

The Power of Knowing What You Don't Know

THINK AGAIN

A matchstick is positioned vertically, with its wooden handle at the bottom and a small flame at the top. Instead of a traditional flame, a dynamic splash of blue water erupts from the matchhead, forming a shape reminiscent of a human head in profile, facing left. The water droplets are captured in mid-air, creating a sense of motion and freshness.

'A must-read...
the lessons in
this book are more
important than ever'
— **Bill and
Melinda Gates**

ADAM GRANT

**#1 *New York Times* bestselling author of
ORIGINALS**

**THINK
AGAIN**

ALSO BY ADAM GRANT

Give and Take

Originals

Option B

THINK AGAIN

The Power of Knowing What You Don't Know

ADAM
GRANT

WH

ALLEN

Copyrighted Material

WH Allen, an imprint of Ebury Publishing,
20 Vauxhall Bridge Road,
London SW1V 2SA

WH Allen is part of the Penguin Random House group of companies
whose addresses can be found at global.penguinrandomhouse.com



Copyright © Adam Grant 2021

Adam Grant has asserted his right to be identified as the author of this
Work in accordance with the Copyright, Designs and Patents Act 1988

Owing to limitations of space, image credits can be found on page 295.

Unless otherwise noted, charts illustrated by Matt Shirley.

While the author has made every effort to provide accurate telephone
numbers, internet addresses, and other contact information at the
time of publication, neither the publisher nor the author assumes any
responsibility for errors or for changes that occur after publication.
Further, the publisher does not have any control over and does not
assume any responsibility for author or third-party websites or
their content.

First published in the United States by Viking in 2021
First published in the United Kingdom by WH Allen in 2021

www.penguin.co.uk

A CIP catalogue record for this book is available from the British Library

ISBN 978075353886
TPB ISBN 978075353893

Book design by Daniel Lagin

Printed and bound in Great Britain by Clays Ltd, Elcograf S.p.A.

The authorised representative in the EEA is Penguin Random House
Ireland, Morrison Chambers, 32 Nassau Street, Dublin D02 YH68

Penguin Random House is committed to a sustainable future for our
business, our readers and our planet. This book is made from Forest
Stewardship Council® certified paper.



*To Kaan, Jeremy, and Bill,
My three oldest friends—one thing I won't rethink*

CONTENTS

Prologue | 1

PART I. Individual Rethinking

Updating Our Own Views

1. A Preacher, a Prosecutor, a Politician,
and a Scientist Walk into Your Mind | 15
2. The Armchair Quarterback and the Impostor:
Finding the Sweet Spot of Confidence | 33
3. The Joy of Being Wrong:
The Thrill of Not Believing Everything You Think | 55
4. The Good Fight Club:
The Psychology of Constructive Conflict | 77

PART II. Interpersonal Rethinking

Opening Other People's Minds

5. Dances with Foes: How to Win Debates
and Influence People | 97
6. Bad Blood on the Diamond: Diminishing Prejudice
by Destabilizing Stereotypes | 121
7. Vaccine Whisperers and Mild-Mannered Interrogators:
How the Right Kind of Listening Motivates People to
Change | 143

PART III. Collective Rethinking

Creating Communities of Lifelong Learners

8. Charged Conversations:

Depolarizing Our Divided Discussions | 163

9. Rewriting the Textbook:

Teaching Students to Question Knowledge | 185

10. That's Not the Way We've Always Done It:

Building Cultures of Learning at Work | 205

PART IV. Conclusion

**11. Escaping Tunnel Vision: Reconsidering Our Best-Laid Career
and Life Plans | 225**

Epilogue | 245

Actions for Impact | 251

Acknowledgments | 259

Notes | 265

Illustration Credits | 295

Index | 297

THINK AGAIN

Prologue



After a bumpy flight, fifteen men dropped from the Montana sky. They weren't skydivers. They were smokejumpers: elite wildland firefighters parachuting in to extinguish a forest fire started by lightning the day before. In a matter of minutes, they would be racing for their lives.

The smokejumpers landed near the top of Mann Gulch late on a scorching August afternoon in 1949. With the fire visible across the gulch, they made their way down the slope toward the Missouri River. Their plan was to dig a line in the soil around the fire to contain it and direct it toward an area where there wasn't much to burn.

