprints. Fluorescent light falls from a bulb overhead. A faint whiff of disinfectant hangs in the air. On a trolley beside the treatment table, acupuncture needles are spread out like the tools of a medieval torturer.

Today, I am the man seeking relief from back pain. Face down on the treatment table, peering through a foam ring wrapped in tissue paper, I can see the hem of a white lab coat swishing above the floor. It belongs to Dr Woo, the acupuncturist. Though nearing retirement, he still moves with the liquid grace of a gazelle. To the hobbled masses in his waiting room, he is a poster boy for the benefits of Traditional Chinese Medicine.

Dr Woo is planting a small forest of needles along my spine. Each time he punctures the skin, he lets out a muffled grunt of triumph. And each time the sensation is the same: a prickling heat followed by an oddly pleasant contraction of the muscle. I lie still, like a butterfly yielding to a Victorian collector.

After inserting the final needle, Dr Woo dims the lights and leaves me alone in the half-darkness. Through the thin walls I can hear him chatting with another patient, a young woman, about her back trouble. Later, he returns to pull out my needles. My spirits are already lifting as we walk back to Reception. The pain has eased and my body is moving more freely, but Dr Woo remains cautious.

'Do not get carried away,' he says. 'Backs are complicated and they need time to heal properly, so you must be patient.' I nod, looking away as I hand over my credit card, knowing what is coming next. 'You should do at least five more sessions,' he tells me.

My response is the same as last time, the same as always: make a follow-up appointment while secretly planning to dodge it.

Two days later and, true to form, my back has improved enough that I cancel my return visit, feeling slightly smug about the time, hassle and money this will save. Who needs multiple rounds of acupuncture, anyway? One hit and I'm back in the game.

Or am I? Three months later I'm back on Dr Woo's treatment table and this time the pain is snaking down into my legs. Even lying in bed hurts.

Now it is Dr Woo's turn to be smug. While laying out his needles, he tells me that impatience is the enemy of good medicine, and then he gets personal. 'Someone like you will never get better,' he says, more in sorrow than in anger. 'Because you are a man who wants to fix his back quickly.'

Ouch.

Talk about a diagnosis that hits where it hurts. Not only am I guilty as charged – I have been in a hurry to fix my back for 20 years – but I really should know better. After all, I travel the world lecturing on how wonderful it is to slow down, take time, do things as well, rather than as fast, as possible. I have even sung the praises of slowness at medical conferences. But though my life has been transformed by deceleration, the virus of hurry still clearly lurks in my bloodstream. With surgical precision, Dr Woo has skewered an inconvenient truth that I have ducked for years: When it comes to healing my back, I remain addicted to the quick fix.

My medical history reads like a whistle-stop tour. Over the last two decades my back has been twisted, cracked and stretched by a procession of physiotherapists, masseurs, osteopaths and chiropractors. Aromatherapists have rubbed birch, blue chamomile and black pepper oils into my lower lumbar region. Reflexologists have worked the back-related pressure points on the soles of my feet. I have worn a brace, guzzled painkillers and muscle relaxants, and spent a small fortune on ergonomic chairs, orthotic insoles and orthopedic mattresses. Hot stones, hot cupping, electric currents, heat pads and ice packs, crystals, Reiki, ultrasound, yoga, Alexander Technique, Pilates – yup, been there, done all of that. I have even visited a Brazilian witch doctor.

Yet nothing has worked. Sure, there have been moments of relief along the way, but after two decades on the treatment treadmill my back still aches – and it's getting worse.

Perhaps I just haven't found the right cure for me. After all, others have conquered back pain using techniques from my treatment plan, and even that Brazilian witch doctor came with glowing references. Or maybe, and this seems far more likely, Dr Woo is right. In other words, I treat every single cure for back pain as a quick fix, targeting the symptoms without addressing the root cause, revelling in its temporary relief, chafing when progress slows or demands more effort before moving on to the next treatment at the drop of a hat, like a chronic weight-watcher flitting from one diet to the next. The other day I spotted a web link peddling 'Magnet Therapy' as a panacea for back pain. My first thought was not: 'Snake oil, anyone?' It was: 'Can I get that in London?'

This book is not a back pain memoir. Nothing is more tedious than listening to other people drone on about their aches and ailments. What makes my losing battle with my lumbar region worth exploring is that it points up a much bigger problem affecting every one of us. Let's be honest: when it comes to chasing instant results, I am not alone. In every walk of life, from medicine and relationships to business and politics, we are all hooked on the quick fix.

Looking for shortcuts is nothing new. Two thousand years ago Plutarch denounced the army of quacks hawking miracle cures to the gullible citizens of Ancient Rome. At the end of the eighteenth century infertile couples queued up in hope of conceiving in London's legendary Celestial Bed. The amorous contraption promised soft music, a ceiling-mounted mirror and a mattress stuffed with 'sweet new wheat or oat straw, mingled with balm, rose leaves, and lavender flowers', as well as tail hairs from the finest English stallions. An electric current allegedly generated a magnetic field 'calculated to give the necessary degree of strength and exertion to the nerves'. The promise: instant conception. The cost for one night of fertile fumbling: £3,000 in modern money.

Today, though, the quick fix has become the standard across the board in our fast-forward, on-demand, just-add-water culture. Who has the time or patience for Aristotelian deliberation and the long view any more? Politicians need results before the next election, or the next press conference. The markets panic if wobbly businesses or wavering governments fail to serve up an instant action plan. Websites are studded with ads promising fast solutions to every problem known to Google: a herbal remedy to reboot your sex life; a video to perfect your golf swing; an app to find Mr Right. In the old days, social protest entailed stuffing envelopes, going on marches or attending meetings in town halls. Now many of us just click 'Like' or fire off a sympathetic tweet. All over the world, doctors are under pressure to heal patients in a hurry, which often means reaching for a pill, the quick fix *par excellence*. Feeling blue? Try Prozac. Struggling to concentrate? Join Team Ritalin. In the never-ending quest for instant relief the average Briton now pops, according to one estimate, 40,000 pills in a lifetime. I am certainly not the only impatient patient in Dr Woo's waiting room. 'The easiest way to make money today is not to heal people,' he says. 'It is to sell them the promise of instant healing.'

Indeed, spending money has become a quick fix in itself, with hitting the mall touted as the fastest way to lift sagging spirits. We joke about 'retail therapy' as we show off that new pair of Louboutins or the latest iPad case. The diet industry has turned the quick fix into an art form. 'A bikini body by next week!' the ads scream. 'Lose 10 pounds … in ONLY 3 days!'

You can even buy a quick fix for your social life. If you need a workout partner at the gym, a best man for your wedding or a kindly uncle to cheer your children at sports day, or if you just want a shoulder to cry on, you can now hire any of the above from rent-a-friend agencies. The going rate for a pal to hang out with in London is £6.50 per hour.

Every quick fix whispers the same seductive promise of maximum return for minimum effort. Trouble is, that equation doesn't add up. Think about it for a moment: is worshipping at the altar of the quick fix making us happier, healthier and more productive? Is it helping to tackle the epic challenges confronting humanity at the start of the 21st century? Is there really an app for everything? Of course not. Trying to solve problems in a hurry, sticking on a plaster when surgery is needed, might deliver temporary reprieve – but usually at the price of storing up worse trouble for later. The hard, unpalatable truth is that the quick fix never truly fixes anything at all. And sometimes it just makes things worse.

The evidence is all around us. Even as we drop billions of pounds on diet products promising Hollywood thighs and *Men's Health* abs in time for summer, waistlines are ballooning all over the world. Why? Because there is no such thing as One Tip to a Flat Stomach. Academic studies show that most people who lose weight on diets regain it all, and often more, within five years. Even liposuction, the nuclear option in the slimming arms race, can backfire. Fat sucked from a woman's thighs and abdomen usually resurfaces within a year elsewhere on her body, as bingo wings, say, or shoulder flab.

Sometimes, the quick fix can be worse than no fix at all. Look at 'retail therapy'. Buying the latest Louis Vuitton bag may lift your mood, but the effect is usually transient. Before long you're back online or in the mall hunting for the next thrill – while unopened bills pile up like snowdrifts by the front door.

Look at the damage wrought by our penchant for pills. Surveys suggest that nearly two million Americans now abuse prescription drugs, with more than a million hospitalised every year by the side effects of medication. Overdosing on legal pills is now a leading cause of accidental death in the US, where the black market in hard-to-get medication has fuelled a sharp rise in armed robberies at pharmacies. Even neonatal units are reporting a spike in the number of babies born to mothers with painkiller addictions. And it's not a pretty sight: newborns suffering from withdrawal scream, spasm and vomit, rub their noses raw and struggle to eat and breathe.

You certainly cannot solve hard problems by just throwing money at them. To mend its ailing public schools, New York City began linking teacher pay to pupil performance in 2008. After forking out more than $55 million over three years, officials scrapped the programme because it was making no difference to test scores or teaching methods. It turns out that fixing a floundering school, as we will see later in the book, is a lot more complicated than just doling out cash bonuses.

Even in business, where speed is usually an advantage, our fondness for the quick fix is backfiring badly. When firms hit choppy waters, or come under pressure to goose the bottom line or jack up a sagging stock price, the knee-jerk response is often to downsize. But shedding staff in a hurry seldom pays off. It can hollow out a company, demoralise the remaining workforce and spook customers and suppliers. Often it leaves deeper problems untouched. After sifting through 30 years' worth of longitudinal and cross-sectional studies, Franco Gandolfi, a professor of management, came to a stark conclusion: 'The overall picture of the financial effects of downsizing is negative.'

The rise and fall of Toyota is a cautionary tale. The Japanese car-maker conquered the world by obsessively tackling problems at their source. When something went wrong on the assembly line, even the lowliest worker could pull a cord, known as the Andon rope, which would cause a buzzer to ring and a light bulb to flash overhead ('andon' means 'paper lantern' in Japanese). Like a toddler, staff would ask 'Why, why, why?' over and over again, until they reached the root cause of the problem. If it turned out to be serious, they might stop the entire production line. In every case, they would devise a permanent solution.

But everything changed when Toyota embarked on a headlong dash to become the number one car-maker in the world. Management overreached, lost control of the supply chain and ignored warnings from the factory floor. They started putting out fires without asking why those fires were breaking out in the first place.

Result: a recall of more than 10 million faulty vehicles that shredded the firm's reputation, wiped out billions of dollars in revenue and unleashed a barrage of lawsuits. In 2010 Akio Toyoda, the company's chastened president, explained to the US Congress how Toyota fell from grace: 'We pursued growth over the speed at which we were able to develop our people and our organisation.' Translation: we stopped pulling the Andon rope and fell for the quick fix.

You see the same folly in professional sports. When a team hits a slump, and the clamour for a turnaround reaches fever pitch in the stands and the media, owners reach for the oldest fix in the playbook: fire the coach and hire a new one. As the world has grown more impatient, the scramble for results on the field has turned more frantic. Since 1992 the average tenure of a manager in professional football in England has fallen from 3.5 years to 1.5 years. In the lower leagues six months to a year is now the norm. Yet turning management into a revolving door is a bad way to run a team. Academic research shows that most new managers deliver no more than a short honeymoon period of better results. After a dozen games the team's performance is usually the same, or worse, than it was before the regime change. Just like a weight-watcher piling the pounds back on after a crash diet.

You see the same mistakes in war and diplomacy. The US-led coalition failed to back up the shock-and-awe invasion of Iraq in 2003 with proper long-term plans for rebuilding the country. As Western troops amassed on the border, Donald Rumsfeld, then the US Secretary of Defense, put a modern spin on the old chestnut that the soldiers would be 'home for Christmas'. The war in Iraq, he declared, 'could last six days, six weeks. I doubt six months.' What followed was years of chaos, carnage and insurgency, capped by an ignoble retreat from a job half done. In the salty argot of the US military, the brass ignored the golden rule of the seven Ps: Prior Planning and Preparation Prevents Piss-Poor Performance.

