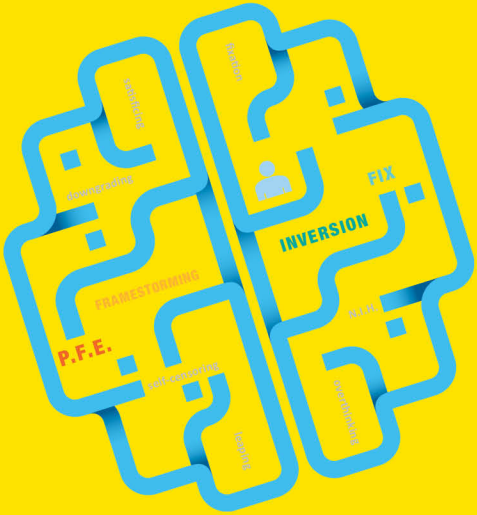
# Winning the Brain Game

## FIXING THE 7 FATAL FLAWS OF THINKING




**MATTHEW E. MAY**

Author of *The Elegant Solution* and *The Laws of Subtraction*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PRAISE FOR

# Winning the Brain Game

*"In an era where entire industries are being disrupted and rapid, agile experimentation are becoming mainstream, the question in every leader's mind is 'which side of the equation will I occupy?' In reading* Winning The Brain Game*, the reader quickly recognizes that the only limitations to ability to be on the winning side are in our own mindsets and approaches. Matthew May's identification of the seven fatal thinking flaws, and the pragmatic application of field-tested fixes are actionable, and this book should be a must-read for any innovator, business leader or problem-solver."*

—**BRAD SMITH,** Chairman and CEO, Intuit

*"What worked then may very likely not work now. In* Winning the Brain Game*, Matthew May deftly explores entirely new ways of thinking and mines the findings of neuroscience to create practical applications that will transform how you solve problems. This book is the best defense against the pitfalls of traditional thinking. A true breakthrough!"*

—**MARSHALL GOLDSMITH,** Thinkers50 #1 leadership thinker and *New York Times* bestselling author, *What Got You Here Won't Get You There* and *Triggers*

*"This book is a gem! Matthew May has given us a practical research-backed (and downright fun!) guide to creative problem solving."*

—**NIR EYAL,** author of *Hooked: How to Build Habit-Forming Products*

*"In* Winning the Brain Game*, Matthew May has brilliantly coalesced remarkable work from leading scientists and psychologists with his decades' experience in design thinking to produce an exhilarating rethink of conceptual problem solving. I recommend designers and marketers—student and professional—read and make use of this compelling book. Personally speaking, I wish I'd come across this book thirty years ago; my hair would likely not be so gray."*

—**LINDON LEADER,** creator of the FedEx logo

*"Matthew May is like a Mr. Miyagi for untapped creative brain potential. The good news here is that we can switch a few levers to better unlock our own inner creative Karate Kid—and, the principles are backed by science."*

—**PETER SIMS,** founder/CEO/chief whip, Parliament, Inc. and author, *Little Bets: How Breakthrough Ideas Emerge from Small Discoveries*

*"This is the book I wish I wrote! Smart. Insightful. Practical. It powerfully shows why we are our own worst enemy!"*

—**STEPHEN SHAPIRO,** author, *Best Practices are Stupid*

*"Do you want to tune up your creative thinking process?* Winning the Brain Game *is more than a book—it's a tool chest full of supremely useful tips and techniques. Using them will boost your ability to ship elegant, remarkable solutions."*

—**DIEGO RODRIGUEZ,** partner, IDEO and creator of Metacool

*"In this elegant book, Matthew May teaches us how to avoid seven fundamental thinking flaws that keep us from thinking clearly. From the factories of Toyota to the bomb technicians of the LAPD, May shows us how we can use the insights of science to help us solve our hardest problems."*

—**SHLOMO BENARTZI,** professor, UCLA Anderson School of Management and author, *The Smarter Screen*

*"Witty, incisive, and inventive. A refreshing view of creativity in action. You will never think of problems in the same way."*

—**TOMAS CHAMORRO-PREMUZIC**, CEO of Hogan Assessments, Professor of Business Psychology at University College London and Columbia University and author, *Confidence*

*"Matthew May's book reminds me of Irma Rombauer's beloved Joy of Cooking book—but instead of recipes for meals, May provides recipes for re-thinking. A broad range of creative thinking styles are presented—with all pitfalls and plusses clearly highlighted, so that you might just get 'dinner' made and ready in time for a deadline."*

—**JOHN MAEDA,** partner, Kleiner Perkins Caufield & Byers

*"Every politician on the planet needs to read this book, immediately."*

—**GUY KAWASAKI,** Chief Evangelist, Canva and author, *The Art of Social Media*

*"*Winning the Brain Game *reveals the invisible barriers that get in the way of problem-solving. Better yet, it delivers practical ways to jump start an entirely new approach to tackling your biggest challenges. Don't just read this book. Use it as your go-to tool to take things to the next level."*

—**SOREN KAPLAN,** affiliated professor, USC Center for Effective Organizations and author, *Leapfrogging*

*"Innovators think differently. In* Winning the Brain Game*, Matthew May outlines the seven ways you're not thinking differently enough . . . and how to think like an innovator."*

—**DAVID BURKUS,** author, *Under New Management* and *The Myths of Creativity*

*"Huge kudos to Matt May for giving us these easy-to-grasp, ready-to-use fixes for the screw-ups most of us make in trying to use our brains intelligently to solve the vexing problems of our lives at work and beyond."*

—**STEW FRIEDMAN,** author of *Leading the Life You Want* and *Total Leadership*

*"*Winning the Brain Game *contains an actionable set of thinking tools that will help you and your teams more effectively solve complex problems. Give them a try!"*

—**DAVID SHERWIN,** Sr. Manager of User Experience, LinkedIn and author, *Creative Workshop: 80 Challenges to Sharpen Your Design Skills*

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# A MANTRA

*What appears to be the problem, isn't.*
*What appears to be the solution, isn't.*
*What appears to be impossible, isn't.*
**—THE ELEGANT SOLUTION**

# ACKNOWLEDGMENTS

This book almost wasn't. Undoubtedly due to one or more flaws in my thinking, I had somehow convinced myself that most of the world no longer had the time or interest in reading books, and that the volume of noise in the form of information was already so overwhelming to most people that another book would only speed the saturation level. It was self-censorsing at its finest, and it took a good bit of poking and prodding from my wise advocate and agent John Willig to convince me I was wrong, and to give it another go. He had help from Knox Huston, my terrific editor from McGraw-Hill. I am grateful to them both for getting me to practice what I preach, to look at things from another perspective, and to produce an elegant solution. I am really proud of this little book, and I think it may indeed be my best work. For the first time in a decade of authorship, I have a book that has broad appeal and universal applicability, regardless of one's walk in life. That's cool. Thank you, gentlemen.

As to the content of the book itself, I have several thinking partners I would like to thank, not simply for lending me their expertise and advice in the production of this book, but for their counsel and mentorship over the past several years. I am quite fortunate to have as distant colleagues some of the world's most noteworthy thought leaders, including those whose wisdom figures centrally in *Winning the Brain Game*.

For helping me distill and decode matters of neuroscience and the clear distinction between the mind and the

brain, I have Dr. Jeffrey Schwartz to thank. Jeff is a master at helping people unlock their brains, and has been a colleague and advisor to me for many years.

For helping me understand the nuances of revealing hidden assumptions and teaching me techniques to engage what he refers to as "the opposable mind," I have the brilliant Roger Martin, dean emeritus of The Rotman School and Thinkers50 leader, to thank. For well over a half decade, Roger has been a mentor and collaborator.

On matters of professional curiosity, constant experimentation, and serious play, I have the relentless provocateur Michael Schrage of MIT to thank. Just when you think you know something, Michael has the uncanny ability to inject the very question that lets you know you don't.

Finally, I wish to thank the ever mindful Ellen Langer for graciously spending a bit of her time with me and sharing a story that I had not heard or seen written before.