After hiking about a quarter mile, the foreman, Wagner Dodge, saw that the fire had leapt across the gulch and was heading straight at them. The flames stretched as high as 30 feet in the air. Soon the fire would be blazing fast enough to cross the length of two football fields in less than a minute.

By 5:45 p.m. it was clear that even containing the fire was off the table. Realizing it was time to shift gears from fight to flight, Dodge immediately turned the crew around to run back up the slope. The smokejumpers had to bolt up an extremely steep incline, through knee-high

grass on rocky terrain. Over the next eight minutes they traveled nearly 500 yards, leaving the top of the ridge less than 200 yards away.

With safety in sight but the fire swiftly advancing, Dodge did something that baffled his crew. Instead of trying to outrun the fire, he stopped and bent over. He took out a matchbook, started lighting matches, and threw them into the grass. “We thought he must have gone nuts,” one later recalled. “With the fire almost on our back, what the hell is the boss doing lighting another fire in front of us?” He thought to himself: *That bastard Dodge is trying to burn me to death.* It’s no surprise that the crew didn’t follow Dodge when he waved his arms toward his fire and yelled, “Up! Up this way!”

What the smokejumpers didn’t realize was that Dodge had devised a survival strategy: he was building an escape fire. By burning the grass ahead of him, he cleared the area of fuel for the wildfire to feed on. He then poured water from his canteen onto his handkerchief, covered his mouth with it, and lay facedown in the charred area for the next fifteen minutes. As the wildfire raged directly above him, he survived in the oxygen close to the ground.

Tragically, twelve of the smokejumpers perished. A pocket watch belonging to one of the victims was later found with the hands melted at 5:56 p.m.

Why did only three of the smokejumpers survive? Physical fitness might have been a factor; the other two survivors managed to outrun the fire and reach the crest of the ridge. But Dodge prevailed because of his mental fitness.



WHEN PEOPLE REFLECT on what it takes to be mentally fit, the first idea that comes to mind is usually intelligence. The smarter you are, the more complex the problems you can solve—and the faster you can solve them. Intelligence is traditionally viewed as the ability to think and learn. Yet in a turbulent world, there’s another set of cognitive skills that might matter more: the ability to rethink and unlearn.

Imagine that you've just finished taking a multiple-choice test, and you start to second-guess one of your answers. You have some extra time—should you stick with your first instinct or change it?

About three quarters of students are convinced that revising their answer will *hurt* their score. Kaplan, the big test-prep company, once warned students to “exercise great caution if you decide to change an answer. Experience indicates that many students who change answers change to the wrong answer.”

With all due respect to the lessons of experience, I prefer the rigor of evidence. When a trio of psychologists conducted a comprehensive review of thirty-three studies, they found that in every one, the majority of answer revisions were from wrong to right. This phenomenon is known as the first-instinct fallacy.

In one demonstration, psychologists counted eraser marks on the exams of more than 1,500 students in Illinois. Only a quarter of the changes were from right to wrong, while half were from wrong to right. I've seen it in my own classroom year after year: my students' final exams have surprisingly few eraser marks, but those who do rethink their first answers rather than staying anchored to them end up improving their scores.

Of course, it's possible that second answers aren't inherently better; they're only better because students are generally so reluctant to switch that they only make changes when they're fairly confident. But recent studies point to a different explanation: it's not so much changing your answer that improves your score as considering whether you should change it.

We don't just hesitate to rethink our answers. We hesitate at the very idea of rethinking. Take an experiment where hundreds of college students were randomly assigned to learn about the first-instinct fallacy. The speaker taught them about the value of changing their minds and gave them advice about when it made sense to do so. On their next two tests, they still weren't any more likely to revise their answers.

Part of the problem is cognitive laziness. Some psychologists point out that we're mental misers: we often prefer the ease of hanging on to old views over the difficulty of grappling with new ones. Yet there are also deeper forces behind our resistance to rethinking. Questioning ourselves makes the world more unpredictable. It requires us to admit that the facts may have changed, that what was once right may now be wrong. Reconsidering something we believe deeply can threaten our identities, making it feel as if we're losing a part of ourselves.