Even the technology industry, that great engine of speed, is learning that you cannot solve every problem by simply crunching more data and writing better algorithms. A team of IT specialists recently rode into the World Health Organisation headquarters in Geneva on a mission to eradicate tropical diseases such as malaria and Guinea worm. A culture clash ensued. The Tropical Diseases department is a million miles from the hip working spaces of Silicon Valley. Grey filing cabinets and in-trays piled high with folders line a dimly lit corridor. A yellow, hand-written note saying 'Hors Service' (out of order) is taped to the coin slot of the drinks machine. Sandal-wearing academic types work quietly in offices with tropical fans on the ceiling. It feels like the sociology department of an underfunded university, or a bureaucratic outpost in the developing world. Like many of the experts here, Pierre Boucher was stunned and amused by the can-do swagger of the IT interlopers. 'These tech guys arrived with their laptops and said, "Give us the data and the maps and we'll fix this for you," and I just thought, "Will you now?"' he says, with a wry smile. 'Tropical diseases are an immensely complex problem that you can never just solve on a keyboard.'

'Did the uber-nerds make any inroads?' I ask.

'No, nothing at all,' says Boucher. 'Eventually they left and we never heard from them again.'

Bill Gates, the high priest of high-speed problem-solving, has learned the same lesson. In 2005 he challenged the world's scientists to come up with solutions to the biggest problems in global health in double-quick time. The Bill and Melinda Gates Foundation awarded $458 million in grants to 45 of the more than 1,500 proposals that flooded in. There was giddy talk of creating, for instance, vaccines that needed no refrigeration within five years. But five years later the mood was sober. Even the most promising projects were still a long way from delivering real solutions. 'We were naïve when we began,' Gates conceded.

The bottom line here is clear: the quick fix is the wrong horse to back. *On its own*, no algorithm has ever solved a global health problem. No impulse buy has ever turned around a life. No drug has ever cured a chronic illness. No box of chocolates has ever mended a broken relationship. No educational DVD has ever transformed a child into a baby Einstein. No TED Talk has ever changed the world. No drone strike has ever killed off a terrorist group. It's always more complicated than that.

Everywhere you look – health, politics, education, relationships, business, diplomacy, finance, the environment – the problems we face are more complex and more pressing than ever before. Piss-poor performance is no longer an option. The time has come to resist the siren call of half-baked solutions and short-term palliatives and start fixing things properly. We need to find a new and better way to tackle every kind of problem. We need to learn the art of the Slow Fix. Now is the moment to define our terms. Not all problems are created equal. Some can be fixed with a quick and simple solution. Inserting a single line of code can stop a misfiring webpage from inflicting mayhem on a company. When someone is choking on a morsel of food, the Heimlich manoeuvre can dislodge the offending object from the windpipe and save the victim's life. My focus in this book is on a very different kind of problem, where the parameters are unclear and shifting, where human behaviour comes into play, where there may not even be a *right* answer. Think climate change, the obesity epidemic, or a company grown too big for its own good.

When dealing with such problems, the quick fix addresses the symptoms rather than the root cause. It puts short-term relief before long-term cure. It makes no provision for unwelcome side effects. Every culture has a tradition of skin-deep fixes. The French call it a 'solution de fortune'. The Argentines 'tie it all up with wire'. In English we talk of 'band-aid cures' and 'duct-tape solutions'. The Finns joke about mending a puncture with chewing-gum. The Hindi word 'jugaad' means solving problems – from building cars to repairing water pumps – by throwing together whatever scraps are to hand. My favourite metaphor for the folly of the quick fix is the Korean expression 'peeing on a frozen leg': warm urine delivers instant relief, followed by worse misery as the liquid freezes solid on the skin.

So what is the Slow Fix? That is the question we will answer in the coming pages. But already it seems clear that it rests on a virtue that is in short supply nowadays: patience.

Sam Micklus knows that better than most. He is the founder of Odyssey of the Mind, the closest thing we have to an Olympics of problem-solving. Every year, pupils in 5,000 schools around the world set out to tackle one of six problems set by Micklus himself. They might have to build a weight-bearing structure from balsa wood, stage a play where a food defends itself in a mock court from charges of being unhealthy, or depict the discovery of archaeological treasures from the past and the future. Teams square off in regional and then national competitions to win a place at the annual World Finals. NASA is the chief sponsor of Odyssey of the Mind, and sends staff along to scout for talent.

I catch up with Micklus at the 2010 World Finals in East Lansing, Michigan. A retired professor of industrial design from New Jersey, he now lives in Florida, and looks every inch the American pensioner, with his comfortable shoes, silver hair and light tan. At the World Finals, however, surrounded by the hubbub of children pulling on costumes and fine-tuning their presentations for the judges, he is buzzing like a kid on Christmas morning. Everyone refers to him fondly as Dr Sam.

During 30 years at the helm of Odyssey of the Mind, Micklus has watched the cult of the quick fix tighten its grip on popular culture. 'The real trouble nowadays is that no one wants to wait for anything any more,' he says. 'When I ask people to think about a problem even for just a minute or two, they are already looking at their watches after ten seconds.'

He takes a sip of water from a plastic bottle and looks around the enormous gymnasium where we are chatting. It feels like backstage at a West End musical, with children scurrying to and fro, bellowing instructions, assembling stage props and testing surprisingly elaborate floats. Micklus's eyes come to rest on a clutch of 11-year-old girls struggling to fix a faulty chain on their homemade camper van.

'Even here at the World Finals, where you're talking about the best problem-solvers of the future, a lot of the kids still want to pounce on the first idea that comes along and make it work immediately,' he says. 'But your first idea is usually not your best, and it may take weeks or even longer to find the right solution to a problem and then make it come to fruition.'

No one, not even Micklus, believes we have to solve every problem slowly. There are times – patching up a soldier on the battlefield, for instance, or cooling a damaged nuclear reactor in Japan – when sitting back to stroke your chin and ponder the big picture and the long term is not an option. You have to channel MacGyver, reach for the duct tape and cobble together a solution that works right now. When the astronauts on the Apollo 13 radioed Houston about their 'problem' back in 1970, the boffins at NASA mission control did not launch a full inquiry into what caused the space craft's oxygen tanks to explode. Instead, they rolled up their sleeves and toiled round the clock to devise a quick-and-dirty workaround that would modify the carbon dioxide filters so the astronauts could use the lunar module as a lifeboat. Inside 40 hours the crack problem-solvers in Houston came up with an ingenious solution using materials on board the ship: cardboard, suit hoses, plastic stowage bags, even duct tape. It was not a permanent fix, but it brought the Apollo 13 crew home safely. Afterwards NASA pulled the Andon rope, spending thousands of hours working out exactly what went wrong with those oxygen tanks and devising a Slow Fix to make sure they never exploded again.

Yet how many of us follow NASA's lead? When a quick fix eases the symptoms of a problem, as that acupuncture session did for my back, our appetite for pulling the Andon rope tends to fade. After a tidal wave of bad debt threatened to torpedo the world economy in 2008, governments around the world swiftly put together bail-outs totalling over $5 trillion dollars. That was the necessary quick fix. Once the threat of global meltdown receded, however, so too did the will to follow up with a deeper fix. Everywhere, politicians failed to push through the sort of root and branch reform that would guard against *Financial Armageddon 2: The Sequel*.

Too often, when a quick fix goes wrong, we wring our hands, promise to turn over a new leaf and then go back to making the same mistakes all over again. 'Even when a more fundamental change is required, people still go into quick-fix mode,' says Ranjay Gulati, a professor of business administration at Harvard Business School. 'They appear to make the right noises and take the right steps, but ultimately they fail to follow through, so that what starts out as a slow fix ends up being just another quick fix. This is a common problem.'

BP is a textbook example. In 2005 the company's refinery in Texas exploded, killing 15 workers and injuring 180 more. Less than a year later, oil was twice found to be leaking from a 25-kilometre stretch of corroded BP pipeline off the coast of Alaska. Coming so close together, these two incidents should have been a wake-up call, a warning that years of cutting corners had started to backfire. In 2006 John Browne, then BP's chief executive, seemed to agree the time for quick fixes was over. 'We have to get the priorities right,' he announced. 'And job one is to get to these things that have happened, get them fixed and get them sorted out. We don't just sort them out on the surface, we get them fixed deeply.'

Only that never happened. Instead, BP carried on much as before, earning a slew of official reprimands and a hefty fine for failing to live up to Browne's pledge. In April 2010 the company paid the price for its cavalier approach when an explosion ripped through its Deepwater Horizon rig, killing 11 workers, injuring 17 others and eventually spewing more than 200 million gallons of crude oil into the Gulf of Mexico, making it the worst environmental disaster in US history.

The BP fiasco is a reminder of just how perniciously addictive the quick fix can be. Even when lives and large sums of money are at stake, when everything from our health and relationships to our work and the environment is suffering, even when bombarded by evidence that the road to calamity is paved with band-aid solutions, we still gravitate towards the quick fix, like moths to a flame.

The good news is we can beat this addiction. In every walk of life, more and more of us are starting to accept that when tackling hard problems faster is not always better, that the best solutions take flight when we invest enough time, effort and resources. When we slow down, in other words.

There are many questions to answer in this book. What is the Slow Fix? Is it the same recipe for every problem? How do we know when a problem has been properly solved? Above all, how can we put the Slow Fix into practice in a world addicted to speed?

To answer those questions, I have been travelling the planet, meeting people who are taking a fresh approach to solving tough problems. We will visit the mayor who revolutionised public transport in Bogotá, Colombia; hang out with the warden and inmates at a state-of-the-art prison in Norway; explore how Icelanders are reinventing democracy. Some solutions we encounter may work in your own life, organisation or community, but my goal is to go much deeper. It is to draw some universal lessons about how to find the best solution when anything goes wrong. That means spotting the common ground between problems that on the surface seem completely unrelated. What lessons can peace negotiators in the Middle East, for instance, take from the organ donor system in Spain? How can a community regeneration programme in Vietnam help boost productivity in a company in Canada? What insights can French researchers trying to reinvent the water-bottle take from the rehabilitation of a failing school in Los Angeles? What can we all learn from the troubleshooters at NASA, the young problem-solvers in Odyssey of the Mind, or gamers who spend billions of hours tackling problems online?

This book is also a personal quest. After years of false dawns and half-measures, of shortcuts and red herrings, I want to work out what is wrong with my back. Is it my diet? My posture? My lifestyle? Is there an emotional or psychological root to all this spinal misery? I am finally ready to slow down and do the hard work needed to repair my back once and for all. No more duct tape, band-aid or chewing-gum cures. No more peeing on frozen legs.

The time has come for the Slow Fix.

CHAPTER ONE
Why the Quick Fix?

I want it all, and I want it now.

Queen, rock group

St Peter's Church seems untouched by the impatient swirl of downtown Vienna. It stands in a narrow square, tucked away from the noisy shopping streets that criss-cross the Austrian capital. Buildings lean in from all sides like soldiers closing ranks. Visitors often wander past without even noticing the church's delicious baroque façade and green domes.

Stepping through the immense wooden doors is like passing through a wormhole to a time when there were few reasons to rush. Gregorian chants whisper from hidden speakers. Candles cast flickering light on gilded altarpieces and paintings of the Virgin Mary. The smell of burning incense sweetens the air. A stone staircase, winding and weathered, leads down into a crypt dating back a thousand years. With thick walls blocking out mobile phone signals, the silence feels almost metaphysical.

I have come to St Peter's to discuss the virtues of slowing down. It is a soirée for business people, but some clergy are also present. At the end of the evening, when most of the guests have dispersed into the Viennese night, Monsignor Martin Schlag, resplendent in his purple cassock, comes up to me, a little sheepishly, to make a confession. 'As I was listening to you, I suddenly realised how easy it is for all of us to get infected by the impatience of the modern world,' he says. 'Lately, I must admit, I have been praying too fast.'