If you enjoy *Winning the Brain Game*, it is because I had these individuals to help me bring it to life.

PREFACE

# Mind Over Matter

*You have to learn the rules of the game. And then you have to play better than anyone else.*

—**ALBERT EINSTEIN**

What would you do if someone handed you a difficult problem to solve right now? Would you don your thinking cap, look up to the right, touch your chin, knit your brow, shrug your shoulders, then throw your hands up in the air after a few minutes, declaring the problem to be impossible to solve? Would you search your memory banks for how you or someone solved a similar problem in the past and, coming up empty-handed, search Google to see if and how others might have solved it? Would you immediately and instinctively launch into a concerted effort to brainstorm top-of-mind solutions in a shotgun fashion, hoping that some mental spaghetti might stick to the wall? Would you smile, surrender, confess to having no clue, ask for the solution, then upon hearing it, slap your forehead and cry, "Of course! Why didn't I think of that?" Would you experience a sudden creative insight, see the solution immediately, but then second-guess yourself, unconsciously judging your solution to be too simplistic and too obvious to be a good one, and voluntarily kill a great idea?

Hard for me to say, because I don't know you. But the odds of you doing something very similar are very good. In fact, you will probably do it sometime today. Meanwhile, that nasty problem goes unsolved.

But it doesn't have to be that way.

I intended this book to be a mindful guide—complete with a super-curated set of battle-tested tools—for using our minds to win the games our brains are hardwired to play on us, the patterns of tricks that while effective in handling routine problems and quick-fix situations, become traps when we need to invoke our best thinking. This struggle of mind over matter *is* the brain game. (See what I did there? I made a distinction between the mind and the brain. Keep that in mind as you read on.)

I stumbled on these patterns over 10 years ago in my role as a professional facilitator, working with Toyota's U.S.-based corporate university. We were using a few different thought challenges, based on real business stories, as icebreakers for a course called Principled Problem-Solving. We were surprised first by how many people failed to solve the challenges, second by the redundancy in the solutions offered up, and third, but most importantly, by the repetitive nature of thinking and behavior patterns.

I left my gig with Toyota after spending eight years with them, but kept using similar, real-world thought challenges in workshops, seminars, and speaking engagements all over the world. No matter where I went or to whom I gave the problems, the results were eerily similar. Over 100,000 people have now gone through these exercises with me, and in spite of all that has been discovered and written about the brain and the mind during the past three decades, I continue

to observe these patterns. The evidence I've collected is overwhelming, and points to seven readily observable behaviors, which I call fatal flaws of thinking . . . mental glitches, if you will, that if left unchecked may just leave us wondering why our deepest problems never get solved.

I confess that I never set out to conduct a long-term study, for I am neither scientist nor scholar. I'm far better at applying all those wonderful scientific discoveries and putting into practice what scholars propose in theoretical frameworks, to see whether what they say *should* work actually *does* in the real world. In that way, I'm much more like the jeweler seeking to fix a stuck gear in a wristwatch than the philosopher pontificating on a theory of time.

When it comes to the frontiers of consciousness and cognition, I have neither the inclination nor intelligence to study or explain in any real depth the vastly complex inner workings of our grey matter. I can't even pronounce most parts of the brain cited in books and articles. Furthermore, that territory is quite well-traversed, from the work of early-twentieth-century Gestalt psychologists to modern day fMRI-wielding cognitive neuroscientists, and widely available in myriad other books and articles. It is best for all concerned that I simply summon and synthesize all that amazing insight and point it toward my real worry, which is how to master our greatest asset—our mind—to our best advantage in winning the brain game. (Catch that? I did it again.)

Nor do I wish to delve deeply into the rather broad and nebulous space we call creativity, and creative problem solving. I'm far more interested in removing the obstacles that may be blocking one's naturally creative mind from more regularly producing the brilliance I know it's capable of. In

that sense, this book is more like a repair manual that helps your mind fix the seven fatal thinking flaws your brain commits. (Third time!) If I could change the world in one single way, that would be it. It's the great ambition of this little book, and if Malcolm Gladwell is correct in asserting that little things can make a big difference, the odds may just tip in my favor.

The question, of course, is how to effect such a tip? First, by exposing these flaws to the widest audience possible. I'll need your help to do that. Second, by revealing a tad of the mechanics behind why they are so prevalent. I'm fortunate to have spent time with some of the foremost psychologists and neuroscientists, and this much I know from working with them: there is a significant distinction between the brain and the mind. The brain is passive hardware, absorbing experience, and the mind is active software, directing our attention. But not just any software—it's intelligent software capable of rewiring the hardware. I could not have said that with confidence a few decades ago, but modern science is a wonderful thing.

The third and final way is by introducing you to the seven "fixes"—tools and techniques that I as well as others have developed, and which through my work I have found to be among the most effective and practical ways to not only neutralize the fatal flaws of thinking, but also forge new neural connections in the brain.

I will ask you to keep a simple mantra in mind at all times:

What appears to be the problem, isn't.
What appears to be the solution, isn't.
What appears to be impossible, isn't.

This book represents a short and user-friendly distillation of everything I've learned in my three decades of facilitating and coaching individuals and teams as they pursue their most important challenges. In an effort to continuously improve my own and others' mental capability, I've watched tens of thousands of people, incorporated the work of highly regarded scientists, scholars, and strategists, experimented with hundreds of both original and borrowed techniques, and made hundreds of mistakes. My aim is to spare you from having to do all that on your own. It is a book that is meant not simply to be read, but to be used. Again and again. Not a bad deal for 20 bucks.

While I cannot grant you the gift of flawless thinking, it is indeed the thought that counts.

INTRODUCTION

# 7 Fatal Flaws

*We cannot solve our problems with the same thinking we used when we created them.*

**—ALBERT EINSTEIN**

It's 2005. I am seated in a corporate conference room on the top floor of an eight-story building in southern California, surrounded by 12 highly skilled bomb technicians from the Los Angeles Police Department who have been hand-picked and gathered to address a complex challenge regarding new methods and approaches needed to respond to bomb calls in the new age of everyday terrorism. They received their training at the same Kentucky facility that trains all bomb technicians in the United States, regardless of military or paramilitary branch.

The problem is as wicked as a problem could possibly be: how to handle fluid, potentially catastrophic situations involving highly lethal improvised explosive devices (IEDs) capable of massive devastation and death in public places.

The current strategy isn't working as well as they need it to, because a new breed of terrorism has entered the mix, one that is unpredictable, constantly changing, operates an essentially leaderless organization, defies all conventional warfare,

logic, and rationality, and has no qualms about taking the lives of civilians . . . or their own lives, for that matter.

I am excited to have been chosen to be the facilitator over the course of the next two days, at the end of which they will present their solution to LAPD's counterterrorism senior command staff. I am also as apprehensive as I've ever been, with any team, anywhere, in any setting.

These are the most highly paid officers in the entire department, the guys and gals who have to cut the right wire, so to speak. It's a job that requires quick thinking, quick reads, quick decisions, and quick action—all under enormous pressure in a situation that presents them with something they've never seen before. They often must improvise in a split second. They do not have time in the field to think deeply.

Above all, they are men and women of action. Sitting in a brainstorming session with some civilian who possesses absolutely no experience or expertise in doing their incredibly challenging job isn't exactly their cup of tea. They didn't volunteer to be here. They'd rather be out chasing bad guys and protecting the world from the evil crazies. The fully armed officer to my left takes off his gun belt and riot stick, then leans over to whisper, "I'm only here because I was ordered." This doesn't help my level of apprehension. I am unarmed.

There's a good bit of discomfort, skepticism, and tension in the air. So while I have no explosives training, I do need to defuse the situation just a bit. I certainly have no authority over them, but I do "own" the process. I need to not only establish some rules of engagement, but do so in way that opens minds and encourages divergent thinking, because

that's what's needed here. Go-go "Git 'er done" thinking won't cut it.