Rethinking isn't a struggle in every part of our lives. When it comes to our possessions, we update with fervor. We refresh our wardrobes when they go out of style and renovate our kitchens when they're no longer in vogue. When it comes to our knowledge and opinions, though, we tend to stick to our guns. Psychologists call this seizing and freezing. We favor the comfort of conviction over the discomfort of doubt, and we let our beliefs get brittle long before our bones. We laugh at people who still use Windows 95, yet we still cling to opinions that we formed in 1995. We listen to views that make us feel good, instead of ideas that make us think hard.

At some point, you've probably heard that if you drop a frog in a pot of scalding hot water, it will immediately leap out. But if you drop the frog in lukewarm water and gradually raise the temperature, the frog will die. It lacks the ability to rethink the situation, and doesn't realize the threat until it's too late.

I did some research on this popular story recently and discovered a wrinkle: it isn't true.

Tossed into the scalding pot, the frog will get burned badly and may or may not escape. The frog is actually better off in the slow-boiling pot: it will leap out as soon as the water starts to get uncomfortably warm.

It's not the frogs who fail to reevaluate. It's us. Once we hear the story and accept it as true, we rarely bother to question it.



AS THE MANN GULCH WILDFIRE raced toward them, the smokejumpers had a decision to make. In an ideal world, they would have had enough time to pause, analyze the situation, and evaluate their options. With the fire raging less than 100 yards behind, there was no chance to stop and think. “On a big fire there is no time and no tree under whose shade the boss and the crew can sit and have a Platonic dialogue about a blowup,” scholar and former firefighter Norman Maclean wrote in *Young Men and Fire*, his award-winning chronicle of the disaster. “If Socrates had been foreman on the Mann Gulch fire, he and his crew would have been cremated while they were sitting there considering it.”

Dodge didn’t survive as a result of thinking slower. He made it out alive thanks to his ability to rethink the situation faster. Twelve smokejumpers paid the ultimate price because Dodge’s behavior didn’t make sense to them. They couldn’t rethink their assumptions in time.

Under acute stress, people typically revert to their automatic, well-learned responses. That’s evolutionarily adaptive—as long as you find yourself in the same kind of environment in which those reactions were necessary. If you’re a smokejumper, your well-learned response is to put out a fire, not start another one. If you’re fleeing for your life, your well-learned response is to run away from the fire, not toward it. In normal circumstances, those instincts might save your life. Dodge survived Mann Gulch because he swiftly overrode both of those responses.

No one had taught Dodge to build an escape fire. He hadn’t even heard of the concept; it was pure improvisation. Later, the other two survivors testified under oath that nothing resembling an escape fire was covered in their training. Many experts had spent their entire careers studying wildfires without realizing it was possible to stay alive by burning a hole through the blaze.

When I tell people about Dodge’s escape, they usually marvel at his resourcefulness under pressure. *That was genius!* Their astonishment quickly melts into dejection as they conclude that this kind of eureka moment is out of reach for mere mortals. *I got stumped by my fourth grader’s*

math homework. Yet most acts of rethinking don't require any special skill or ingenuity.

Moments earlier at Mann Gulch, the smokejumpers missed another opportunity to think again—and that one was right at their fingertips. Just before Dodge started tossing matches into the grass, he ordered his crew to drop their heavy equipment. They had spent the past eight minutes racing uphill while still carrying axes, saws, shovels, and 20-pound packs.

If you're running for your life, it might seem obvious that your first move would be to drop anything that might slow you down. For firefighters, though, tools are essential to doing their jobs. Carrying and taking care of equipment is deeply ingrained in their training and experience. It wasn't until Dodge gave his order that most of the smokejumpers set down their tools—and even then, one firefighter hung on to his shovel until a colleague took it out of his hands. If the crew had abandoned their tools sooner, would it have been enough to save them?

We'll never know for certain, but Mann Gulch wasn't an isolated incident. Between 1990 and 1995 alone, a total of twenty-three wildland firefighters perished trying to outrace fires uphill even though dropping their heavy equipment could have made the difference between life and death. In 1994, on Storm King Mountain in Colorado, high winds caused a fire to explode across a gulch. Running uphill on rocky ground with safety in view just 200 feet away, fourteen smokejumpers and wildland firefighters—four women, ten men—lost their lives.