We both laugh at the irony of a man of the cloth behaving like a man in a suit, but his transgression underlines just how deep the quick-fix impulse runs. After all, prayer may be the oldest ritual for solving problems. Throughout history and across cultures, our ancestors have turned to gods and spirits in times of need, seeking help in tackling everything from floods and famine to drought and disease. Whether praying can actually solve problems is a matter of debate, but one thing is clear: no god has ever offered succour to those who pray faster. 'Prayer is not meant to be a shortcut,' says Monsignor Schlag. 'The whole point of praying is to slow down, listen, think deeply. If you hurry prayer, it loses its meaning and power. It becomes an empty quick fix.'

If we are going to start solving problems thoroughly, we must first understand our fatal attraction to speedy solutions. We need to know why even people like Monsignor Schlag, who devote their lives to serene contemplation in places like St Peter's, still fall for the quick fix. Are we somehow hardwired to reach for the duct-tape? Does modern society make it harder to resist peeing on frozen legs?

After my encounter with the monsignor, I turn to a secular expert on the workings of the human brain. Peter Whybrow is a psychiatrist and director of the Semel Institute for Neuroscience and Human Behavior at the University of California in Los Angeles. He is also the author of a book called *American Mania*, which explores how brain machinery that helped early man survive in a world of privation makes us prone to gorging in the modern age of plenty. Along with many in the field of neuroscience, he believes our addiction to the quick fix has physiological roots.

The human brain has two basic mechanisms for solving problems, which are commonly known as System 1 and System 2. The first is fast and intuitive, almost like thinking without thinking. When we see a lion eyeing us from across a watering hole, our brains instantly map out the best escape route and send us hurtling towards it. Quick fix. Problem solved. But System 1 is not just for life-or-death situations. It is the shortcut we use to navigate through daily life. Imagine if you had to reach every decision, from which sandwich to buy at lunch to whether to smile back at that fetching stranger on the subway, through deep analysis and anguished navel-gazing. Life would be unbearable. System 1 saves us the trouble.

By contrast, System 2 is slow and deliberate. It is the conscious thinking we do when asked to calculate 23 times 16 or analyse the possible side effects of a new social policy. It involves planning, critical analysis and rational thought, and is driven by parts of the brain that continue to develop after birth and into adolescence, which is why children are all about instant gratification. Not surprisingly, System 2 consumes more energy.

System 1 was a good match for life in the distant past. Our early ancestors had less need to ruminate deeply or take the long view. They ate when hungry, drank when thirsty and slept when tired. 'There was no tomorrow when living on the savannah, and survival depended on what you did each day,' says Whybrow. 'So the physiological systems that we inherited in the brain and body focused on finding short-term solutions and rewarding us for pursuing them.' After farming began to take hold 10,000 years ago, planning for the future became an asset. Now, in a complex, post-industrial world, System 2 should be king.

Only it is not. Why? One reason is that, inside our 21st-century heads, we are still roaming the savannah. System 1 holds sway because it takes a lot less time and effort. When it kicks in, the brain floods with reward chemicals like dopamine, which deliver the kind of feel-good jolt that keeps us coming back for more. That's why you get a little thrill every time you graduate to the next level in *Angry Birds* or cross an item off your To-Do list: job done, reward delivered, move on to the next thrill. In the cost–benefit calculus of neuroscience, System 1 offers maximum return for minimum effort. The rush it delivers can even become an end in itself. Like coffee addicts itching for a shot of caffeine, or smokers dashing outside for a cigarette, we get hooked on the quick fix of the quick fix. By comparison, System 2 can seem a dour taskmaster, demanding toil and sacrifice today in return for the promise of some vague pay-off in the future, like a personal trainer barking at us to eschew that chocolate éclair in favour of another 20 push-ups, or a parent nagging us to hit the books instead of running outside to play. Henry T. Ford was referring to System 2 when he said, 'Thinking is the hardest work there is, which is the probable reason why so few engage in it.'

System 2 can also act like a spin doctor, rationalising our preference for short-term rewards. After yielding to temptation and wolfing down that éclair, we convince ourselves that we deserved a treat, needed the energy boost or will burn off the extra calories in the gym. 'The bottom line is that the primitive brain is wired for the quick fix; it always has been,' says Whybrow. 'The delayed gratification that comes with taking the long view is hard work. The quick fix comes more naturally to us. That's where we get our pleasure. We enjoy it and soon we want it quicker and quicker.'

That is why our ancestors warned against quick fixes long before Toyota invented the Andon rope. In the Bible, Peter urges Christians to be patient: 'The Lord is not slow to fulfil his promise as some count slowness, but is patient towards you, not wishing that any should perish, but that all should reach repentance.' Translation: God is not in the business of supplying real-time solutions. Nor was it just religious authorities that fretted over man's soft spot for the siren call of short-termism. John Locke, a leading thinker of the Enlightenment, warned that quick-fix merchants were on the road to ruin. 'He that has not mastery over his inclinations, he that knows not how to resist the importunity of present pleasure or pain, for the sake of what reason tells him is fit to be done, wants the true principle of virtue and industry, and is in danger never to be good at anything,' he wrote. A century later, Alexander Hamilton, one of the founding fathers of the United States of America, restated the danger: 'Momentary passions and immediate interests have a more active and imperious control over human conduct than general or remote considerations of policy, utility or justice.' A distrust of snap decisions lingers even in the modern era. In the face of a dire medical diagnosis, the conventional advice is to seek a second opinion. Governments, businesses and other organisations spend billions gathering the data, research and analysis to help them solve problems thoroughly.

So, why, despite all these warnings and exhortations, do we still fall for the quick fix? The lure of System 1 is only part of the explanation. Over hundreds of thousands of years, the human brain

has evolved a whole array of quirks and mechanisms that distort our thinking and nudge us in the same direction.

Consider our natural penchant for optimism. Across cultures and ages, research has shown that most of us expect the future to be better than it ends up being. We significantly underestimate our chances of being laid off, divorced or diagnosed with a fatal illness. We expect to sire gifted children, outperform our peers and live longer than we actually do. To paraphrase Samuel Johnson, we let hope triumph over experience. This tendency may have an evolutionary purpose, spurring us to strive and push forward, rather than retreat to a dark corner to brood on the unfairness of it all. In *The Optimism Bias*, Tali Sharot argues that belief in a better future fosters healthier minds in healthier bodies. Yet she warns that too much optimism can backfire. After all, who needs regular health check-ups or a retirement savings plan if everything is going to pan out in the end? '"Smoking kills" messages don't work because people think their chances of cancer are low,' says Sharot. 'The divorce rate is 50 per cent, but people don't think it's the same for them. There is a very fundamental bias in the brain.' And that bias affects the way we tackle problems. When you slip on the rose-tinted spectacles, the easy quick fix suddenly looks a whole lot more plausible.

The human brain also has a natural fondness for familiar solutions. Instead of taking the time to understand a problem on its own merits, our habit is to reach for fixes that have worked on similar problems in the past, even when better options are staring us in the face. This bias, uncovered in study after study, is known as the Einstellung effect. It was useful back in the days when mankind faced a limited set of urgent and straightforward problems such as how to avoid being eaten by a lion; it is less helpful in a modern world of spiralling complexity. The Einstellung effect is one reason we often make the same mistakes over and over again in politics, relationships and careers.

Another is our aversion to change. Conservatives do not have a monopoly on wanting to keep things as they are. Even when confronted with compelling arguments for a fresh start, the human instinct is to stay put. That's why we can read a self-help book, nod in agreement all the way through, and then fail to put any of the advice into practice. Psychologists call this inertia the 'status-quo bias'. It explains why we always sit in the same place in a classroom when there is no seating plan or stick with the same bank, pension provider and utility company when rivals offer better deals. This resistance to change is woven into our vernacular. 'If it ain't broke, don't fix it,' we say, or, 'You can't teach an old dog new tricks.' Along with the Einstellung effect, the status-quo bias makes it harder for us to break out of a quick-fix rut.

Combine that with our reluctance to admit mistakes and you end up with another obstacle to the Slow Fix: the so-called 'legacy problem'. The more we invest in a solution – staff, technology, marketing, reputation – the less inclined we are to question it or search for something better. That means we would rather stand by a fix that is not working than start looking for one that does. Even the nimblest problem-solvers can fall into this trap. In the early 2000s a trio of software whizzes in Estonia wrote some code that made it easy to make telephone calls over the Internet. Result: the birth of one of the fastest-growing companies of the 21st century. A decade later the Skype headquarters in Tallinn, the capital of Estonia, remains a shrine to start-up chic, with bare brick walls, bean bags and funky art. Everywhere you look, multinational hipsters are sipping mineral water or fiddling with iPads. On a landing near the room where I meet Andres Kütt, Skype's young, goateed business evangelist, stands a whiteboard covered in squiggles from the last brainstorming session.

Even in this iconoclastic bear pit, the wrong fix can win stubborn defenders. At 36, Kütt is already a seasoned problem-solver. He helped pioneer Internet banking and spearheaded efforts to get Estonians to file their tax returns online. He worries that, by growing old enough and big enough to have vested interests, Skype has lost some of its problem-solving mojo. 'Legacy is now a big problem for us, too,' he says. 'You make a massive investment to solve a problem and suddenly the problem is surrounded by a huge number of people and systems that want to justify their existence. You end up with a scenario where the original source of the problem is hidden and hard to reach.' Rather

than change tack, people in those circumstances usually plough on with the prevailing fix. 'It is scary to step back and deal with the idea that your old solutions may not even work, and to contemplate investing time, money and energy in finding better ones,' says Kütt. 'It's so much easier and safer to stay in your comfort zone.'

Clinging to a sinking ship may be irrational, but the truth is we are not as rational as we like to imagine. Study after study shows that we assume people with deeper voices (usually men) are cleverer and more trustworthy than those who speak in a higher register (usually women). We also tend to think good-looking folk are smarter and more competent than they really are. Or consider the Side Salad Illusion. In one study carried out at the Kellogg School of Management, people were asked to estimate the number of calories in unhealthy foods, such as bacon-and-cheese waffles. They then guessed the caloric content of those same foods when paired with a healthy side dish, such as a bowl of carrot and celery sticks. Time and again, people concluded that adding a virtuous accompaniment made the *whole* meal contain fewer calories, as if the healthy food could somehow make the unhealthy food less fattening. And this halo effect was three times more pronounced among avid dieters. The conclusion of Alexander Chernev, the lead researcher: 'People often behave in a way that is illogical and ultimately counterproductive to their goals.'

You can say that again. Our gift for tunnel vision can seem limitless. When confronted by awkward facts that challenge our favoured view – proof that our quick fix is not working, for instance – we tend to write them off as a rogue result, or as evidence that 'the exception proves the rule'. This is known as the confirmation bias. Sigmund Freud called it 'denial', and it goes hand in hand with the legacy problem and the status-quo bias. It can generate a powerful reality distortion field. When told by doctors they are going to die, many people block out the news entirely. Sometimes we cling to our beliefs even in the face of slam-dunk evidence to the contrary. Look at the cottage industry in Holocaust denial. Or how, in the late 1990s, Thabo Mbeki, then the president of South Africa, refused to accept the scientific consensus that AIDS was caused by the HIV virus, leading to the death of more than 330,000 people.

Even when we have no vested interest in distorting or filtering out information, we are still prone to tunnel vision. In an experiment repeated dozens of times on YouTube, test subjects are asked to count the number of passes made by one of two teams playing basketball together in a video. Because both sides have a ball, and the players are constantly weaving in and out around one another, this demands real concentration. Often, that sort of focus is useful, allowing us to block out the distractions that militate against deep thinking. But sometimes it can narrow the lens so we miss valuable bits of information and fail to see the forest for the trees. Halfway through the video a man dressed in a gorilla suit wanders into the middle of the basketball game, turns towards the camera, beats his chest, and walks out again. Guess how many people fail to spot the gorilla? More than half.

What all this underlines is an alarming truth: the human brain is chronically unreliable. The optimism, status-quo and confirmation biases; the lure of System 1; the Einstellung effect, denial and the legacy problem – sometimes it seems as if embracing the quick fix is our biological destiny. Yet neurological wiring is only part of the story. We have also built a roadrunner culture that steers us into Quick Fix Avenue.