By way of introduction, I ask the good problem-solvers to raise their hand. Every hand goes up. No surprises there, bombs are problems, and problem-solving is the air they breathe. I tell them to keep their hands held high, which they do with surprising obedience. I continue the query, by asking those who consider themselves great learners to now raise their other hand. Same result, all hands up. Twelve LAPD officers with both arms up in the air. I can't resist: "Do I ever wish I had a camera right now." Grins, groans, eyerolls, snickers. Then, I ask the true innovators to keep their hands up. Every hand down. No takers. None.

I didn't ask that question to destroy confidence, but to change the frame. I make the point that as a practical matter, innovation, problem-solving, and true learning—the kind where new knowledge is actually created by the learner—employ the same iterative process: questioning, framing, hypothesizing, ideating, testing, reflecting. So, I've essentially now dubbed them innovators.

The ice may be melting, but it's not quite broken. Because they're accustomed to working closely with a partner, I split the group into six pairs and give them a quick thought challenge to tackle, one based on a real problem and involving something they're fairly familiar with—compliance—but one that is much simpler than any problem they will ever face on the job.

My hypothesis is that the LAPD bomb techs will do what everyone else I had ever seen work on this kind of challenge had done, in all the same ways, and in all probability fail to solve the problem.

## THOUGHT CHALLENGE*

Imagine that you own a luxury health club. As part of the membership perks, each of the 40 shower stalls—20 men's and 20 women's—is stocked with a bottle of very expensive ($50), salon-only shampoo, which is only available in beauty supply retail stores to licensed hair stylists. The customers love it and rave about this particular perk. Unfortunately, bottles disappear from the showers all the time. In fact, the theft rate is 33 percent, presenting a costly situation, not to mention a bad experience for members reaching for the shampoo, only to find the bottle gone. Your staff must constantly resolve complaints among your "honest" members. You've tried a number of things to solve the problem: reminders, penalties, and incentives to try and reduce theft, but nothing so far has worked. The front desk even sells the bottles at a very slim profit margin.

You decide to ask your employees, all of whom are hourly, to help solve the problem, and give them several nonnegotiable conditions: the solution must completely eliminate theft; it cannot involve discontinuing or limiting the current shampoo offering in any way (one full-size bottle of the current brand per stall must not change); any solution must be of extremely low, and preferably no, cost (pennies per stall, at most); there can be no additional burden on the member; and the solution must be easy to implement, without disrupting the normal operation of the club.

* This problem is based on a Los Angeles-area health club. I turned the story into a thought challenge.

You tell your employees that they are free to be as innovative as they wish and do anything they want, as long as all conditions are met.

I reiterate to the bomb tech team that they are free to be as innovative as they wish, come up with any solution they wish, be as wild and crazy as they wish, but that their idea will be peer-graded by the rest of the room on the basis of how well their solution meets *all* of the conditions, while violating none. And because working under time pressure is part of their job, I give them just five minutes to come up with their best idea. I challenge them to match their problem-solving chops with those of the part-time health club employees, who in fact solved the problem elegantly. I put a little skin in the game and tell them that the team that comes up with the best idea gets a special gift. It's now a friendly competition.

I'd been using another version of this exercise* in a creative problem-solving seminar at the University of Toyota, and my observations of several hundred participants over the course of several months had begun to reveal some interesting patterns. I liked these types of challenges for several reasons. First, because they are based on very real business problems and, as mentioned, are far less complex than everyday work-related problems. Second, because these sorts of conundrums catch people doing many if not all of the things that prevent them from seeing the solution that achieves the maximum effect with the minimum means. I have for years used this as the simple definition of an *elegant solution*.

* I will share another version of the exercise with you later in the book.

**THE ELEGANT SOLUTION**

One that achieves the maximum effect with minimum means.

Try your hand at solving this thought exercise. Put this book down and let your mind play with the possibilities. I'll even double your resources: you have 10 minutes. Enlist the help of someone else if you like—some people prefer to collaborate. Jot down all your ideas, select the best one, and then we'll continue.

Seriously, try it. I'll wait. The rest of the book will be more meaningful if you do.

Back? How did it go? Do you think you came up with the elegant solution? If you're like 95 percent of the people I give this kind of problem to, including the LAPD bomb techs, you undoubtedly came up with several ideas.

Here are the most frequently given solutions:

- keep bottles at the front desk to check in and out
- hire a locker room attendant to check them in and out
- put travel-size bottles in the stalls
- install cameras
- loyalty program offering a free bottle for keeping a clean record
- install lockable pump-top dispensers in each stall
- have a gym bag-checker at the exit
- discontinue the shampoo in the stalls
- charge a separate fee for shampoo
- sell the shampoo at cost

- "most wanted list": pictures and names of offenders
- chain the bottles somehow to the wall
- put the shampoo in unmarked bottles
- install "do not remove shampoo" signs in stalls
- give out free sample-size bottles at the front desk
- hire shower security guards
- puncture the side of the bottle near the top
- install radio-frequency identification (RFID)
- consider loss due to theft a cost of doing business
- keep the bottles near empty at all times

Unfortunately, all of these solutions violate one or more of the conditions imposed—some more than others, of course—and none of them represent the rather elegant solution produced by the health club employees, which I will get to in a bit.

## THE SEVEN FLAWS & FIXES

Every time I watch folks wrestle with this challenge, I'm constantly amazed at how people so consistently fall victim to the same patterned thinking traps and exhibit the same kinds of behaviors over and over again. I was not disappointed as I watched the bomb techs work.

The scientific community has a whole host of sophisticated labels and pet names for these behaviors, as well as a long laundry list of other patterns, but let me simplify things a bit: they are fatal thinking flaws. There are seven of them. Each carries with it the potential to kill a great idea, and prevent an elegant solution from ever seeing the light of day.

That there happen to be seven is purely coincidence!

### 1. Leaping

When I watched the LAPD bomb techs work on the problem, they immediately began offering up solutions in rapid-fire fashion. They spent nearly all their time doing one thing: brainstorming. Or as designerly types call it, ideating. (Horrible word. Hate it.) What struck me as curious was that they invested little if any time doing what they were all actually trained very well to to do: first gather the facts, then synthesize them into a theory of the crime and the motive behind it, before ever trying to solve it. Sherlock Holmes would've been disappointed, having advised Watson in no uncertain terms, "It is a capital mistake to theorize before one has facts. Insensibly one begins to twist facts to suit theories instead of theories to suit facts." In real terms, they bypassed entirely any discussion of why people were stealing the shampoo.

Moreover, the conditions of the challenge are generally ignored. I have observed that it appears to be easier, or at least more common, for people to think "outside the box" than inside it; and that is not necessarily a good thing.

Immediately and instinctively leaping to solutions in a sort of mental knee jerk almost never leads to an elegant solution to an unfamiliar, complex problem, because not enough time is devoted to framing the issue properly. In the thought exercise, I listed facts and constraints in a slightly disguised attempt to paint a picture of the desired future. I did not, however, explicitly frame the problem. I wanted to leave that to the LAPD bomb techs, and to you.

Perhaps you thought you were solving the problem of dishonesty, which is one way to frame the challenge. But it is not the only way, nor is it the best or most useful way, because your chances of alchemically transforming dishonesty to

honesty in the context of petty theft are, well, nil. There is an art to framing and reframing problems, and part of the art is in the timing. The fix for the Leaping flaw is generating multiple ways to frame the problem. In other words, instead of coming up with answers right away, you come up with questions right away. It's called *Framestorming*.

In this case, figuring out why people are stealing the shampoo is key. Dishonesty is indeed one cause, but one too abstract to correct. There are others, including accessibility to a highly desirable item. The bottle of shampoo is too tempting, at least for a third of the health club's patrons. Once you understand that, you can frame the problem to focus on the question of how to make it utterly undesirable to remove the bottle of shampoo, without incurring cost or burden to anyone. Remove the temptation, eliminate theft entirely.

Framing a problem properly has everything to do with whether it gets solved elegantly.