Later, investigators calculated that without their tools and backpacks, the crew could have moved 15 to 20 percent faster. "Most would have lived had they simply dropped their gear and run for safety," one expert wrote. Had they "dropped their packs and tools," the U.S. Forest Service concurred, "the firefighters would have reached the top of the ridge before the fire."

It's reasonable to assume that at first the crew might have been running on autopilot, not even aware that they were still carrying their packs

and tools. “About three hundred yards up the hill,” one of the Colorado survivors testified, “I then realized I still had my saw over my shoulder!” Even after making the wise decision to ditch the 25-pound chainsaw, he wasted valuable time: “I irrationally started looking for a place to put it down where it wouldn’t get burned. . . . I remember thinking, ‘I can’t believe I’m putting down my saw.’” One of the victims was found wearing his backpack, still clutching the handle of his chainsaw. Why would so many firefighters cling to a set of tools even though letting go might save their lives?

If you’re a firefighter, dropping your tools doesn’t just require you to unlearn habits and disregard instincts. Discarding your equipment means admitting failure and shedding part of your identity. You have to rethink your goal in your job—and your role in life. “Fires are not fought with bodies and bare hands, they are fought with tools that are often distinctive trademarks of firefighters,” organizational psychologist Karl Weick explains: “They are the firefighter’s reason for being deployed in the first place. . . . Dropping one’s tools creates an existential crisis. Without my tools, who am I?”

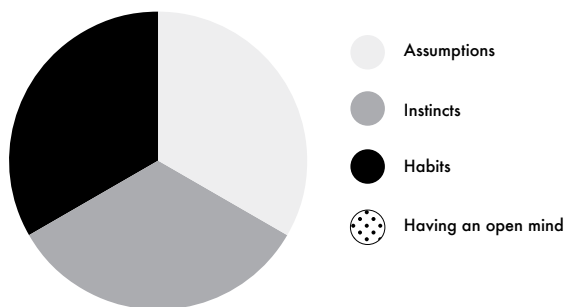
Wildland fires are relatively rare. Most of our lives don’t depend on split-second decisions that force us to reimagine our tools as a source of danger and a fire as a path to safety. Yet the challenge of rethinking assumptions is surprisingly common—maybe even common to all humans.

We all make the same kind of mistakes as smokejumpers and firefighters, but the consequences are less dire and therefore often go unnoticed. Our ways of thinking become habits that can weigh us down, and we don’t bother to question them until it’s too late. Expecting your squeaky brakes to keep working until they finally fail on the freeway. Believing the stock market will keep going up after analysts warn of an impending real estate bubble. Assuming your marriage is fine despite your partner’s increasing emotional distance. Feeling secure in your job even though some of your colleagues have been laid off.

This book is about the value of rethinking. It's about adopting the kind of mental flexibility that saved Wagner Dodge's life. It's also about succeeding where he failed: encouraging that same agility in others.

You may not carry an ax or a shovel, but you do have some cognitive tools that you use regularly. They might be things you know, assumptions you make, or opinions you hold. Some of them aren't just part of your job—they're part of your sense of self.

TOOLS WE CLING TO



Consider a group of students who built what has been called Harvard's first online social network. Before they arrived at college, they had already connected more than an eighth of the entering freshman class in an "e-group." But once they got to Cambridge, they abandoned the network and shut it down. Five years later Mark Zuckerberg started Facebook on the same campus.

From time to time, the students who created the original e-group have felt some pangs of regret. I know, because I was one of the cofounders of that group.

Let's be clear: I never would have had the vision for what Facebook became. In hindsight, though, my friends and I clearly missed a series

of chances for rethinking the potential of our platform. Our first instinct was to use the e-group to make new friends for ourselves; we didn't consider whether it would be of interest to students at other schools or in life beyond school. Our well-learned habit was to use online tools to connect with people far away; once we lived within walking distance on the same campus, we figured we no longer needed the e-group. Although one of the cofounders was studying computer science and another early member had already founded a successful tech startup, we made the flawed assumption that an online social network was a passing hobby, not a huge part of the future of the internet. Since I didn't know how to code, I didn't have the tools to build something more sophisticated. Launching a company wasn't part of my identity anyway: I saw myself as a college freshman, not a budding entrepreneur.