These days, hurry is our answer to every problem. We walk fast, talk fast, read fast, eat fast, make love fast, think fast. This is the age of speed yoga and one-minute bedtime stories, of 'just in time' this and 'on demand' that. Surrounded by gadgets that perform minor miracles at the click of a mouse or the tap of a screen, we come to expect everything to happen at the speed of software. Even our most sacred rituals are under pressure to streamline, accelerate, get up to speed. Churches in the United States have experimented with drive-thru funerals. Recently the Vatican was forced to warn Catholics they could not gain absolution by confessing their sins through a smartphone app. Even our recreational drugs of choice nudge us into quick fix mode: alcohol, amphetamines and cocaine all shift the brain into System 1 gear.

The economy ramps up the pressure for quick fixes. Capitalism has rewarded speed since long before high-frequency trading. The faster investors turn a profit, the faster they can reinvest to make even more money. Any fix that keeps the cash flowing, or the share price buoyant, stands a good chance of carrying the day – because there is money to be made right now and someone else can clean up the mess later. That mindset has sharpened over the last two decades. Many companies spend more time fretting over what their stock prices are doing today than over what will make them stronger a year from now. With so many of us working on short-term contracts, and hopping from job to job, the pressure to make an instant impact or tackle problems with little regard for the long term is immense. This is especially true in the boardroom, where the average tenure for a global CEO has fallen sharply in recent years. In 2011, Leo Apotheker was fired as the boss of Hewlett-Packard after less than 11 months in the post. Dominic Barton, the managing director of McKinsey and Company, a leading consulting firm, hears the same lament from chief executives around the world: we no longer have enough time or incentive to look beyond the next quick fix. His verdict: 'Capitalism has become too short-term.'

Modern office culture tends to reinforce that narrowing of horizons. When did you last have the time to take a long, hard look at a problem at work? Or even just to think deeply for a few minutes? Never mind tackling the big questions, such as where you want to be five years from now or how you might redesign your workplace from the bottom up. Most of us are too distracted by a never-ending blizzard of trivial tasks: a document to sign, a meeting to attend, a phone call to answer. Surveys suggest business professionals now spend half their working hours simply managing their email and social media inboxes. Day after day, week after week, the immediate trumps the important.

Politics is also steeped in the quick fix. Elected officials have every incentive to favour policies that will bear fruit in time for the next election. A cabinet minister may need results before the next reshuffle. Some analysts argue that each US administration enjoys only six months – that window between the Senate's confirming its staff and the start of electioneering for the mid-term elections – when it can look beyond the daily headlines and polling numbers to concentrate on strategic decisions over the long term. Nor does it help that we tend to favour decisive, shoot-from-the-hip leadership. We love the idea of a lone hero riding into town with a ready-made solution in his saddle bag. How many figures have ever won power by declaring 'It will take me a long time to work out how to solve our problems?' Slowing down to reflect, analyse or consult can seem indulgent or weak, especially in moments of crisis. Or as one critic of the more cerebral Barack Obama put it: 'We need a leader, not a reader.' Daniel Kahneman, author of *Thinking, Fast and Slow* and only the second psychologist ever to win the Nobel Prize for Economics, believes our natural preference for politicians who follow their gut turns democratic politics into a carousel of quick fixes. 'The public likes fast decisions,' he says, 'and that encourages leaders to go with their worst intuitions.'

Nowadays, though, it is no longer just politicians and business chiefs that believe they can wave a magic wand. We're all at it in this age of bullshit, bluster and blarney. Look at the parade of tone-deaf wannabes vowing to be the next Michael Jackson or Lady Gaga on *The X Factor*. With so much pressure to stand out, we embellish our CVs, post flattering photos on Facebook and holler for attention on blogs and Twitter. A recent study found that 86 percent of 11-year-olds use social media to build their 'personal brand' online. Some of this chest-thumping may win friends and influence people, but it can also drive us into the arms of the quick fix. Why? Because we end up lacking the humility to admit that we do not have all the answers, that we need time and a helping hand.

The self-help industry must take some of the blame for this. After years of reading and writing about personal development, Tom Butler-Bowdon fell out of love with his own field. Too many motivational gurus, he decided, hoodwink the public with short cuts and quick fixes that do not really work. As a riposte, he published *Never Too Late to Be Great*, which shows how the best solutions in every field, from the arts to business to science, usually have a long gestation period. 'By glossing over

the fact that it takes time to produce anything of quality, the self-help industry has bred a generation of people that expect to fix everything tomorrow,' he says.

The media add fuel to that fire. When anything goes wrong – in politics, business, a celebrity relationship – journalists pounce, dissecting the crisis with glee and demanding an instant remedy. After the golfer Tiger Woods was outed as a serial philanderer, he vanished from the public eye for three months before finally breaking his silence to issue a *mea culpa* and announce he was in therapy for sex addiction. How did the media react to being made to wait that long? With fury and indignation. The worst sin for a public figure on the ropes is to fail to serve up an instant exit strategy.

That impatience fuels a tendency to overhype fixes that later turn out to be complete turkeys. An engineer by training, Marco Petruzzi worked as a globetrotting management consultant for 15 years before abandoning the corporate world to build better schools for the poor in the United States. We will meet him again later in the book, but for now consider his attack on our culture of hot air. 'In the past, hard-working entrepreneurs developed amazing stuff over time, and they *did* it, they didn't just *talk* about it, they *did* it,' he says. 'We live in a world now where talk is cheap and bold ideas can create massive wealth without ever having to deliver. There are multi-billionaires out there who never did anything but capture the investment cycle and the spin cycle at the right moment, which just reinforces a culture where people don't want to put in the time and effort to come up with real and lasting solutions to problems. Because if they play their cards right, and don't worry about the future, they can get instant financial returns.'

From most angles, then, the quick fix looks unassailable. Everything from the wiring of our brains to the ways of the world seems to favour band-aid solutions. Yet all is not lost. There is hope. Wherever you go in the world today, and in every walk of life, more people are turning away from the quick fix to find better ways to solve problems. Some are toiling below the radar, others are making headlines, but all share one thing in common: a hunger to forge solutions that actually work.

The good news is the world is full of Slow Fixes. You just have to take the time to find and learn from them.

CHAPTER TWO

CONFESS: The Magic of Mistakes and the *Mea Culpa*

Success does not consist in never making mistakes but in never making the same one a second time.
George Bernard Shaw

On a crisp night in early September, four Typhoon fighter jets roared across the sky above the freezing waters of the North Sea. Locked in a two-on-two dogfight, they swooped, banked and sliced through the darkness at up to 500 miles per hour, searching for a kill-shot. It was a training exercise, but to the pilots it all seemed very real. Strapped into his cockpit, with 24,000 pounds of killing machine throbbing at his fingertips, Wing Commander Dicky Patounas was feeling the adrenaline. It was his first night-time tactical sortie in one of the most powerful fighter jets ever built.

'We're in lights off because we're doing this for real, which we don't do very often, so it's pitch black and I'm on goggles and instruments only,' Patounas recalls. 'I'm working the radar, putting it in the right mode by shortening the range, changing the elevation, all basic stuff. But the plane was new to me, so I'm maxed out.' And then something went wrong.

A few months later Patounas relives that night back on the ground. His air base, RAF Coningsby, is in Lincolnshire, an eastern county of England whose flat, featureless terrain is prized more by aviators than by tourists. Dressed in a green flight suit festooned with zippers, Patounas looks like a *Top Gun* pilot from central casting – square jaw, broad shoulders, ramrod posture and cropped hair. He whips out pen and paper to illustrate what happened next on that September night, speaking in the clipped tones of the British military.

Patounas was flying behind the two 'enemy' Typhoons when he decided to execute a manoeuvre known as the overshoot to a Phase 3 Visual Identification (VID). He would pull out to the left and then slingshot back onto his original course, popping up right behind the trailing enemy plane. But something unforeseen happened. Instead of holding their course, the two rival jets up ahead banked left to avoid a helicopter 20 miles away. Both pilots announced the change on the radio but Patounas failed to hear it because he was too distracted executing his manoeuvre. 'It's all quite technical,' he says. 'You've got to do 60 degrees angle of bank through 60 degrees and then roll out for 20 seconds, then put your scanner down by 4 degrees, then change your radar to 10-mile scale, and after 20 seconds you come right using 45 degrees angle of bank, you go through 120 degrees, you roll out and pick up the guy on your radar and he should be at about 4 miles. So I'm working all this out and I miss the radio call stating the new heading.'

When Patounas rolled back out of the manoeuvre, he spotted an enemy Typhoon in front of him just as expected. He was pumped. 'This aircraft now appears under my cross where I put it for the guy to appear, so I think I've done the perfect overshoot,' he says. 'I've set my radar up, pitched back in and the guy I'm looking for is under my cross in the pitch black. And I go, "I'm a genius, I'm good at this shit." I was literally thinking I've never flown one so perfectly.'

He shakes his head and laughs wryly at his own hubris: it turned out the wrong Typhoon was in his crosshairs. Instead of ending up behind the trailing jet, Patounas was following in the slipstream of the frontrunner – and he had no idea. 'It was my mistake: I basically lost awareness of two of the aircraft,' he says. 'I knew they were there but I didn't ensure I could see two tracks. What I should have done was bump the range scale up and have a look for the other guy, but I didn't because I said to myself, "This is perfect."'

The result was that Patounas passed within 3,000 feet of the rear Typhoon. 'It wasn't that close but the key is I had no awareness, because I didn't even know he was there,' he says. 'It could have been three feet, or I could have flown right into him.' Patouanas falls quiet for a moment, as if picturing the worst-case scenario. On that September night his wingman watched the whole fiasco unfold, knew

there was no real danger of a collision and allowed the exercise to continue, but a similar mistake in real combat could have been catastrophic – and Patounas knew it.

The rule of thumb in civil aviation is that a typical air accident is the result of seven human errors. Each mistake on its own may be harmless, even trivial, but string them together and the net effect can be lethal. Flying modern fighter jets, with their fiendishly complex computer systems, is an especially risky business. While enforcing the no-fly zone over Libya in 2011, a US F-15E crashed outside Benghazi after a mechanical failure. A month earlier, two F-16s from the Royal Thai air force fell from the sky during a routine training exercise.

What was surprising about the Typhoon incident over the North Sea was not that it happened but how Patounas reacted: he told everyone about his mistake. In the macho world of the fighter pilot, *mea culpas* are thin on the ground. As a 22-year veteran of the RAF and commander of a squadron of 18 Typhoon pilots, Patounas had a lot to lose yet still gathered together his entire crew and owned up. 'I could have come away from this and not said anything, but the right thing to do was to raise it, put it into my report and get it in the system,' he says. 'I briefed the whole squadron on how I make mistakes and the mistake I made. That way people know I'm happy to put my hand up and say I messed up too, I'm human.'

This brings us to the first ingredient of the Slow Fix: admitting when we are wrong in order to learn from the error. That means taking the blame for serious blunders as well as the small mistakes and near misses, which are often warning signs of bigger trouble ahead.

Yet highlighting errors is much harder than it sounds. Why? Because there is nothing we like less than owning up to our mistakes. As social animals, we put a high premium on status. We like to *fare bella figura*, as the Italians say, or look good in front of our peers – and nothing ruins a nice *figura* more than screwing something up.

That is why passing the buck is an art form in the workplace. My first boss once gave me a piece of advice: 'Remember that success has many fathers but failure is an orphan.' Just look at your own CV – how many of your mistakes from previous jobs are listed there? On *The Apprentice*, most boardroom showdowns involve contestants pinning their own blunders on rivals. Even when big money is at stake, companies often choose to bury their heads in the sand rather than confront errors. Nearly half of financial services firms do not step in to rescue a floundering project until it has missed its deadline or run over budget. Another 15 per cent lack a formal mechanism to deal with a project's failure.