### 2. Fixation

Fixation is an umbrella term for our general mental rigidity and linear thinking—our go-to mindsets, blind spots, paradigms, schemas, biases, mental maps, and models—that make it easier for us to make it through the day, but harder for us to flex and shift our perception. The term itself comes from what psychologists call "functional fixedness." Our brains are amazing pattern machines: making, recognizing, and acting on patterns developed from our experiences and grooved over time. Following those grooves makes us ever so efficient as we go about our day. The challenge is this: if left to its own devices, the brain locks in on patterns, and it's difficult to escape the gravitational pull of embedded memory

in order to see things in an altogether new light. In other words, those deep grooves make it tough to go off-road and, as the Apple tagline goes, think different.

Fixation and Leaping are interconnected . . . two sides of the same coin. If you spend a bit more time framing the problem properly, you can often avoid getting mentally stuck in gear. In the shampoo bottle challenge, your brain may have blocked any notion of decomposing the image of the bottle itself: bottle with top, one unit, inseparable.

The health club's elegant solution? Remove the tops of the shampoo bottles. Problem solved. No one wanted to put a topless bottle of shampoo in their gym bag!

If you're thinking that this solution will irk the 67 percent of the patrons who weren't stealing shampoo, well, that's just your Fixation flaw speaking. The cure for Fixation is what I call *inversion*, and captures the essence of several creative thinking techniques used by designers and artists to radically shift their thinking from the current reality of how things are in order to pursue the possibility of how they could be: Steve Jobs was known for his "reality distortion field"; Stanford engineering professor Robert Sutton often refers to *vuja de*, which is the opposite of *deja vu**; his Stanford colleague and creativity professor Tina Seelig suggests that to spur new thinking we take the current conditions of the situation and think of the polar opposites; TED Ideas editor Helen Walters argues that we should regularly "flip orthodoxy."

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* If *deja vu* is the feeling that a certain event has happened before, *vuja de* is the direct opposite . . . an event or situation that should be familiar is suddenly very different. The late comedian George Carlin jokingly coined the term, describing it as "the strange feeling that, somehow, none of this has ever happened before." https://youtu.be/B7LBSDQ14eA

### 3. Overthinking

On the other end of the thinking spectrum from Leaping is Overthinking, which can be thought of as our knack for creating problems that weren't even there in the first place. Overthinking is a rather deep bucket filled with a host of variations on a theme: overanalyzing, overplanning, and generally complicating matters by adding unnecessary complexity and cost. In looking at the list of most common theft-prevention solutions, notice that many require the addition of resources of some kind: manpower, money, material. Most of them not only violate the conditions of the challenge, but are completely impractical. We often ignore the most important constraints of a given problem, which blocks the discovery of a more elegant solution.

Why *do* we overthink, overanalyze, and complicate matters? Why *do* we add cost and complexity? Most interestingly, why do we all do it so naturally, intuitively, and, perhaps most disturbingly, so consistently?

Part of the answer is that we're hardwired that way. Through eons of evolution, our brains are designed to drive hoarding, storing, accumulating, collecting-type behavior. We are by nature "do more/add on" types. When it comes to problem-solving, this instinct translates into adding complexity and cost as a first course of action, especially when we recognize the problem as being a complex one requiring a deeper level of thinking, analysis, and planning. "I can solve the problem, but it's going to take more resources" is the oft-heard refrain. But it doesn't necessarily take genius to spend resources . . . it does, though, to work within the resource constraints you're given. What cost and complexity did you add in trying to solve the thought problems?

Another part of the answer is a simple lack of a reliable approach that enables us to grapple with uncertainty, risk, external forces beyond our control, and rapidly changing circumstances that eschew any sort of traditional planning. We've lost the required childlike learning and experimenting capability needed to make innovative problem-solving simpler, safer, and speedier. MIT's master of business experimentation Michael Schrage calls that capability "serious play," and puts it this way: "Innovation too often is too slow, too expensive, too complicated, too risky, too rigid, too dull, too little, and too late."[1] Schrage doesn't even like the word "idea" and prefers to couch all challenge-chasing efforts in terms of "simple, fast, and frugal" tests meant to reveal the validity of a concept.

He's right. Until any concept is raised to the level of reality, it is merely a guess, or set of guesses, in need of testing. The simple fix for Overthinking is *Prototesting*, a combination of prototyping and testing. From a back-of-the-napkin sketch to a first draft to a minimally functional mockup to technical A/B testing to the reverse engineering of a set of strategic choices, Prototesting enables us to tangibly tease out the mental leaps of faith made in crafting any kind of solution and run a simple test quickly and cheaply in order to learn. Prototesting lends proof of concept, with the intent being to prove an initial concept is worth developing further.

### 4. Satisficing

People favor action and implementation over nearly all else, and certainly over incubation. By nature we *satisfice*, a term combining satisfy and suffice, and coined by Nobel laureate

Herbert Simon in his 1957 book *Models of Man*. We glom on to what's easy and obvious and stop looking for the best or optimal solution, the one that resolves the problem within the given goals and constraints. We over-compromise and suboptimize, accepting the halfway solution and relying on our ability to push it forward. Unfortunately, when it comes to complex problems, that usually amounts to a rather Herculean but useless effort akin to pushing water uphill. We fool ourselves into thinking "good enough is," thereby creating something that demands massive work in order to succeed. By thinking less, we end up working more.

Breakthrough thinking demands something to break through. Generally, it's the space between conflicting goals, causing creative tension. With the shampoo example, I deliberately set goals in conflict under a short time frame to force a creative tension in your mind to raise awareness of what your brain is doing.

Did you refuse to make trade-offs, refuse to compromise on the criteria, or did you simply pick a solution at the 10-minute mark and rationalize why it would work?

As Rotman School professor and renowned business strategist Roger Martin tells us, "By putting in the necessary thinking work and refusing to accept the unattractive trade-offs, we can unleash our ability to build new and better models and create value for the world."[2] At the heart of Martin's integrative thinking methodology is a synthetic process that calls up what he terms the *opposable mind*, which merges the very best parts of two opposing but satisficing solutions in an elegant mash-up that defeats the tendency to satisfice and settle for anything less than the best solution.

The fix for Satisficing is thus: *Synthesis*.

### 5. Downgrading

Downgrading is the close cousin of satisficing, with a twist: a formal downward or backward revision of the goal or situation, often resulting in wholesale disengagement from the challenge. It comes in a few basic flavors. First, there's the twisting and sifting of facts to suit our solution, arrived at by Leaping or Fixation. Second, there is the "revised estimate." The result is the same: we fall short of the optimal or ideal solution, pick one that gets us most of the way there, then sell the upside and downplay the downside.

Basically, we commit what amounts to preemptive surrender, which in a perverse way enables us to do what we really want to do, which is to declare victory. We do it all the time, because no one wants to feel like they didn't succeed. It's not very resourceful, creative, or heroic.

But here's the thing: you can't win a football game by aiming for the 97-yard line. You can't score a run in baseball by only making it to third base. You can't reach Mars by shooting for the moon. You can't . . . well, you get the drift.

Studies of brainstorming sessions reveal that idea generation generally stalls after about 20 minutes. At that point most groups stop and turn their attention to evaluating their ideas. However, the research shows that teams with the best ideas don't stop there. Rather, they embrace the psychological barrier and push through the stall zone, somehow resetting their minds to opening up new channels of widely divergent thinking.

The fix for Downgrading is *Jumpstarting*, defined just as it is in the dictionary: starting a stalled vehicle whose battery is drained by connecting it to another source of power. Jumpstarting redoubles your focus on both your will and your

way, the two elements needed to attain any well-set goal, to give yourself a boot in the brain in lieu of disengaging or abandoning the challenge entirely. Jumpstarting combines simple techniques that not only have recent studies shown to be quite effective for pushing past the surrender mark, but that I know to work in well in the field.

In considering the shampoo problem, did you think: 0 percent theft is impossible, throw up your hands and simply give up, turning the pages until you found the solution somewhere in the narrative? If you did, I bet the teacher caught you peeking at your neighbor's answers on that third-grade math quiz in elementary school.

I watched the bomb techs do the equivalent. They ran out of obvious ideas well before the five-minute mark, and immediately began looking at the other pairs around the room, looking for answers. Interestingly, even when a stolen glance yielded an idea they hadn't thought of, they would wrinkle their nose or shrug their shoulders, dismissing it out of hand.