Since then, rethinking has become central to my sense of self. I'm a psychologist but I'm not a fan of Freud, I don't have a couch in my office, and I don't do therapy. As an organizational psychologist at Wharton, I've spent the past fifteen years researching and teaching evidence-based management. As an entrepreneur of data and ideas, I've been called by organizations like Google, Pixar, the NBA, and the Gates Foundation to help them reexamine how they design meaningful jobs, build creative teams, and shape collaborative cultures. My job is to think again about how we work, lead, and live—and enable others to do the same.

I can't think of a more vital time for rethinking. As the coronavirus pandemic unfolded, many leaders around the world were slow to rethink their assumptions—first that the virus wouldn't affect their countries, next that it would be no deadlier than the flu, and then that it could only be transmitted by people with visible symptoms. The cost in human life is still being tallied.

In the past year we've all had to put our mental pliability to the test. We've been forced to question assumptions that we had long taken for granted: That it's safe to go to the hospital, eat in a restaurant, and hug

our parents or grandparents. That live sports will always be on TV and most of us will never have to work remotely or homeschool our kids. That we can get toilet paper and hand sanitizer whenever we need them.

In the midst of the pandemic, multiple acts of police brutality led many people to rethink their views on racial injustice and their roles in fighting it. The senseless deaths of three Black citizens—George Floyd, Breonna Taylor, and Ahmaud Arbery—left millions of white people realizing that just as sexism is not only a women’s issue, racism is not only an issue for people of color. As waves of protest swept the nation, across the political spectrum, support for the Black Lives Matter movement climbed nearly as much in the span of two weeks as it had in the previous two years. Many of those who had long been unwilling or unable to acknowledge it quickly came to grips with the harsh reality of systemic racism that still pervades America. Many of those who had long been silent came to reckon with their responsibility to become antiracists and act against prejudice.

Despite these shared experiences, we live in an increasingly divisive time. For some people a single mention of kneeling during the national anthem is enough to end a friendship. For others a single ballot at a voting booth is enough to end a marriage. Calcified ideologies are tearing American culture apart. Even our great governing document, the U.S. Constitution, allows for amendments. What if we were quicker to make amendments to our own mental constitutions?

My aim in this book is to explore how rethinking happens. I sought out the most compelling evidence and some of the world’s most skilled rethinkers. The first section focuses on opening our own minds. You’ll find out why a forward-thinking entrepreneur got trapped in the past, why a long-shot candidate for public office came to see impostor syndrome as an advantage, how a Nobel Prize-winning scientist embraces the joy of being wrong, how the world’s best forecasters update their views, and how an Oscar-winning filmmaker has productive fights.

The second section examines how we can encourage other people to

think again. You'll learn how an international debate champion wins arguments and a Black musician persuades white supremacists to abandon hate. You'll discover how a special kind of listening helped a doctor open parents' minds about vaccines, and helped a legislator convince a Ugandan warlord to join her in peace talks. And if you're a Yankees fan, I'm going to see if I can convince you to root for the Red Sox.

The third section is about how we can create communities of lifelong learners. In social life, a lab that specializes in difficult conversations will shed light on how we can communicate better about polarizing issues like abortion and climate change. In schools, you'll find out how educators teach kids to think again by treating classrooms like museums, approaching projects like carpenters, and rewriting time-honored textbooks. At work, you'll explore how to build learning cultures with the first Hispanic woman in space, who took the reins at NASA to prevent accidents after space shuttle *Columbia* disintegrated. I close by reflecting on the importance of reconsidering our best-laid plans.

It's a lesson that firefighters have learned the hard way. In the heat of the moment, Wagner Dodge's impulse to drop his heavy tools and take shelter in a fire of his own making made the difference between life and death. But his inventiveness wouldn't have even been necessary if not for a deeper, more systemic failure to think again. The greatest tragedy of Mann Gulch is that a dozen smokejumpers died fighting a fire that never needed to be fought.