Nor does it help that society often punishes us for embracing the *mea culpa*. In a hyper-competitive world, rivals pounce on the smallest error, or the tiniest whiff of doubt, as a sign of weakness. Though Japanese business chiefs and politicians sometimes bow and beg for forgiveness, their counterparts elsewhere bend both language and credibility to avoid squarely owning up to a mistake. In English, the word 'problem' has been virtually excised from everyday speech in favour of anodyne euphemisms such as 'issue' and 'challenge'. Hardly a surprise when studies show that executives who conceal bad news from the boss tend to climb the corporate ladder more quickly.

In his retirement, Bill Clinton makes it a rule to say 'I was wrong' or 'I didn't know that' at least once a day. If such a moment fails to arise naturally, he goes out of his way to engineer one. He does this to short-circuit the Einstellung effect and all those other biases we encountered earlier. Clinton knows the only way to solve problems in a complex, ever-changing world is to keep an open mind – and the only way to do that is to embrace your own fallibility. But can you imagine him uttering those phrases while he was President of the United States? Not a chance. We expect our leaders to radiate the conviction and certainty that come from having all the answers. Changing direction, or your mind, is never taken as proof of the ability to learn and adapt; it is derided as flip-flopping or wimping out. If President Clinton had confessed to making mistakes, or entertaining doubts about his own policies, his political enemies and the media would have ripped him to pieces.

The threat of litigation is another incentive to shy away from a proper *mea culpa*. Insurance companies advise clients never to admit blame at the scene of a traffic accident, even if the crash was clearly their fault. Remember how long it took BP to issue anything resembling an official apology for the Deepwater Horizon oil spill? Nearly two months. Behind the scenes, lawyers and PR gurus pored over legal precedents to fashion a statement that would appease public opinion without opening the door to an avalanche of lawsuits. Nor is it just companies that shrink from accepting blame. Even after they leave office and no longer need to woo the electorate, politicians find it hard to own up to their errors. Neither Tony Blair nor George W. Bush has properly apologised for invading Iraq in search of weapons of mass destruction that did not exist. Remove individual ego from the equation, and collectively we still shy away from *mea culpas*. Britain waited nearly four decades to issue a formal apology for the Bloody Sunday massacre in Northern Ireland in 1972. Australia only apologised in 2008 for the horrors visited upon its aboriginal peoples, followed a year later by the US Senate apologising to African-Americans for the wrongs of slavery.

Even when there are no witnesses to our slip-ups, admitting we are wrong can be wrenching. 'Nothing is more intolerable,' Ludwig van Beethoven noted, 'than to have to admit to yourself your own errors.' Doing so forces you to confront your frailties and limitations, to rethink who you are and your place in the world. When you mess up, and admit it to yourself, there is nowhere to hide. 'This is the thing about fully experiencing wrongness,' wrote Kathryn Schulz in her book *Being Wrong*. 'It strips us of all our theories, including our theories about ourselves … it leaves us feeling flayed, laid bare to the bone and the world.' Sorry really is the hardest word.

This is a shame, because mistakes are a useful part of life. To err is human, as the saying goes. Error can help us solve problems by showing us the world from fresh angles. In Mandarin, the word 'crisis' is rendered with two characters, one signifying 'danger', the other 'opportunity'. In other words, every screw-up holds within it the promise of something better – if only we take the time to acknowledge and learn from it. Artists have known this for centuries. 'Mistakes are almost always of a sacred nature,' observed Salvador Dalí. 'Never try to correct them. On the contrary: rationalise them, understand them thoroughly. After that, it will be possible for you to sublimate them.'

That same spirit reigns in the more rigorous world of science, where even a failed experiment can yield rich insights and open new paths of inquiry. Many world-changing inventions occurred when someone chose to explore – rather than cover up – an error. In 1928, before leaving to spend August with his family, Sir Alexander Fleming accidentally left a petri dish containing *staphylococcus* bacteria uncovered in his basement laboratory in London. When he returned a month later he found a fungus had contaminated the sample, killing off all the surrounding bacteria. Rather than toss the dish in the bin, he analysed the patch of mould and found it contained a powerful infection-fighting agent. He named it *Penicillium notatum*. Two decades later, penicillin, the world's first and still most widely used antibiotic, hit the market, revolutionising healthcare and earning Fleming a Nobel prize in Medicine. 'Anyone who has never made a mistake,' said Einstein, 'has never tried anything new.'

Military folk have always known that owning up to mistakes is an essential part of learning and solving problems. Errors cost lives in the air force, so flight safety has usually taken precedence over *fare bella figura*. In the RAF's long-running monthly magazine, *Air Clues*, pilots and engineers write columns about mistakes made and lessons learned. Crews are also fêted for solving problems. In a recent issue, a smiling corporal from air traffic control received a Flight Safety Award for overruling a pilot and aborting a flight after noticing a wingtip touch the ground during take-off.

In the RAF, as in most air forces around the world, fighter pilots conduct no-holds-barred debriefings after every sortie to examine what went right and wrong. But that never went far enough. RAF crews tended to share their mistakes only with mates rather than with their superiors or rival squadrons. As one senior officer says: 'A lot of valuable experience that could have made flying safer for everyone was just seeping away through the cracks.'

To address this, the RAF hired Baines Simmons, a consulting firm with a track record in civil aviation, to devise a system to catch and learn from mistakes, just as the transportation, mining, food and drug safety industries have done.

Group Captain Simon Brailsford currently oversees the new regime. After joining the RAF as an 18-year-old, he went on to fly C130 Hercules transport planes as a navigator in Bosnia, Kosovo, northern Iraq and Afghanistan. Now 46, he combines the spit-and-polish briskness of the officers' mess with the easy charm of a man who spent three years as the Equerry to Her Majesty Queen Elizabeth II.

On the whiteboard in his office he uses a red felt-tip pen to sketch me a picture of a crashed jet, a dead pilot and a plume of smoke. 'Aviation is a dangerous business,' he says. 'What we're trying to do is stop picking up the deceased and the bits of the broken aeroplane on the ground and pull the whole story back to find out the errors and the near misses that can lead to the crash, so the crash never happens in the first place. We want to solve issues before they become problems.'

Every time crew members at RAF Coningsby catch themselves doing something that could jeopardise safety, they are now urged to submit a report online or fill in one of the special forms pinned up in work stations all over the base. Those reports are then funnelled to a central office, which decides whether to investigate further.

To make the system work, the RAF tries to create what it calls a 'just culture'. When someone makes a mistake, the automatic response is not blame and punishment; it is to explore what went wrong in order to fix and learn from it. 'People must feel that if they tell you something, they're not going to get into trouble, otherwise they won't tell you when things go wrong, and they might even try to cover them up,' says Brailsford. 'That doesn't mean they won't get told off or face administrative action or get sent for extra training, but it means they'll be treated in a just manner befitting what happened to them, taking into account the full context. If you make a genuine mistake and put up your hand, we will say thank you. The key is making sure everyone understands that we're after people sharing their errors rather than keeping it to themselves so that we're saving them and their buddies from serious accidents.'

RAF Coningsby rams home that message at every turn. All around the base, in hallways, canteens and even above the urinals, posters urge crew to flag even the tiniest safety concern. Toilet cubicles are stuffed with laminated brochures explaining how to stay safe and why even the smallest mishap is worth reporting. Hammered into the ground beside the main entrance is a poster bearing a photo of the Station Flight Safety Officer pointing his finger in the classic Lord Kitchener pose. Printed above his office telephone number is the question: 'So what did you think of today?' The need to admit mistakes is also baked into cadets at military academy. 'It's definitely drilled into us from the start that "we prefer you mess up and let us know",' says one young engineer at RAF Coningsby. 'Of course, you get a lot of stick and banter from your mates for making mistakes, but we all understand that owning up is the best way to solve problems now and in the future.'

The RAF ensures that crew see the fruits of their *mea culpas*. Safety investigators telephone all those who flag up problems within 24 hours, and later tell them how the case was concluded. They also conduct weekly workshops with engineers to explain the outcome of all investigations and why people were dealt with as they were. 'You can see their eyebrows go up when it's clear they won't be punished for making a mistake and they might actually get a pat on the back,' says one investigator.

Group Captain Stephanie Simpson, a 17-year veteran of the RAF, is in charge of safety in the engineering division at Coningsby. She has quick, watchful eyes and wears her hair scraped back in a tight bun. She tells me the new regime paid off recently when an engineer noticed that carrying out a routine test on a Typhoon had sheared off the end of a dowel in the canopy mechanism. A damaged canopy might not open, meaning a pilot trying to jettison from the cockpit would be mashed against the glass.

The engineer filed a report and Simpson's team swung into action. Within 24 hours they had figured out that an elementary mistake during the canopy test could damage the dowel. There was no requirement to go back and check afterwards. Flight crews immediately inspected the suspect part across the entire fleet of Typhoons in Europe and Saudi Arabia. The procedure was then changed to ensure that the dowel is no longer damaged during the test.

'Ten years ago this would probably never have been reported – the engineers would have just thought, "Oh, that's broken, we'll just quietly replace it," and then carried on,' says Simpson. 'Now we're creating a culture where everyone is thinking, "Gosh, there could be other aircraft on this station with the same problem that might not be spotted in future so I'd better tell someone right now." That way you stop a small problem becoming a big one.'

Thanks to Patounas's candour, an RAF investigation discovered that a series of errors led to the near miss above the North Sea. His own failure to hear the order to bank left was the first. The second was that the other pilots changed course even though he did not acknowledge the fresh heading. Then, after Patounas overshot, the whole team failed to switch on their lights. 'It turned out a whole set of factors were not followed and if anyone had done one of the things they should have, it wouldn't have happened,' says Patounas. 'The upside is this reminds everyone of the rules for doing a Phase 3 VID at night. So next time we won't have the same issue.'

Others in his squadron are already following his lead. Days before my visit, a young corporal pointed out that certain procedures were not being properly followed. 'What she said was not a particularly good read, but that's going in her report as a positive because she had the courage of her convictions to go against the grain when she could have been punished,' says Patounas. 'Twenty years ago, she wouldn't have raised the question or if she had she'd have been told, "Don't you say how rubbish my squadron is! I want my dirty laundry kept to me," whereas I'm saying thank you.'

The RAF is not a paragon of problem-solving. Not every mistake or near miss is reported. Similar cases are not always dealt with in the same manner, which can undermine talk of a 'just culture'. Some officers remain sceptical about persuading pilots and engineers to accept the virtues of airing all their dirty laundry. Many of the *mea culpa* columns in *Air Clues* magazine are still published anonymously. 'Sorry' remains a hard word to say in the RAF.

Yet the change is paying off. In the first three years of the new regime, 210 near misses or errors were reported at RAF Coningsby. Of these, 73 triggered an investigation. In each one, steps were taken to make sure the mistake never happened again. 'Given that we never reported near misses before, that's a quantum shift, a big leap of faith in people,' says Brailsford. 'Instead of putting a plaster over problems, we're now going deeper and dealing with them at their root. We're nipping problems in the bud by stopping them before they even happen.' Other air forces, from Israel to Australia, have taken notice.

Adding the *mea culpa* to your problem-solving toolbox pays off beyond the military. Take ExxonMobil. After the epic *Exxon Valdez* oil spill off the coast of Alaska in 1989, the company set out to catch and investigate every screw-up, however small. It walked away from a large drilling project in the Gulf of Mexico because, unlike BP, it decided drilling there was too risky. Safety is now such a part of the corporate DNA that every buffet laid out for company events comes with signs warning not to consume the food after two hours. In its cafeterias, kitchen staff monitor the temperature of their salad dressings.

Every time an error occurs at an ExxonMobil facility, the first instinct of the company is to learn from it, rather than punish those involved. Staff talk about the 'gift' of the near miss. Glenn Murray, an employee for nearly three decades, was part of the *Valdez* clean-up. Today, as head of safety at the company, he believes no blunder is too small to ignore. 'Every near miss,' he says, 'has something to teach us if we just take the time to investigate it.'