This brings up the final two flaws, which deal with the outright rejection of ideas. There is a nuanced difference between rejecting ideas of others and rejecting ideas of our own, so I will treat them separately.

### 6. Not Invented Here (NIH)

NIH is a well known acronym in management literature* for "Not Invented Here" syndrome, defined as an automatic negative perception of, and visceral aversion to, concepts and solutions developed somewhere else, somewhere external to

* In a database search of scholarly papers, I found over 600 journal articles referring to NIH syndrome.

the individual or team, often resulting in an unnecessary reinvention of the wheel. It means, "If I/we didn't come up with it, I/we won't consider it," and "I/we can do anything you/they can do, better." We don't trust other people's solutions. While there may be a basis in neuroscience related to triggering our threat response, our expression of it is always the same: shutting out another person's or group's idea immediately and without due consideration merely because *they* came up with it. The next time you're in the lobby waiting for the elevator to go up to your office or hotel room, count how many people hit the up button even though they can see that you've already pushed it. That's NIH.

How much time did you spend pondering why previous solutions didn't work? I'll bet almost none. The LAPD bomb techs sure didn't. The impulse to do something, anything, and fast, leads us to focus on execution, and as a result we ignore the facts. In laying out the thought exercise, I specifically said that reminders, incentives, and penalties had not worked in the past. Yet it never fails: in every session in which I use this kind of thought exercise, I'm given some form of at least one of those. Go back a few pages and see how many of the popular ideas are really just another form of what hadn't worked in the past . . . reminders, incentives, penalties. Perhaps you caught yourself thinking, *they didn't do it right*, which is acceptable if you intend to focus on learning why those previous attempts failed, because doing so would eventually lead you to reframing the problem. But simply pushing your version of the same idea just because those other attempts didn't originate with you is harmful NIH.

As Walter Isaacson pointed out in his biography of the late Steve Jobs, most people know Apple took the graphic

user interface from Xerox, an act "sometimes described as one of the biggest heists in the chronicles of industry." According to Isaacson, Jobs was proud of it, and said: "Picasso had a saying—'good artists copy, great artists steal'—and we have always been shameless about stealing great ideas. "

And therein lies the fix for NIH. Instead of calling it stealing, however, I will simply steal the phrase Procter & Gamble's open innovation program—Connect & Develop—coined when in 2000 newly appointed CEO A. G. Lafley decreed that fully 50 percent of the company's innovations must come from outside the organization: *Proudly Found Elsewhere (PFE)*. Implementing a PFE strategy is quite literally an opening of the mind to let in, leverage, and recycle the ideas and solutions of others.

### 7. Self-Censoring

When we reject, deny, stifle, squelch, strike, silence, and otherwise put *ideas of our own* to death, sometimes even before they're born, it is an act of Self-Censoring. I believe Self-Censoring is the deadliest of the fatal flaws, because in my admittedly subjective opinion, any voluntary shutdown of the imagination is an act of mindlessness, the long-term effects of which eventually kill off our natural curiosity and creativity. Like NIH, Self-Censoring is a special form of Fixation, bordering on mental masochism: we field or create a great idea, we recognize it as such, but deny or kill it anyway. I often think of it as "ideacide."

Whether it's because we're too critical or because we recoil at the impending pain of change and disruption of normalcy, Self-Censoring arises out of fear. That fear shrinks us, mentally. We lose our childlike, uncensored urge to play, explore,

and experiment. We render ourselves mindless. When that happens, we are vulnerable to our other thinking flaws, such as Fixation and Overthinking, which become both judge and jury. Then we slap ourselves on the forehead when someone else "steals" our great idea.

I know for a fact that the elegant solution to the thought challenge exists among the participants and is often suggested in small team discussions far more times than it is selected as the best idea. I distinctly saw one of the bomb techs slap his teammate on the arm and whisper through gritted teeth: "I knew we should just take the tops off!"

Being what I consider the deadliest of the fatal flaws, Self-Censoring requires a potent fix, one which has foundations in the larger and broader concept of mindful awareness, or mindfulness for short. Not to be confused with Asian meditation-based philosophies seeking to suspend thinking, mindfulness is active thinking centered on achieving a higher order of attention, considering different perspectives, and noticing moment-to-moment changes around you. David Rock, in his book *Your Brain At Work*, defines it as "living in the present, being aware of experience as it occurs in real time, and accepting what you see."

The fix for Self-Censoring is based on a classic tool, introduced by philosopher Adam Smith over a century and a half ago, which he called "The Impartial Spectator." It is a method for attuning your attention in a way that indeed puts you in the present and gives you a more unbiased perspective, in much the way our attention is focused when we travel to a new place. As visitors we are outsiders looking in: naturally mindful, fully present, noticing details the locals now take for granted. Psychologists refer to it as *self-distancing*, and as

the name implies, the concept is one of distancing yourself from, well, you. Researchers at the University of Michigan recently discovered that the simple practice of replacing the first-person pronoun "I" with either the third-person pronoun "You" or their own name in working through a stressful situation reduced anxiety, rumination, and what athletes call "choking."[3]

Thus the seventh fix: *Self-Distancing*.

**WINNING THE BRAIN GAME**

**Fixing the Seven Fatal Flaws of Thinking**

| FLAW | FIX |
|---|---|
| Leaping | Framestorming |
| Fixation | Inversion |
| Overthinking | Prototesting |
| Satisficing | Synthesis |
| Downgrading | Jumpstarting |
| NIH *(Not Invented Here)* | PFE *(Proudly Found Elsewhere)* |
| Self-Censoring | Self-Distancing |

Leaping, Fixation, and Overthinking make up Part One of this book, which I'm calling *Misleading*, because of the power these flaws have to lead us astray. Part Two looks at Satisficing and Downgrading, and is labeled *Mediocre*, because these two flaws undercut our best thinking and performance. Part Three covers NIH and Self-Censoring, which

from my observation and experience are not quite as dominant and prevalent as the others, but certainly equally as deadly, if not deadlier, and are properly classified as *Mindless*.

In reality, all seven of these thinking flaws are not truly separate and distinct, but rather interrelated variations on a general tendency to let our lazy brains take over and orchestrate the symphony of thought our minds are capable of. Regardless of playing field, I believe mindful thinking is the new competitive advantage, and the seven fixes are a magic set of tools for achieving it. In my work with professionals and organizations of all kinds, I have found them to be best in class. The seven can all be placed in a larger toolbox properly labeled *Reframing*.

Reframing is the singular response to the question of how to respond to our mantra, which as you may recall is: *what appears to be the problem, isn't; what appears to be the solution, isn't; what appears to be impossible, isn't*.

So what happened in your own problem-solving? If you didn't arrive at the actual and elegant solution as your best idea, my bet is that you got tripped up by one of the seven fatal thinking flaws, just like the LAPD bomb squad. If you did in fact arrive at the elegant solution, you are to be congratulated. Give this book to a friend. You don't need it, and I can't help you.

Back to my story.

As I explained these mental "glitches" to the bomb techs, they began to loosen up and lean in. They chimed in with examples of how these various traps had played out on the job and even in their personal lives. They arrived at the desired conclusion: don't let these traps prevent the new strategy from being anything less than elegant.

In the end, the 12 bomb techs created an altogether new, far more fluid way to respond to bomb threats. They presented the concept to their commanders, and after some field tests and a few months of tweaking, it became the new standard for the Los Angeles Police Department.* Would they have done so without a little off-road thinking activity? Perhaps. But previous attempts hadn't made much headway, and I like to think I helped the team in some small way.

Fast forward to the following year. I'm on the sixth floor of LAPD's Parker Center,† with then-Chief William Bratton and his rather large staff of nearly 20 assistant chiefs, deputy chiefs, and special commanders, including current LAPD Chief Charlie Beck, along with the department psychologist. They liked what had happened with the bomb squad. They want to think through a new strategy using the same approach. I start them off with another thinking challenge.‡ They experience the same kinds of results as the bomb squad. They too learn how to fix the seven fatal thinking flaws, eventually creating a new and elegant top tier operational strategy for enforcing the law in Los Angeles.