As early as the 1880s, scientists had begun highlighting the important role that wildfires play in the life cycles of forests. Fires remove dead matter, send nutrients into the soil, and clear a path for sunlight. When fires are suppressed, forests are left too dense. The accumulation of brush, dry leaves, and twigs becomes fuel for more explosive wildfires.

Yet it wasn't until 1978 that the U.S. Forest Service put an end to its policy that every fire spotted should be extinguished by 10:00 a.m. the following day. The Mann Gulch wildfire took place in a remote area where human lives were not at risk. The smokejumpers were called in anyway

because no one in their community, their organization, or their profession had done enough to question the assumption that wildfires should not be allowed to run their course.

This book is an invitation to let go of knowledge and opinions that are no longer serving you well, and to anchor your sense of self in flexibility rather than consistency. If you can master the art of rethinking, I believe you'll be better positioned for success at work and happiness in life. Thinking again can help you generate new solutions to old problems and revisit old solutions to new problems. It's a path to learning more from the people around you and living with fewer regrets. A hallmark of wisdom is knowing when it's time to abandon some of your most treasured tools—and some of the most cherished parts of your identity.

PART I

Individual Rethinking

Updating Our Own Views

CHAPTER 1

A Preacher, a Prosecutor, a Politician, and a Scientist Walk into Your Mind



Progress is impossible without change; and those who
cannot change their minds cannot change anything.

—GEORGE BERNARD SHAW

You probably don't recognize his name, but Mike Lazaridis has had a defining impact on your life. From an early age, it was clear that Mike was something of an electronics wizard. By the time he turned four, he was building his own record player out of Legos and rubber bands. In high school, when his teachers had broken TVs, they called Mike to fix them. In his spare time, he built a computer and designed a better buzzer for high school quiz-bowl teams, which ended up paying for his first year of college. Just months before finishing his electrical engineering degree, Mike did what so many great entrepreneurs of his era would do: he dropped out of college. It was time for this son of immigrants to make his mark on the world.

Mike's first success came when he patented a device for reading the bar codes on movie film, which was so useful in Hollywood that

it won an Emmy and an Oscar for technical achievement. That was small potatoes compared to his next big invention, which made his firm the fastest-growing company on the planet. Mike's flagship device quickly attracted a cult following, with loyal customers ranging from Bill Gates to Christina Aguilera. "It's literally changed my life," Oprah Winfrey gushed. "I cannot live without this." When he arrived at the White House, President Obama refused to relinquish his to the Secret Service.

Mike Lazaridis dreamed up the idea for the BlackBerry as a wireless communication device for sending and receiving emails. As of the summer of 2009, it accounted for nearly half of the U.S. smartphone market. By 2014, its market share had plummeted to less than 1 percent.

When a company takes a nosedive like that, we can never pinpoint a single cause of its downfall, so we tend to anthropomorphize it: *BlackBerry failed to adapt*. Yet adapting to a changing environment isn't something a company does—it's something *people* do in the multitude of decisions they make every day. As the cofounder, president, and co-CEO, Mike was in charge of all the technical and product decisions on the BlackBerry. Although his thinking may have been the spark that ignited the smartphone revolution, his struggles with rethinking ended up sucking the oxygen out of his company and virtually extinguishing his invention. Where did he go wrong?

Most of us take pride in our knowledge and expertise, and in staying true to our beliefs and opinions. That makes sense in a stable world, where we get rewarded for having conviction in our ideas. The problem is that we live in a rapidly changing world, where we need to spend as much time rethinking as we do thinking.

Rethinking is a skill set, but it's also a mindset. We already have many of the mental tools we need. We just have to remember to get them out of the shed and remove the rust.

SECOND THOUGHTS

With advances in access to information and technology, knowledge isn't just increasing. It's increasing at an increasing rate. In 2011, you consumed about five times as much information per day as you would have just a quarter century earlier. As of 1950, it took about fifty years for knowledge in medicine to double. By 1980, medical knowledge was doubling every seven years, and by 2010, it was doubling in half that time. The accelerating pace of change means that we need to question our beliefs more readily than ever before.