Like the RAF and Toyota, ExxonMobil encourages even the most junior employee to speak up when something goes wrong. Not long ago a young engineer new to the company was uneasy about

a drilling project in West Africa – so he temporarily closed it down. 'He shut down a multi-million dollar project because he felt there were potential problems and we needed to pause and think it all through, and management backed him,' says Murray. 'We even had him stand up at an event and named him Employee of the Quarter.' By every yardstick, Exxon now has an enviable safety record in the oil industry.

Mistakes can also be a gift when dealing with consumers. Four out of every five products launched perish within the first year, and the best companies learn from their flops. The Newton MessagePad, the Pippin and the Macintosh Portable all bombed for Apple yet helped pave the way for winners like the iPad.

Even in the cut-throat world of brand management, where the slightest misstep can send customers stampeding for the exit and hobble the mightiest firm, owning up to mistakes can deliver a competitive edge. In 2009, with sales tanking in the United States, Domino's Pizza invited customers to deliver their verdict on its food. The feedback was stinging. 'Worst excuse for a pizza I've ever tasted,' said one member of the public. 'Totally devoid of flavour,' said another. Many customers compared the company's pizza crust to cardboard.

Rather than sulk, or sit on the results, Domino's issued a full-blown *mea culpa*. In documentary-style television commercials, Patrick Doyle, the company's CEO, admitted the chain had lost its way in the kitchen and promised to deliver better pizzas in the future. Domino's then went back to the drawing board, giving its pies a complete makeover with new dough, sauce and cheese.

Its Pizza Turnaround campaign worked a treat. Year-on-year sales surged 14.3 per cent, the biggest jump in the history of the fast-food industry. Two years after the apology the company's stock price was up 233 per cent. Of course, the new pizza recipes helped, but the starting-point was Domino's doing what RAF air crews and Exxon employees are now expected to do as a matter of course: acknowledging the error of its ways. This allowed the firm to learn exactly where it was going wrong so it could fix it. It also cleared the air. These days, so many companies trumpet 'new and improved' products that the net effect is a whirlwind of white noise that leaves consumers cold. The very act of owning up to its mistakes allowed Domino's to cut through the din and reboot its relationship with customers.

PR experts agree that the best way for a company to handle a mistake is to apologise and explain what it will do to put things right. This accords with my own experience. The other day a payment into my bank account went astray. After 20 minutes of evasion from the call centre, my voice began to rise as my blood reached boiling point. And then a manager came on the line and said: 'Mr Honoré, I'm very sorry. We made a mistake with this payment.' As she explained how the money would be retrieved, my fury drained away and we ended up bantering about the weather and our summer holidays.

Public apologies can have a similarly soothing effect. When a customer filmed a FedEx driver tossing a package containing a computer monitor over a six-foot fence in the run-up to Christmas 2011, the video went viral and threatened to annihilate sales during the busiest time of year. Rather than stonewall, though, the company apologised right away. In a blog post entitled 'Absolutely, Positively Unacceptable', FedEx's senior vice-president for US operations announced he was 'upset, embarrassed, and very sorry' for the episode. The company also gave the customer a new monitor and disciplined the driver. As a result, FedEx weathered the storm.

Even when we squander other people's money, owning up in order to learn from the error is often the best policy. In 2011, Engineers Without Borders (EWB) Canada set up a website called *AdmittingFailure.com*, where aid workers can post their mistakes as cautionary tales. 'Opening up like that is completely the opposite of the norm in the sector, so it was a huge risk,' says Ashley Good, Venture Leader at EWB. But it paid off. No longer afraid of being pilloried for messing up, EWB staff became more willing to take the sort of risks that are often the stepping stone to creative breakthroughs. 'People now feel they have the freedom to experiment, push themselves, take chances

because they know they won't be blamed if they don't get it right on the first try,' says Good. 'And when you push boundaries like that, you get more creative solutions to problems.' One example: after much trial and error, EWB has devised a system that improves water and sanitation services in Malawi by mobilising district governments, the private sector and communities all at the same time. Workers from across the development sector now post their own stories on *AdmittingFailure.com*. EWB's donors love the new regime, too. Instead of dashing for the exit, they welcomed the eagerness to learn from mistakes. Says Good: 'We've found that being open and honest actually builds a stronger bond and higher trust with our donors.'

The same holds true in personal relationships. A first step towards rebuilding bridges after falling out with a partner, friend, parent or child is for all parties to take their share of the blame. Admitting mistakes can ease the guilt and shame gnawing at the wrongdoer and help the victim overcome the anger that often stands in the way of forgiveness. Marianne Bertrand sees the magic of the *mea culpa* every week in her job as a family therapist in Paris. 'Many people sit in my office and cannot even begin to address their problems because they are stuck in the rage and resentment for what went wrong,' she says. 'But when they finally accept and apologise sincerely for their mistakes, and hear the other person doing the same, you can really feel the atmosphere in the room change, the tension subside, and then we can start working on reconciliation.'

Even doctors are warming to the *mea culpa*. Study after study shows that what many patients want after being the victim of a medical mistake is not a lump sum payment or the physician's head on a plate. What they really crave is what FedEx delivered in the wake of that package-tossing incident: a sincere apology, a full explanation of how the error occurred and a clear plan to ensure the same thing will not happen again. Among patients who file a suit for medical malpractice in the United States, nearly 40 per cent say they might not have done so had the attending physician explained and apologised for the mishap. The trouble is, many in the medical profession are too proud or too scared to say sorry.

Those that do so reap the benefits. In the late 1980s the Department of Veterans Affairs Medical Center in Lexington, Kentucky became the first hospital in the United States to tap the power of the *mea culpa*. It informs patients and their families when any member of staff makes a mistake that causes harm, even if the victims are unaware of the error. If the attending physician is found to be at fault, he or she must deliver a clear, compassionate apology to the patient. The hospital also explains the steps it will take to ensure that the error does not happen again, and may offer some form of restitution. But the cornerstone of the new regime is the simple act of saying sorry. This scores well with patients and their families. 'We believe we spend much less time and money on malpractice lawsuits these days as a result,' says Joseph Pellecchia, the hospital's Chief of Staff.

Apologising also helps deliver better healthcare. When medical workers can deal openly with the emotional fallout that comes from making a mistake, they are less stressed and more able to learn from their errors. 'Physicians are not gods, they are human beings, and that means they make mistakes,' says Pellecchia. 'There's been an incredible change here where we've gone from a punitive environment to a learning environment where a physician can ask, "What happened here?" "What went wrong?" "Was it a systems problem?" "Was it me?" – and learn from their mistakes to deliver better care.' Other hospitals around the world have followed suit. In the same vein, state and provincial governments across the US and Canada have enacted what are known as 'sorry laws', which bar litigants from using a physician's apology as proof of guilt. Everywhere the net effect is the same: happier doctors, happier patients and less litigation.

The truth is that any Slow Fix worthy of the name usually starts with a *mea culpa*. Whether at work or in relationships, most of us tend to drift along pretending that all is well – remember the status-quo bias and the legacy problem. Admitting there is a problem, and accepting our share of the blame, can jolt us out of that rut. In the Twelve-Step Programme invented by Alcoholic Anonymous

and now used in the battle against many other addictions, Step 1 is to admit you have lost control of your own behaviour. 'Hello, my name is Carl, and I am addicted to the quick fix.'

To overcome our natural aversion to admitting mistakes, especially in the workplace, removing the stick of punishment is often just the first step. It also helps to dangle a carrot to encourage or even reward us for owning up. Remember the Employee of the Quarter accolade bestowed on that young engineer at ExxonMobil. As well as Flight Safety Awards, the RAF pays a cash bonus to anyone who highlights an error that later saves the Air Force money. In the aid world, organisations can win Brilliant Failure Awards for sharing mistakes made in development projects. At SurePayroll, an online payroll company, staff nominate themselves for a Best New Mistakes competition. At a light-hearted annual meeting, they listen to tales of colleagues messing up and what everyone can learn from their blunders. Those who own up to the most useful mistakes win a cash prize.

Even in education, where botching a single question on an exam paper can torpedo your chances of attending a top-tier university, moves are afoot to reward students for embracing mistakes. Worried that its high-achieving pupils had lost their appetite for taking intellectual risks, a top London girls' school held a Failure Week in 2012. With the help of teachers and parents, and through assemblies, tutorials and other activities, students at Wimbledon High explored the benefits of being wrong. 'Successful people learn from failure, pick themselves up and move on,' says Heather Hanbury, the headmistress. 'Something going wrong may even have been the best thing that could have happened to them in the long run – in sparking creativity, for instance – even if it felt like a disaster at the time.' Failure Week has altered the atmosphere in the school. Instead of mollycoddling pupils, teachers feel more comfortable telling them point-blank when they have given a wrong answer, thus making it easier to search for a better one. The girls are taking greater risks, too, pursuing more daring lines of inquiry in the classroom and entering creative writing competitions in larger numbers. Members of the school debating club are deploying more adventurous arguments and winning more competitions. 'Maybe the most important thing the Week gave us is a language to talk about failure as something not to avoid but as an essential part of learning, improving and solving problems,' says Hanbury. 'If one girl is upset by a poor mark, another might now make a friendly joke about it or say something like, "OK, you failed, but what can you learn from it?"'

Most workplaces are in dire need of a similar cultural shift. Think of all the lessons that go unlearned, all the problems left to fester, all the bad feelings churned up, all the time, energy and money wasted, thanks to the human instinct to cover up mistakes. Now think of how much more efficient – not to mention agreeable – your workplace would be if every error could be a spur to working smarter. Instead of muddling along, you could revolutionise your office or factory from the bottom up.

There are steps we can all take to harness the *mea culpa* and learn from our mistakes. Schedule a daily Clinton moment when you say, 'I was wrong' – and then find out why. When you mess up at work, pinpoint one or two lessons to be gleaned from the mishap and then quickly own up. When others mess up, quell the temptation to scoff or gloat and instead help them to spot the silver lining. Start a conversation in your company, school or family about how admitting mistakes can inspire creative leaps. Reinforce that message by using feel-good terms such as 'gift' or 'bonus' to describe the uncovering of helpful errors and by pinning up quotes such as this from Henry T. Ford: 'Failure is simply the opportunity to begin again, this time more intelligently.'

It also helps to create a shared space, such as a web forum or a suggestions book, for airing mistakes. Borrowing an idea from Toyota, Patounas has put up a Communications Board in his squadron headquarters where any crew member can call attention to a problem – and every case is promptly investigated and addressed. 'It's very popular already and you see the engineers and pilots gathered round it,' says Patounas. 'It's tangible and something you can put your arms round.'

It certainly helps to know that our errors seldom look as bad to others as we imagine. We have a natural tendency to overestimate how much people notice or care about our gaffes. Psychologists

call this the 'spotlight effect'. You may feel mortified to discover you attended a big meeting with laddered tights or egg on your tie, but the chances are hardly anyone else noticed. In one study at Cornell University, students were asked to walk into a room wearing a Barry Manilow T-shirt, a social kiss of death for any self-respecting hipster. While the subjects nearly died of embarrassment, only 23 per cent of the people in the room even clocked the cheesy crooner.

If owning up to a mistake is seldom as bad as we fear, however, it is only the first step towards a Slow Fix. The next is taking the time to work out exactly how and why we erred in the first place.

CHAPTER THREE
THINK HARD: Reculer Pour Mieux Sauter

Don't just do something, stand there.

White Rabbit in *Alice in Wonderland* (Disney version)

If asked to design an office that could make staff look forward to Monday morning, you might come up with something like the headquarters of Norsafe. Every window looks onto a snapshot of bucolic bliss. Clapboard houses nestle in the forest, small boats bob alongside wooden piers, gulls float across a clear sky. In the late morning, the sunshine turns this narrow waterway in southern Norway into a strip of shimmering silver.

For many years the company's balance sheet looked similarly idyllic. Norsafe has been building boats since 1903 in a country where boating is a serious business. With more coastline than the United States, this long, slender nation on the northern edge of Europe has always looked to the sea. Even today, one in seven Norwegians owns some sort of watercraft. But looks can be deceiving. Not so long ago Norsafe was a firm on the verge of a nervous breakdown, where nobody looked forward to coming in to work on Monday morning.