Fast-forward to the present day, over 10 years and several hundreds of thought challenges given to many thousands of people after that day in 2005, in which I now have enough evidence, arsenal, and guidance from several world-class thinkers I'm fortunate to count as close advisors that I can now offer you this little crash course in winning the brain game.

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* For reasons of security and confidentiality, I am unable to share the beautifully elegant and simple visual created by the LAPD Bomb Squad.

† The old Parker Center, not the new one opened in 2009.

‡ I will share this exercise with you in the next chapter.

PART ONE

# Misleading

CHAPTER 1

# Leaping

*If I had an hour to solve a problem and my life depended on the solution, I would spend the first fifty-five minutes determining the proper question to ask, for once I know the proper question, I could solve the problem in less than five minutes.*

**—ALBERT EINSTEIN**

When we're toddlers, we have all the time in the world. Days last forever. Everything fascinates us. The world is filled with wonder. Our urge to explore and play fuels our curiosity, which is all-consuming. We are sponges, hungry to experience everything around us, immersing ourselves in our environment in every way possible, with all of our senses. Put us in the sandbox with a cup and spoon and we will occupy ourselves for hours, content to play until we get tired, thirsty, or hungry. Our brains soak it all in, wiring thousands of new connections each day, creating new knowledge. As we gain language skills, our curiosity takes the form of incessant questions, unbound and uncensored. Then, in preschool, our activity becomes more structured. We learn about rules: sitting up straight, coloring inside the lines, resting on cue, speaking in turn, standing in lines, and, of course, never talking when we're in one. In elementary school, we learn

the importance of answering the teacher's questions correctly within strict time limits. Our performance depends on it: we're graded on our ability to regurgitate quickly. As we move up in grade, all of that gets exaggerated, enforced, and accelerated, year after year. Our own questions lose priority, until we eventually lose our desire to ask at all, for fear of disrupting others. As we enter the workforce, we bring with us this embedded *right-answer-now!* mindset, which pleases the boss, who has taken the place our teachers once held. By the time we're 25, we're finely tuned, well-oiled machines of efficiency, wired to answer quickly and, if we're lucky, correctly.

Given our grooming, is it any wonder that we leap to solutions?

## THE LEAPING FLAW

Psychologists give Leaping any number of labels, from the more sophisticated "rapid cognition" to the more colloquial JTC, which stands for "jumping to conclusions." Malcolm Gladwell called it "thin-slicing" in his 2005 book *Blink: The Power of Thinking Without Thinking*, the genesis for which actually concerned an incident he had with some New York Police Department officers, whom he thanks in his acknowledgments.

As he tells it, he had grown his hair long after his megahit *The Tipping Point*, which for most people is inconsequential. Not for Malcolm . . . his hair is even more wild in person than it looks in pictures.* All of a sudden, he was getting

* I met and spoke with Malcolm Gladwell several years ago when we were both speaking at the CA World Conference in Las Vegas. I was the warmup band.

all the wrong kinds of attention from authorities—traffic stops, airport security pat-downs—which culminated in his being stopped for questioning by three NYPD officers as he strolled down 14th Street in Manhattan. They were looking for a felony perpetrator, the defining quality of whom was a "big head of curly hair." The officers had driven their van up on the sidewalk and jumped out on nothing more than a glance at Malcolm's head. It took a full 20 minutes before the officers set him free, even though he had nothing whatsoever in common with the police artist's sketch, other than hairstyle. "Something about that first impression created by my hair derailed every other consideration in the hunt for the rapist," Gladwell wrote. "That episode on the street got me thinking about the weird power of first impressions. And that thinking led to *Blink*—so I suppose, before I thank anyone else, I should thank those three police officers."[4]

*Blink* was published right in the midst of my work with the LAPD bomb squad, so the timing couldn't have been more perfect. I shared the story with the officers I worked with in follow-up sessions, and we all agreed that no matter how trained and skilled someone might be, everyone falls prey to Leaping. They actually had their own term for it: *jumping the gun*. In fact, they decided to give me a taste of my own medicine, which actually involved a gun. They invited me to Elysian Park, home to the LAPD Academy. And oh did they ever exact revenge for the shampoo exercise.

The gun I was given didn't fire real bullets, thankfully. It was wired to some sort of video training device. In front of me was a large screen. After some cursory instruction on how to hold, aim, and fire the weapon, the fun began. A video began to play, from my point of view. In other words, it was

as if I was a police officer wearing a GoPro. In the first situation, I've stopped a suspect car, the driver of which is wanted for questioning. As I approach the car, the driver gets out, reaches into his jacket pocket, and before I can even react, he's stabbed me in the gut. I'm down. They play it again, and this time I'm ready. As the driver reaches into his jacket pocket, I shoot him in the shoulder. Turns out he was just getting his wallet.

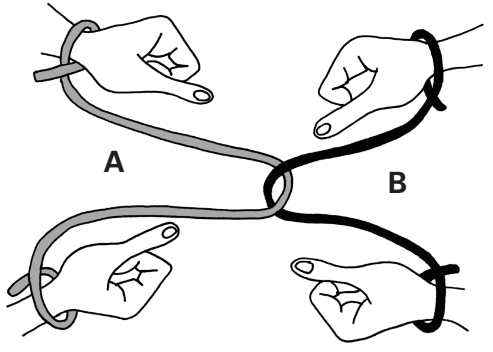
Over and over, through a succession of look-alike situations in which I really do need to "blink" rather than "think" my way through simply to survive, I come to understand the incredibly difficult and complex tension between the two modes. I come to appreciate the enormous pressure one can feel when placed in potentially life-threatening situations that can transpire in a millisecond. And I come to understand that blinking and thinking are two sides of the same coin. The challenge is in training our minds to be more effective in applying either or both, as the situation dictates.

As I left my bomb squad officers rolling on the floor laughing at my dismal display of paramilitary potential, a question began taking shape in my mind: *How might we exploit our inclination to blink to improve our ability to think?*

## WHY WE LEAP

That question drove me to investigate the connections between mind and brain, as well as mind and body. It also enabled me to find and eventually use a different kind of thought challenge, a more physical one, and one that I used with Chief Bratton and his deputies and commanders.

Now, there is perhaps nothing more satisfying than putting a police officer in handcuffs and watching them try to escape. Which is exactly what I did. I found something eerily appropriate called "The Prisoner's Release," from an 1896 book called *Cassell's Complete Book of Sports and Pastimes*:




Take two pieces of string, and round the wrists of two persons tie the string, as shown. The puzzle is for them to liberate themselves, or for any one else to release them without untying the string.*

I went to Home Depot, got some different colored nylon rope, and made five pairs of handcuffs, and with uncontainable joy presented the challenge to LAPD's highest ranking echelon. I gave them five minutes to escape, impressing upon them the constraints: the handcuffs must remain on the original wrists at all times . . . no removal allowed.

* The original directions also include: "It adds to the amusement of the puzzle if one of the persons is a lady and the other a gentleman." I've tried this. They are correct.

In a magnificent display of Leaping, each couple immediately and without a moment's hesitation leapt into various versions of the same solution. I call it string dancing: stepping over the ropes, sliding them up and over themselves as they twirl and twist and struggle to get free. Over the course of the five minutes, not only did no one escape, but all of the other fatal flaws of thinking gloriously manifested themselves: they kept doing different versions of the same move (Fixation), they went through gyrations, twists, and turns that tangled them up even more (Overthinking). Halfway through, as exasperation set in, I gave them a hint: "You do not need to perform any dance movements . . . you can solve the problem face to face without a single twist or turn." They stopped momentarily to listen, looked at me like I had two heads, looked at their partner, looked at their handcuffs, shrugged, and then immediately returned to what they were doing before (NIH). Soon they began asking if they could cut the ropes or swap hands since it wasn't explicitly stated that they couldn't (Satisficing), asking me if this is even possible (Downgrading), and even overriding their partner who might say something like, "let's try a different way" or "let's think this through" (Self-Censoring).