This is not an easy task. As we sit with our beliefs, they tend to become more extreme and more entrenched. *I'm still struggling to accept that Pluto may not be a planet.* In education, after revelations in history and revolutions in science, it often takes years for a curriculum to be updated and textbooks to be revised. Researchers have recently discovered that we need to rethink widely accepted assumptions about such subjects as Cleopatra's roots (her father was Greek, not Egyptian, and her mother's identity is unknown); the appearance of dinosaurs (paleontologists now think some tyrannosaurs had colorful feathers on their backs); and what's required for sight (blind people have actually trained themselves to "see"—sound waves can activate the visual cortex and create representations in the mind's eye, much like how echolocation helps bats navigate in the dark).^{*} Vintage records, classic cars, and antique clocks might be valuable collectibles, but outdated facts are mental fossils that are best abandoned.

^{*} For my part, I had assumed the phrase "blowing smoke up your arse" came from people gifting cigars to someone they wanted to impress, so you can imagine how intrigued I was when my wife told me its real origin: In the 1700s, it was common practice to revive drowning victims with tobacco enemas, literally blowing smoke up their behinds. Only later did they learn that it was toxic to the cardiac system.

We're swift to recognize when other people need to think again. We question the judgment of experts whenever we seek out a second opinion on a medical diagnosis. Unfortunately, when it comes to our own knowledge and opinions, we often favor *feeling* right over *being* right. In everyday life, we make many diagnoses of our own, ranging from whom we hire to whom we marry. We need to develop the habit of forming our own second opinions.

Imagine you have a family friend who's a financial adviser, and he recommends investing in a retirement fund that isn't in your employer's plan. You have another friend who's fairly knowledgeable about investing, and he tells you that this fund is risky. What would you do?

When a man named Stephen Greenspan found himself in that situation, he decided to weigh his skeptical friend's warning against the data available. His sister had been investing in the fund for several years, and she was pleased with the results. A number of her friends had been, too; although the returns weren't extraordinary, they were consistently in the double digits. The financial adviser was enough of a believer that he had invested his own money in the fund. Armed with that information, Greenspan decided to go forward. He made a bold move, investing nearly a third of his retirement savings in the fund. Before long, he learned that his portfolio had grown by 25 percent.

Then he lost it all overnight when the fund collapsed. It was the Ponzi scheme managed by Bernie Madoff.

Two decades ago my colleague Phil Tetlock discovered something peculiar. As we think and talk, we often slip into the mindsets of three different professions: preachers, prosecutors, and politicians. In each of these modes, we take on a particular identity and use a distinct set of tools. We go into preacher mode when our sacred beliefs are in jeopardy: we deliver sermons to protect and promote our ideals. We enter prosecutor mode when we recognize flaws in other people's reasoning: we marshal arguments to prove them wrong and win our case. We shift into politician mode when we're seeking to win over an audience: we campaign

and lobby for the approval of our constituents. The risk is that we become so wrapped up in preaching that we're right, prosecuting others who are wrong, and politicking for support that we don't bother to rethink our own views.

When Stephen Greenspan and his sister made the choice to invest with Bernie Madoff, it wasn't because they relied on just one of those mental tools. All three modes together contributed to their ill-fated decision. When his sister told him about the money she and her friends had made, she was preaching about the merits of the fund. Her confidence led Greenspan to prosecute the friend who warned him against investing, deeming the friend guilty of "knee-jerk cynicism." Greenspan was in politician mode when he let his desire for approval sway him toward a yes—the financial adviser was a family friend whom he liked and wanted to please.

Any of us could have fallen into those traps. Greenspan says that he should've known better, though, because he happens to be an expert on gullibility. When he decided to go ahead with the investment, he had almost finished writing a book on why we get duped. Looking back, he wishes he had approached the decision with a different set of tools. He might have analyzed the fund's strategy more systematically instead of simply trusting in the results. He could have sought out more perspectives from credible sources. He would have experimented with investing smaller amounts over a longer period of time before gambling so much of his life's savings.

That would have put him in the mode of a scientist.

A DIFFERENT PAIR OF GOGGLES

If you're a scientist by trade, rethinking is fundamental to your profession. You're paid to be constantly aware of the limits of your understanding. You're expected to doubt what you know, be curious about what you