The company manufactures highly specialised lifeboats for oil rigs and supertankers. Enclosed like a submarine, and painted a vivid, regulation orange, they can drop into the sea, with a full load of passengers, from a height of nearly 40 metres. In the mid-2000s, as the global economy boomed, orders flooded in from around the world, tripling Norsafe's turnover. Yet behind the top line numbers, the firm, like Toyota, had lost control of its inner workings and was struggling to keep up. Deadlines slipped, design faults passed unnoticed through the production plant, customer complaints went unanswered. With lawsuits piling up and profits plunging, the design, manufacturing and sales teams were at each other's throats. Everyone knew there was a problem, but no one knew how to fix it.

The turning point came in 2009, when an organisational consultant named Geir Berthelsen delivered a pitch at the Norsafe headquarters. With his shaven head and watchful eyes, the 48-year-old Norwegian exudes the calm of a Zen monk. Since the early 1990s his consultancy firm, Magma, has been mending broken companies around the world with his version of the Slow Fix. Whatever the country or industry, the first step in his recovery plan is always the same: take time to work out the real reason things are going wrong. 'Most companies are in a hurry, so they just firefight with quick fixes that only address the symptoms instead of the problem itself,' he says. 'To identify what is really going wrong, you first have to get a full picture of a company in slow motion, you have to do like Toyota and ask why, why and why, you have to slow down long enough to analyse and understand.'

That is a neat summary of the next ingredient of the Slow Fix: taking the time to think hard about the problem to arrive at the right diagnosis. When asked what he would do if given one hour to save the world, Albert Einstein answered: 'I would spend fifty-five minutes defining the problem and only five minutes finding the solution.' Most of us do the exact opposite. Think of your last visit to the GP. Chances are the appointment lasted no more than a few minutes and you struggled to say everything you wanted to. One study found that doctors let patients explain their complaint for 23 seconds before interrupting. Is it any wonder so many illnesses are misdiagnosed?

By the same token, you seldom uncover the real reason an organisation is failing by reading an email, convening a meeting or skimming the annual report. When things go wrong, as we saw earlier, people usually shift blame and shy away from saying anything that might cause them to lose face or hurt their colleagues' feelings. In a world that prizes action over reflection, and when the clock is ticking, it takes nerve to spend 55 minutes thinking. Yet, from business to medicine to everything in between, a little inaction can be just what the doctor ordered. Some problems are no more than a bit of passing turbulence, or a red herring. Others will find their own solution if left alone. But even for

problems needing intervention, inaction combined with deep thought and shrewd observation can be the first step to a smart fix. That is why doctors treating unusual conditions will often spend days, weeks, even months running tests, watching how the symptoms evolve, ordering more analysis, before finally arriving at a diagnosis and starting treatment. 'To do nothing at all is the most difficult thing in the world,' said Oscar Wilde, 'the most difficult and the most intellectual.'

That is why the Magma consultancy firm spends a long time in the trenches, working alongside employees, watching, listening, learning, gaining trust, reading between the lines. 'We always start at the bottom, on the factory floor or wherever the work is done, and live there as long as it takes to understand everything about how all the systems operate and how all the people act within those systems,' says Berthelsen. 'We have to discover the right questions before we can figure out the right answers. Only then can we really fix things.'

After a lengthy tour of duty, the Magma team pinpointed why Norsafe was floundering: it had become a big company that still operated like a small one. As orders had grown more complex, staff had stopped paying attention to the details – a fatal mistake when the most sophisticated lifeboats contain 1,500 parts and are subject to a thicket of rules and regulations. The designers would churn out drawings with scant regard for budgets or the laws of physics. The sales team would green-light jobs without fully understanding the small print. Housed in a separate building beside the headquarters, the manufacturing side of the business scrambled to make ends meet. As recriminations flew, the company degenerated into a rabble of rival fiefdoms. 'We used to struggle to get Sales to show us their upcoming orders or to get any information out of them at all, and no one could break the peaceful silence of the Design people over in their own corner,' says Geir Skaala, the owner and CEO. 'I used to feel like I was the only one in the Head Office who took any interest in what was going on in Production.'

After doing its homework, Magma devised a system that would allow Norsafe to operate like a big company. The first step was to set aside more time for vetting contracts. The sales team now goes through every order with a fine-toothed comb, and Skaala reads every contract himself, marking points he disagrees with in red and those that need clarifying in yellow. Each design drawing now comes with a complete list of all the relevant specifications. Everyone's role in the business has been clearly defined, with staff keeping regular action logs.

Magma also started breaking down the barriers between departments. Employees from design, sales and production now meet regularly, with their phones switched off, to talk about contracts, new plans and what is happening in the factory. Like crews at RAF Coningsby and staff at ExxonMobil, everyone is urged to report even the smallest problems and propose solutions. To reinforce the new spirit of openness, Skaala started eating lunch in the canteen rather than alone in his office.

This Slow Fix did not happen overnight, or without pain. It involved months of explaining, hand-holding and retraining. Egos were bruised and friendships tested. Though dismayed by the status quo, many employees found it hard to embrace the new way of working. 'They felt, "This is how I do it, how my father did it, how my grandfather did it, why should I change?"' says Skaala. 'It wasn't ill will; it's just that it's easier to carry on as before.' The status-quo bias, in other words. But eventually most Norsafe employees embraced the new regime, and the two who did not left.

Staff seem pleased with the change. Hans Petter Hermansen has been the production manager at Norsafe for more than 20 years. With his deep tan, white hair and piercing blue eyes, he looks like a cross between Giorgio Armani and the hero of Hemingway's *The Old Man and the Sea*. 'Magma have taught us to complain, even to stop production, if something is wrong in an order instead of just trying to make it work,' he says. 'Now we all talk and work together as a team, which means we actually do things right the first time, which is way more efficient than fixing mistakes farther down the line.'

This Slow Fix still has a long way to go. A revolution that began in the sales and contracts department is now wending its way through the rest of the company. Rolling out the changes to operations in China and Greece will take longer. Even at the headquarters in Norway, the new system

is still bedding in. The day I visit, Norsafe is testing a prototype lifeboat. Several nervous designers are standing on a dock watching the vessel being scuttled in a controlled experiment. Once it starts taking on water, it fails to right itself within the three minutes stipulated by international law. The designers look perplexed, but Hermansen smiles wryly. 'They're scratching their heads, but I told them they needed four centimetres more foam in the sides of the canopy,' he mutters. 'It shows that even with the right processes in the company, people don't always listen to you.'

Even so, Norsafe seems to have turned a corner. Contracts are cycling smoothly through the company, lifeboats are arriving on time and in good condition, and profits are up. No more lawsuits are pending and the gloom in the office has lifted. In 2011, the leading financial newspaper in Norway published an article describing Norsafe as a 'money-making machine'. Skaala is over the moon. 'Everything is working now and it's actually fun coming to the office again,' he says. 'It's not rocket science. It's not hocus-pocus. It's not hard to understand. We just needed to slow down and think hard about exactly what was going wrong with our company before we could fix it.'

Others do the same deep, slow thinking without consultants. In the late 1980s, Patagonia, the California-based maker of smart, eco-friendly outdoor gear, grew so fast that it stopped training new managers properly and lost control of its ballooning network of product divisions and distribution channels. In response, Yvon Chouinard, the founder and owner, went into quick-fix mode, restructuring the company five times in five years. 'I was driving everyone crazy by constantly trying new ideas without a clear direction for where we were trying to go,' he wrote later. To find that direction, Chouinard eventually pulled the Andon rope. In 1991 he took a dozen of his top managers to southern Argentina for a walkabout in the real Patagonia. Like biblical prophets seeking truth in the desert, the company brass spent two weeks rambling through the harsh, windy landscape, chewing over the Big Question: what sort of company do we want to build? They returned from Argentina with a bundle of ideas that eventually crystallised into a mission statement: 'Make the best product, cause no unnecessary harm, and use business to inspire and implement solutions to the environmental crisis.' To embed that creed in the chain of command, Chouinard took lower-level managers on week-long retreats in US national parks. Having taken the time to answer the Big Question, Patagonia was finally able to put its house in order, cutting out superfluous layers of management, streamlining inventories and taming its sales channels. Today the company racks up annual sales over $540 million while continuing the policy it started in 1985 of donating 1 per cent of those sales to environmental causes.

Businesses aren't the only ones to benefit from thinking hard about problems. Under its new safety regime, the RAF uses psychologists to drill down through the so-called 'human factors' that play a part in every accident. 'Each piece of the puzzle has a story, and behind that story is another story and another – whether it's a man who left home early in the morning because he was out late last night, had an argument with his wife or partner, or got to work and the books he was meant to reference weren't there,' says Group Captain Brailsford. 'We're talking about pulling the Andon rope to get to the very bottom of each problem. It means we take longer to think before acting, but when we do act we are able to apply the right solutions to the right problems.'

The same goes for matters of the heart. To mend a broken relationship, you must take time to work out what is really going wrong before seeking the right fix. When counselling couples in Toronto, Dave Perry places a small, ceramic tortoise on the table between him and his clients. 'It's just a little visual reminder that you need to take the slow and patient approach to get to the heart of the matter,' he says. 'At first, people struggle with it because they want a quick fix, but once they feel they have permission to slow down, it comes as a huge relief.'

Taking time to identify and frame the problem is very much the *modus operandi* of IDEO, a global design firm famous for the deep, probing research it does before prescribing a fix. When the Memorial Hospital and Health System of South Bend, Indiana, asked for help in making plans for its new Heart and Vascular centre, the IDEO staffers spent weeks on the wards, observing, listening, asking questions. They interviewed and ran workshops with patients, families, doctors,

nurses, administrators, technicians and volunteers. They even recreated the experience of arriving at the hospital for everything from a simple consultation to open-heart surgery from the point of view of the patient and family members. Many of their suggestions went into the final design of the new wing. 'Instead of just investigating people's needs by asking directly, "What would you like?" we take a more meditative, experiential approach that involves immersion and percolation,' says Jane Fulton Suri, Managing Partner and Creative Director of IDEO. 'When you spend more time getting deeply familiar with a problem, that creates space for new and surprising insights.'

It can even lead to a complete recasting of the original problem. If a client requests a new, improved toaster, IDEO might flip the question round to ask: is there a better way to make toast? Or how could breakfast be different? IDEO took a similar tack when helping Apple develop its revolutionary computer mouse in 1980. 'Right from the start we ask, "What is the real problem we need to address?" says Fulton Suri. 'There is always a danger that the solution is already embedded in the way we frame our original problem. If we take the time to reframe it, we can open up alternative, and often better, ways to address the real need.'

That principle is even paying off in the staid world of traffic management. When accidents occur persistently along a stretch of road, the traditional fix is to tweak the street furniture – install new lights or speed bumps, say, or put up signs urging caution. Why? Because the more guidance you give motorists, the better they drive.

Or do they? After years of watching this golden rule fail to deliver safer roads, some engineers began to wonder if they were posing the wrong question. Instead of asking what can we *add* to our roads to make them safer, they began asking, in the counter-intuitive style of IDEO, what would a safer road look like? What they discovered astonished them. It turns out conventional wisdom about traffic is wrong. Often, the *less* you tell motorists how to behave, the *more* safely they drive. Think about it. Most accidents occur near school gates and crosswalks or around bus and cycle lanes, which all tend to be regulated by a dense forest of signs, lights and road markings. That is because the barrage of instructions can distract drivers. It can also lull them into a false sense of security, making them more likely to race through without paying attention.

Minimise the lights, the signage, the visual cues, and motorists must think for themselves. They have to make eye contact with pedestrians and cyclists, negotiate their passage through the cityscape, plan their next move. Result: traffic flows more freely and safely. Ripping out the signage along Kensington High Street, one of the busiest shopping strips in London, helped slash the accident rate by 47 per cent.