To this day, I use this as the icebreaker to a one-day bootcamp I deliver twice a year at the California Peace Officer Standards and Training Command College, in a program for senior police executives aspiring to become a chief of police in a California city. The results are similar, with roughly one out of every 20 or so couples escaping the handcuffs elegantly. Each time that happens, it becomes clearer to me that the key to success is to hold off on "the dance," and think about the problem first before taking any action whatsoever.

Doing so enables the escape in just a few seconds, while the dancers continue to dance, with ever increasing levels of frustration.*



Perhaps the easiest way to explain Leaping is to do what psychologists and neuroscientists alike do: categorize our thinking into two main circuits. Psychologist Daniel Kahneman in his 2011 book *Thinking, Fast and Slow* uses terms coined by psychologists Keith Stanovich and Richard West: System 1 and System 2. There are many other labels for these circuits, such as automatic and controlled, left and right brain, default and executive drive, conscious and unconscious thinking, working and latent memory, divergent and convergent thinking, basal ganglia and prefrontal cortex, etc. Let's just keep it simple and memorable, taking our cues from Kahneman: FAST and SLOW. Let's be clear that our brain is far more complex than this, and this two-circuit concept is simply a helpful metaphor that aids a short discussion.

* The solution in Cassell's is: "B makes a loop of his string, passes it under either of A's manacles, slips it over A's hand, and both will be free. Reverse the proceeding, and the manacles are again as before."

FAST does the rapid, automatic, reactive, unconscious, and instinctive thinking we employ to solve routine problems . . . Gladwell's "blink." SLOW handles the labored, effortful, conscious, and rational thinking we employ to solve more complex and unfamiliar challenges.

Here's how it all works. When I toss a ball to you, you don't need to think deeply about it in order to catch it. FAST, operating on "heuristics," or patterns, guides your automatic response of quickly positioning your hands exactly where they need to be and clutching the ball as it lands right where you know it will. But if it happens to be the very first time anyone has ever tossed you a ball, it's SLOW that will handle things, and you'll drop the ball. You indeed have to think about it at first, deliberately and consciously trying to catch it until you "get it" and your brain forms a pattern, enabling FAST to work.

FAST is where our expertise and confidence live, where our intuitive "sixth sense" operates. It's also where almost all of our mistakes get made. And it's where Leaping occurs. Kahneman tells us that our FAST circuit is a "machine for jumping to conclusions" when information is limited. This is exactly what Malcolm Gladwell experienced with the three NYPD officers.

For example, suppose I ask you whether you think Nancy would be a great nurse. I tell you that she is caring, empathetic, and meticulous. You've probably already leapt to a yes, thanks to FAST, which reads that bit of information as all good signs, which of course they are. Still, you leapt. You did not bother to stop and ask what the critical qualities of a good nurse might be. What if I was just about to tell you that Nancy is a kleptomaniac, hot-tempered, and suffers

occasional memory loss? None of this new information conflicts with the first three traits I gave you, but you probably don't want Nancy as your nurse any longer.

## THE NEUROSCIENCE OF LEAPING

In a recent study[5] published in the April 2015 edition of *PLoS Biology*, researchers at the California Institute of Technology (Caltech) discovered the source of why we jump to conclusions: uncertainty. When we are unsure of a situation, we quickly, and often erroneously, associate cause and effect. The authors use the term "one-shot learning" to describe jumping to conclusions.

"If you are uncertain, or lack evidence, about whether a particular outcome was caused by a preceding event, you are more likely to quickly associate them together," says Sang Wan Lee, a postdoctoral scholar in neuroscience at Caltech and lead author of the study. "Many have assumed that the novelty of a stimulus would be the main factor driving one-shot learning, but our computational model showed that causal uncertainty was more important."

Using a simple behavioral task paired with brain imaging, the researchers were able to determine where in the brain this causal processing takes place and pinpoint the part responsible for triggering one-shot learning. A part of the prefrontal cortex—the large brain area located immediately behind the forehead that is associated with complex cognitive activities—appears to evaluate such causal uncertainty and then couple with the hippocampus to switch on one-shot learning when needed.

"A switch is an appropriate metaphor," says coauthor Shinsuke Shimojo. Since the hippocampus is known to be involved in so-called episodic memory, in which the brain quickly links a particular context with an event, the researchers hypothesized that this brain region might play a role in jumping to conclusions. But they were surprised to find that the coupling between the prefrontal cortex and the hippocampus was either all or nothing. "Like a light switch, one-shot learning is either on, or it's off."

The researchers were intrigued by the fact that this part of the prefrontal cortex is very close to another part of the prefrontal cortex that they previously found to be involved in helping the brain to switch between two other forms of learning—habitual and goal-directed learning, which involve routine behavior and more carefully considered actions, respectively.

The researchers cautiously speculated that a significant function of the prefrontal cortex is to act as a leader, telling other parts of the brain involved in different types of behavioral functions when they should get involved and when they shouldn't.

FAST is what allows us to not only make it through the day with ease and efficiency, but performs effortlessly and highly effectively most of the time, especially when it comes to familiar situations and routine problems. No one wants or needs to think deeply about walking, shaving, or driving to work . . . we'd never get anything done!

But FAST makes mistakes. That's where SLOW comes in. The problem is that while deeper thinking SLOW should

be the one that prevents those mistakes and keeps us out of trouble, it's lazy. It wants to act like FAST. SLOW thinking is just plain hard work, requiring too much mental and physical effort. And our formative years have not focused on thinking slow, but rather how to economize thinking to make it fast. All the math, language, and science skills we learn in school are really just handy proxies for thinking. If you're taking action of any kind, FAST rules. SLOW kicks in only when FAST has run out of possible alternatives. The tension between the two systems is quite dramatic, and plays out every day of our lives.

Take the case of the TV remote control. You plop down on the couch after a long day, eager to watch television. FAST kicks in, and you automatically grab the remote, aim it at the box, and hit the power button. But the TV doesn't come on. What do you do? If you're like me, you keep hitting the power button. You try different angles, maybe wiping the infrared sensor on your sleeve, all the while hitting the power button. That's your FAST beginning its run through known fixes. It knows what to do next: play with the batteries. You don't replace them, you roll them around, because just the thought of getting up off the couch and having to rummage around in the kitchen utility drawer in search of four AAA batteries that probably aren't there—because that would have required some SLOW thinking ahead— is unpleasant. But the battery roll fails, and you have to change them, which you do. Then you start all over, aiming and pressing the power button. But the TV still doesn't turn on. SLOW finally kicks in, but only because you've exhausted every known fix, and you're forced into deeper thinking, which almost always begins with a question. In this case, why isn't this thing working?

Unfortunately, SLOW is the system of last resort. When it comes to the more complex problems, FAST leads us astray, gets in the way, and prevents us from solving them. By nature, the mind stays closed as long as possible!

### LEAP AND LOSE

Suppose you're playing a video game that gives you a choice: fight the alien superwarrior or three human soldiers in a row. The game informs you that your chances of defeating the alien superwarrior are 1 in 7. But your chances of defeating a human soldier are 50-50. What do you do? Most people would automatically fight the human soldiers. It seems to make intuitive sense, the odds seem to be in your favor.

But they're not. Your probability of beating the three soldiers in a row would be ½ × ½ × ½, or ⅛. In other words, you had a better shot (⅐) at beating the alien superwarrior.

You leap, you lose.

So what can we do to improve the tension between FAST and SLOW?

Daniel Kahneman isn't much help, advising us that "The best we can do is a compromise: learn to recognize situations in which mistakes are likely and try harder to avoid significant mistakes when the stakes are high."

I believe we can do far better than simply compromise. I am confident we can leverage our FAST circuit to improve our SLOW, and train our minds to fix our brain's fatal flaw

of Leaping. The clues are in the Caltech study cited earlier, which supports what I have observed and experienced in the last 10 years working with hundreds of problem-solving teams.

The secret lies in how to trigger SLOW so that it acts and feels like FAST.

## THE FIX: FRAMESTORMING

If I have learned anything from facilitating problem-solving sessions, it is that we will be largely unsuccessful in attempting to shut off the Leaping impulse, and we should not even try. We will make far more progress if we instead redirect and channel the instinct to act into behavior that feels like brainstorming,* but involves generating questions instead of answers.

It's called *framestorming*, a mash-up of framing and brainstorming. It's a way to change behavior without the pain of change, and it works amazingly well. Framestorming is more like *aikido* in martial arts, which uses opposing forces to one's advantage, rechanneling and redirecting them; it's less like *karate*, which uses one's brute force in the form of punches and kicks to win a confrontation. Aikido means "way of balanced life energy," which really gets to the heart of what framestorming achieves: a better balance between FAST and SLOW thinking energy.

Framestorming operates under the same basic rules of brainstorming, which are well-known and well over a half

* The rules of brainstorming are widely documented, so they do not need to be detailed here.

century old: go for quantity, build on ideas, withhold judgment. That's the *storming* part. It's the part that feels good, because it calls up FAST. What about the *frame* part?

Musician Frank Zappa perhaps put it best when he said: "The most important thing in art is the frame. For paint, literally. For other arts, figuratively—because, without this humble appliance, you can't know where the art stops and the real world begins."

What Zappa meant is that how we frame something has everything to do with how well it turns out, and that framing is as much an art as art itself. We frame art to draw attention to the picture. A great frame enhances appreciation. A picture isn't complete without it. But most of us probably don't pay much attention to the frame. Unless, of course, it isn't there. In which case we probably find it a bit tougher to give the piece its proper consideration.

Framing in problem-solving is every bit as important, and works much the same way. The ability to properly frame an issue or problem goes far in avoiding the typical pitfalls that limit our ability to reach the elegant solution. But we're not as good at it as we could be, for several reasons relating to the tension between FAST and SLOW. We're impatient, with attention spans sometimes far too limited to put the required energy toward framing. We're obsessed with solutions, but not with the process of generating the optimal one. We're fond of common sense, which doesn't always square with proper framing. And we have a flair for the obvious, mostly because it provides a suitable mental shortcut. We're deluged with routine problems every day that don't require framing, merely quick workarounds via FAST thinking, so our natural tendency is to treat complex

problems requiring SLOW thinking with our preferred FAST thinking.

In my observations of all the people I've seen work on the kinds of thought exercises I've shared with you, framing rarely occurs. Almost everyone moves right into tossing up ideas in the mistaken belief that I've given them all of the information they need. They bypass the critical step involving the frame. They certainly don't consider multiple frames. The reason they don't stop is clear: it's the stopping itself that feels uncomfortable. Remember, calling up SLOW is the last thing we want to do!

The best tool for fixing the Leaping flaw is framestorming. You do it right before brainstorming . . . always, every time. It will come easily and comfortably, because it feels like Leaping. Except with framestorming, the focus is on generating questions, not solutions.

The power of framestorming lies in its ability to engage our SLOW thinking in a manner that feels like FAST thinking. At the same time, it turns problems into puzzles. When we view something as a problem, we naturally engage in Leaping to solutions. When something is a puzzle, though, we naturally slow down a bit: we learn at an early age when doing puzzles that we need to get the corners and edges down first. Getting the puzzle frame right is half the battle!

## Framestorming in Three Easy Steps

Framestorming consists of three straightforward steps conducted under the general rules of brainstorming, with the ultimate goal of stating the challenge as a compelling question that acts to frame a problem as an intriguing puzzle, one that engages our more imaginative SLOW thinking.

***Step 1: Cue the language of frames.***
Good frames are stated as questions. Friend and fellow author Warren Berger wrote what I consider to be the definitive treatment of the language of frames in his book *A More Beautiful Question*. In it he argues that while we're all hungry for better answers, we must first learn to ask the right questions, then proceeds to demonstrate through a number of well-researched stories that the most creative, successful people in the world tend to be expert questioners. They've mastered the art of inquiry, raising questions no one else is asking—and finding the answers everyone else is seeking.

As Warren defines it, "a beautiful question is an ambitious yet actionable question that can begin to shift the way we perceive or think about something—and that might serve as a catalyst to bring about change."[6]

**A BEAUTIFUL QUESTION**

An ambitious yet actionable question that can begin to shift the way we perceive or think about something—and that might serve as a catalyst to bring about change.

In my interview with Berger,[7] I asked him who in business does the best job of asking beautiful questions. His answer: "Entrepreneurs, or at least the successful ones. They almost have no choice . . . their whole reason for being is to disrupt, innovate, and solve a problem no one else is solving. But first they have to define and frame the problem, and that's usually done through smart questioning."

For example, Netflix founder Reed Hastings asked, *why should I have to pay late fees for renting videos?* Square founder Jack Dorsey asked, *why can't individuals accept credit cards?* And it was Polaroid founder Edwin Land's three-year-old daughter Jennifer who famously asked, *why do we have to wait for the picture?*

Warren advises cycling through three stages of inquiry:

1. Why?
2. What if?
3. How?

"As I studied innovation stories," he told me, "I found that questioners often started by trying to understand and frame a problem—and that tends to involve a lot of why questions. Why is this a problem? Why hasn't anyone solved it? Why might it represent an opportunity? At some point, the innovator moves from why to what if questions—imagining possible solutions, often by connecting ideas. What if we tried X? What if we combined Y with Z? That's the idea stage. Then, you have to get from imaginative, what if possibilities to something more practical and concrete; you begin to ask, how might we do this?"

Rarely in watching thousands of people grappling with a thought exercise do I observe questions of any kind get raised, much less beautiful ones.

***Step 2: Generate questions.***

Now generate as many *Why? What if?* and *How?* questions as you can. As in brainstorming, framestorming initially favors quantity over quality. Go for at least a dozen questions that

frame the challenge, preferably more. Don't stop until you're well into the double digits.

Take the advice of Albert Einstein: "Life is like riding a bicycle. To keep your balance you must keep moving." This is what your FAST thinking lives for, so go with the flow. Reserve judgment or evaluation for step three—the last thing you want to do at this point is be conservative or critical.

In thinking about the shampoo theft problem from the Introduction, a quick framestorming activity might have yielded a dozen or so questions such as: *Why are people stealing the shampoo? Why doesn't everyone steal the shampoo? Why haven't previous solutions worked? Why is the shampoo so appealing? Why is it so easy to steal the shampoo? Why are people so tempted to steal the shampoo bottle? What if we did nothing? What if no one wanted to steal the shampoo? What if you couldn't hide the shampoo in your gym bag? What if the shampoo didn't travel well? What if the bottle was hard to move? How might we make it impossible to steal shampoo? How might we make people hate to steal the shampoo? How might we make it dangerous to steal shampoo? How might we remove temptation? How might we redesign the shampoo bottle without cost?*

Note that none of these are solutions, but rather provocative precursors, some of which may immediately spark a solution that meets the constraints of the challenge. All of them challenge the original question of how to stop people from stealing without it costing a penny. As my friend and Stanford creativity professor Tina Seelig says, "Start by questioning the question you're asking in the first place. Your answer is baked into your question."


COLLECTION OF VARIOUS
-> HINDUISM SCRIPTURES
-> HINDU COMICS
-> AYURVEDA
-> MAGZINES
FIND ALL AT HTTPS://DSC.GG/DHARMA
Made with
By
Avinash/Shashi
[creator of
hinduism
server]
KAPWING

***Step 3: Pick the two best.***

Once you have a master list of frames, you can select at least two that will launch you into the solution brainstorming mode, which is essentially another round of the *Why? What if?* and *How?* questions, this time focused on answers. From there, you know what to do!

You should be aware that framestorming, while being a powerful antidote to Leaping, does not guarantee the elegant solution, but it will increase the odds of putting your best brain forward.

**TAKEAWAY** The Flaw & The Fix

**LEAPING**

Leaping to solutions when tackling a complex challenge is natural and intuitive, but almost never results in an elegant solution. By inserting a simple step called framestorming that feels equally intuitive but is focused on questions rather than answers, we can trigger our deeper and more creative thinking circuits.