There are also neurological reasons for taking the time to think slowly and deeply about a problem. Deadlines have a role to play in finding solutions, but racing the clock can lead to sloppy, superficial thinking. Teresa Amabile, professor and Director of Research at the Harvard Business School, has spent the last 30 years studying creativity in the workplace. Her research points to a sobering conclusion: rushing makes us less creative. 'Although moderate levels of time pressure don't harm creativity, extreme time pressure can stifle creativity because people can't deeply engage with the problem,' says Amabile. 'Creativity usually requires an incubation period; people need time to soak in a problem and let the ideas bubble up.'

We all know this from experience. Our best ideas, those eureka moments that turn everything upside down, seldom come when we're stuck in fast-forward, juggling emails, straining to make our voices heard in a high-stress meeting, rushing to deliver a piece of work to an impatient boss. They come when we're walking the dog, soaking in the bath or swinging in a hammock. When we are calm, unhurried and free from stress and distractions, the brain slips into a richer, more nuanced mode of thought. Some call this Slow Thinking, and the best minds have always understood its power. Milan Kundera talked about 'the wisdom of slowness'. Arthur Conan Doyle described Sherlock Holmes entering a quasi-meditative state, 'with a dreamy vacant expression in his eyes', when weighing up the evidence from crime scenes. Charles Darwin called himself a 'slow thinker'.

Slowing down to ponder even makes sense when circumstances do not allow for weeks of patient observation or long, meditative walks in Patagonia. Statistically, police officers become involved in fewer shootings, arrests and assaults working alone than they do with a partner. Why? Because the lone cop is more cautious and circumspect, more likely to take a moment to weigh the options before acting. A slight pause can even make us more ethical. Researchers at Johns Hopkins University have shown that, when faced with a clear choice between right and wrong, we are five times more likely to do the right thing if given time to think about it. Other research suggests that just two minutes of reasoned reflection can help us look beyond our biases to accept the merits of a rational argument.

To make space for rich, creative mulling, we need to demolish the taboo against slowness that runs so deep in 21st-century culture. We need to accept that decelerating judiciously, at the right moments, can make us smarter. When tackling a problem in groups, that means paying less attention to the fast thinkers who hog the stage and more to the shrinking violets who sit back and ponder. Tim Perkins, a coach at Odyssey of the Mind, sees this all the time. 'Last year, we had one kid who sat so silently through the brainstorming sessions you could almost forget she was there,' he says. 'But she was actually taking time to process what was being said, and then 10 or 15 minutes later she would speak up. Often the team ended up taking her solution to the problem.'

We can all take steps to think harder. Even when nothing needs fixing, build time into your schedule to unplug from technology and let your mind wander. When tackling a new problem, make it a rule to sleep on it for at least one night before proposing any solutions. Ask why, why and why until you uncover the root cause. Keep an object on your desk – a piece of sculpture, a wooden snail, a photo of your favourite holiday spot – that reminds you to slow down and think before you act. Above all, test your solutions again and again, no matter how foolproof they seem.

Betting the farm on a quick fix that shows early promise is an easy mistake to make, even when we design systems to stop it from happening. The investigators at RAF Coningsby, freshly trained in the art of parsing 'human factors' and homing in on the root causes of problems, have fallen into the trap. Not long ago, during routine maintenance work, an engineer opened the undercarriage door of a Typhoon jet. It slammed down onto a heavy jack standing beneath it, ripping open a gash that looked like it could have been caused by enemy fire. In the past, the young corporal would have been punished and probably ridiculed by his peers. He might even have tampered with the evidence to deflect blame. Either way, his crew would have replaced the door without really probing why the accident occurred in the first place.

Under the new regime, the engineer filed a report on the spot, triggering a full investigation. Group Captain Simpson's team quickly found that the safety pin that would have prevented the undercarriage door from lowering at the fateful moment was missing. So far, so good. Further digging then unearthed a startling oversight: though the safety pins are plainly listed in all the Typhoon manuals, three out of the four RAF squadrons had never even fitted them.

Simpson was stunned. 'Everyone's following the list. Everyone's trained in accordance with the list. Everyone can see the pictures of the pin in place. And still no one had noticed that we'd never even bought any of these pins,' she says. It felt like a home-run endorsement of the new safety regime. The RAF bought a load of safety pins and then closed the file on the Case of the Damaged Undercarriage Door.

'Everyone said, "Crikey, isn't this new system brilliant? We would never have picked this up before,"' says Simpson. 'We thought, "That's all sorted now, problem solved."' Only it wasn't. A few weeks later another Typhoon door was wrecked in an almost identical accident.

The safety pin was a red herring. When investigators took the time to think harder and dig deeper, they found a host of other factors leading to the mishap with the door: engineers distracted by changing shifts; poor lighting in the hangar; an illustration in the instruction manual suggesting the wrong angle for the jack.

‘We were so pleased to find the safety pin, which seemed like such an obvious answer to the problem, that we were completely blinded by it and just stopped looking for other causes,’ says Simpson, wincing slightly at the memory. ‘But the upside is we learned a very valuable lesson from this: just because you find one factor that seems to offer an almost perfect solution, you don’t stop. You have to carry on investigating, digging, asking questions until you have the full picture of what happened and how to fix it properly.’

In other words, if your first fix seems too good to be true, it probably is.

When I ask Simpson if all that hard thinking ever leads to a moment of perfect clarity, she falls silent for a few seconds before answering. ‘You do reach a point when you know what has to be done, but it’s rarely as simple as firing a magic bullet,’ she says. ‘There are always multiple factors you have to connect up.’

CHAPTER FOUR
THINK HOLISTIC: Joining the Dots

All is connected … no one thing can change by itself.

Paul Hawken, environmentalist

They call it the ghetto limp. You've seen it in episodes of *The Wire*, in a million hip-hop videos, maybe even on the streets of your own city. It's that lolloping, loping gait favoured by young men in tough neighbourhoods. It hints at an old gunshot wound, or at packing heat somewhere in those baggy trousers. It's a gang thing, an affectation of the street, another pose designed to send the same message to everyone around: 'Don't mess with me because I am one mean motherfucker.'

When I meet Lewis Price, he is working the ghetto limp like a pro. Hair pulled back in cornrows; trousers on the baggy side; black and red Air Jordans ostentatiously untied; MOB (Money over Bitches) tattooed on his wrist. At 17, he is compact and muscled, with the coiled energy of an athlete on the starting line, or a cat waiting to pounce.

When Price starts talking, however, you realise he is not a mean motherfucker at all. His easy smile and gentle manner belie his appearance. He loves to talk and grabs hold of any conversation, eyes darting round the room as if searching for the next reason to laugh. Unlike many youths caught up in the gang violence that blights South Central Los Angeles, he is not feigning the limp for effect. When he was 14, a rival gang member took a pot-shot at him while he was hanging out on the sidewalk. The bullet sliced through his right leg and wedged so deeply in his left that doctors chose to leave it there. He can no longer play football or basketball and the limp now draws the wrong sort of attention on the street. 'People think I'm walking like that on purpose, that I'm walking like a gangbanger to make a statement or something,' he says. 'But that's the only way I can walk after I got shot. You know, the way I see it, I'm lucky I can walk at all.'

Price tends to look on the bright side these days. He has turned his back on the street, earned a place on the honour roll and plans to go to university – no mean feat for a kid born and raised in Watts.

This corner of Los Angeles has long been on the front line of black struggle. In 1965 the Watts Riots turned 50 square miles of the city into a war zone of charred buildings and pitched battles with the National Guard. Later, the gangs took hold, with the storied Bloods and Crips carving out violent fiefdoms. Over the last decade Latinos have moved in *en masse*, yet Watts remains plagued by the same old list of urban despair: poverty, crime, failing schools, ill health, unemployment, broken homes, drugs, teenage pregnancy, malnutrition, deadbeat dads, domestic violence. With gang members numbering in the thousands, fistfights, stabbings and shootings like the one that crippled Price are a part of life. Not many kids from Watts make it to college.

Price is not the first gangbanger to turn over a new leaf. But instead of crediting church, family or a heroic social worker, he puts his conversion down to his alma mater. To the delight, and surprise, of many Watts residents, the local high school now known as Ánimo Locke has gone from basket case to beacon of hope.

'If it weren't for Locke I wouldn't be the person I am today,' says Price. 'Before I came here, I felt like, man, the only way I'm gonna make it is just survive on the street, but I got here and they just woke me up.' He falls silent for a moment, as if pondering the road not taken, before adding, 'If it weren't for Locke, I'd be like all my old friends, I'd be dead or in jail. But now, you know, I got a future. I'm a good student now and I'm gonna make it somewhere.'

Many countries continue to grapple with how to break the cycle of poor children stumbling through lousy schools *en route* to a life at the bottom of the barrel. The problem is especially acute in the US, where 10 per cent of the nation's high schools, most of them in tough, urban neighbourhoods, produce nearly half its drop-outs. One solution is to build new and better academies in the same

areas. This is the approach taken by the non-profit Charter Management Organisations (CMOs), which have used public money to open and manage hundreds of free schools across the US since the 1990s. The Obama administration took a different tack, sending in star principals with the money and the mandate to rebuild failing schools from the ground up. The two strategies have delivered mixed results. Locke stands out because it blends both approaches to good effect.

In 2007 the Los Angeles Unified School District invited a CMO called Green Dot to engineer a turnaround at Locke. It was the first time a US charter group agreed to take on a failing school, and Locke was failing on a grand scale. Opened in 1967 as a symbol of renewal after the Watts Riots, the school was named after Alain Leroy Locke, the first African-American to win a Rhodes Scholarship to study at Oxford University. But over the years, as jobs and middle-class families drained out of the neighbourhood, the school's fortunes drained away with them. By the time Green Dot stepped in, Locke, which sprawls over six city blocks and houses 3,100 students, was the sort of drop-out factory you see in the movies: buildings riddled with graffiti, smashed windows and broken lights; paint peeling off the walls in every classroom; litter blowing like tumbleweed across the scruffy campus; cars parked all over the place, even on the handball courts.

Students routinely missed class to wander the halls or sit outside in large groups shooting dice or smoking weed. They set fires inside the school and held parties on the roof. Gang members sold drugs outside the gymnasium. Campus security guards spent most of their time breaking up fights and keeping rival gangs apart. Several pupils were shot in front of the school's gates.

Some teachers toiled heroically to give proper instruction to the few students willing or able to receive it, but the tide was against them. Many just gave up. Staff screened movies so often that parents dubbed Locke the 'ghetto cineplex'. Many read newspapers or novels in class while the children horsed around and played cards. Even the Life Skills teacher turned up to class drunk. Locke hit rock bottom in 2007, when the city sent in helicopters and riot police to break up a brawl involving hundreds of students. But while the shootings, rapes and beatings grabbed headlines, the most damning statistic of all was this: of the 1,451 children who started ninth grade in 2004, less than 6 per cent graduated four years later with enough credentials to apply to a California state university.

It is not as if officialdom gave up on Locke. On the contrary, the city hurled initiative after initiative at the school: a new attendance policy here, a fresh reading programme there, a revamped code of discipline some time after that, and so on. The trouble was, the authorities never took the time to look at the big picture. Instead, they churned through one-off initiatives as I churned through cures for back pain. Stephen Minix, the director of athletics, had a front-row seat on this kaleidoscope of quick fixes. 'Year after year, we had people in suits and ties showing up and sprinkling some of this or some of that on the school, and saying "This'll fix it," and then just walking away,' he says. 'They were always sweeping policies handed down by District with no thought for what they would really mean for Locke, so they never made a dent. They were just band-aid solutions to much deeper problems.'

Green Dot therefore faced a lot of scepticism from the start. Teachers at Locke, including Minix, suspected the newcomers of being just another band of quick-fix merchants. Many Watts residents distrusted the smooth-talking outsiders. As one parent puts it: 'For a lot of people, it was like "Here come these white folks, these pilgrims, putting up their tents, their fences, and they're promising to fix our school and our kids but we don't have no say in it, and when it don't work out they'll ride off into the sunset and leave us with an even bigger mess than before."'

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