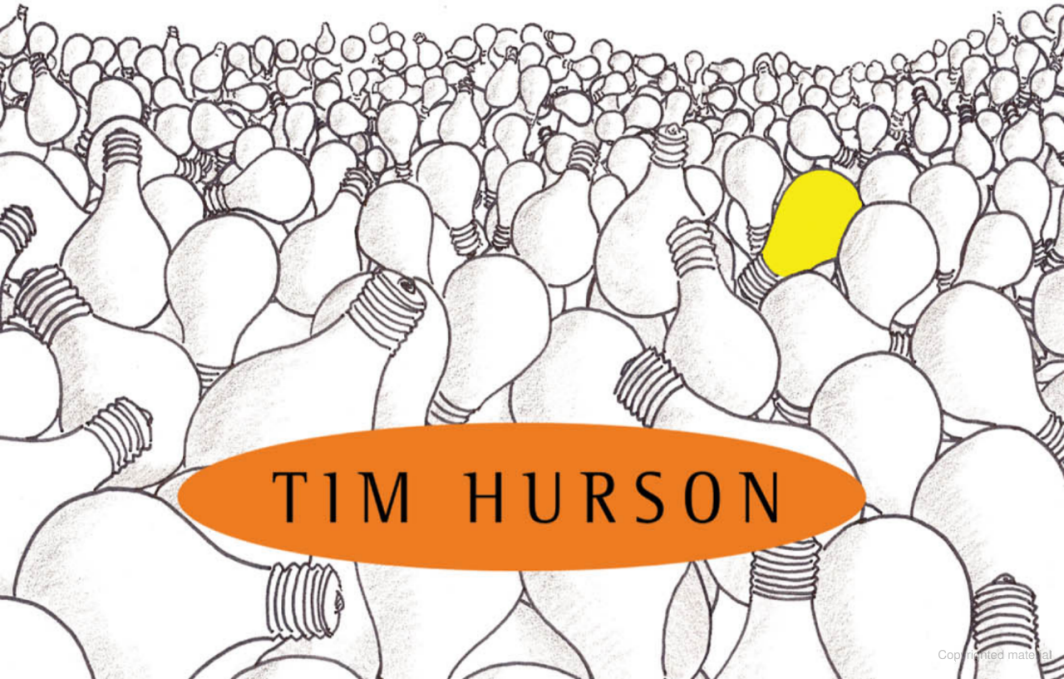
AN INNOVATOR'S GUIDE TO PRODUCTIVE THINKING

THINK BETTER

(your company's future depends on it... and so does yours)



TIM HURSON

AN INNOVATOR'S GUIDE TO PRODUCTIVE THINKING

THINK BETTER

(your company's future depends on it . . . and so does yours)

TIM HURSON

New York Chicago San Francisco
Lisbon London Madrid Mexico City
Milan New Delhi San Juan Seoul
Singapore Sydney Toronto

The McGraw-Hill Companies

ISBN: 978-0-07-175475-0

MHID: 0-07-175475-X

The material in this eBook also appears in the print version of this title: ISBN: 978-0-07-149493-9, MHID: 0-07-149493-6.

CONTENTS

Preface xi

Acknowledgments xv

PART 1: Productive Thinking in Context

Chapter 1 Why Think Better 3

Chapter 2 Monkey Mind, Gator Brain, and the Elephant's Tether 17

PART 2: Productive Thinking in Principle

Chapter 3 *Kaizen* vs. *Tenkaizen* 35

Chapter 4 Stay in the Question 53

Chapter 5 The Miracle of the Third Third 67

PART 3: Productive Thinking in Theory

Chapter 6 Productive Thinking by Design 85

Chapter 7 **Step 1:** What's Going On? *Puzzles, Probes, Possibilities* 101

Chapter 8 **Step 2:** What's Success? *The Future Pull Principle* 125

Chapter 9 **Step 3:** What's the Question? *Great Answer (Wrong Question)* 143

Chapter 10 **Step 4:** Generate Answers *Ten Thousand Failures* 159

Chapter 11 **Step 5:** Forge the Solution *Masamune's Katana* 177

Chapter 12 **Step 6:** Align Resources *Here Be Lions* 195

PART 4: Productive Thinking in Practice

Chapter 13 Productive Thinking Redux 215

Chapter 14 Training vs. Entraining 233

Appendix: Productive Thinking in Action

Six Step Case Study, Jetways 243

Glossary 261

Notes 269

Bibliography 277

Index 283

About the Author 293

PREFACE

Although I didn't realize it at the time, I began working on this book about 15 years ago. I was involved in an online discussion on the subject of creativity. One of the participants was adamant that creativity is an innate quality that cannot be taught: Either you have it or you don't. I had a different view. I had been in the creativity business my entire working life, starting as a scriptwriter on documentary films and eventually becoming creative director of my own marketing firm. I had read books by James L. Adams, Edward de Bono, and Roger von Oech and was convinced that creativity, like other thinking skills, is something that can be learned and developed. But I had no direct proof.

That discussion led me on a journey that refocused my life. I attended seminars, hunted for books, and experimented. Eventually, I came in contact with the Creative Education Foundation (CEF). CEF had been launched in 1954 by Alex Osborn, the advertising executive who pioneered the concept of brainstorming, and Sid Parnes, a brilliant young psychology professor. I joined the foundation mainly to get the 10 percent discount on its extensive book list. From its mailings, I learned that CEF held an annual conference called the Creative Problem Solving Institute (CPSI). I decided to go.

CPSI (pronounced "sip-see") consisted of numerous concurrent sessions, ranging from serious academic dissertations to arts-related programs to some pretty off-the-wall presentations. Its main offering, though, was a methodology that Osborn and Parnes had developed over the years called the Creative Problem Solving Process (CPS). Built on Osborn's original rules for brainstorming, CPS proposed that the main thing you have to do to be more creative is to *not* think, that the most productive thing you can do is simply to generate lists of ideas—ideas about causes of problems, ideas about where you want to go once you solve those problems, and ideas about how to get there. Once you've generated those ideas, no matter how far-fetched they may be, you return to your lists and *only then* apply critical thinking to evaluate them,

choose the most promising ones, and develop them further. It seemed too simple.

I developed a kind of love-hate relationship with CPS. I thought it had potential, but for me, it focused too much on the generation of ideas and not enough on the rigorous, critical evaluation of them. I needed to learn more. I benefited greatly from long and fascinating conversations with Sid Parnes, who became my mentor and a dear friend, as well as with many other CPS practitioners. I also explored a variety of engineering-based problem-solving systems, among them a methodology called Integrated Definition (IDEF), which was used by NASA. I culled some of the more rigorous approaches from those systems and wove them into the core CPS process. In facilitating strategy sessions with clients, I experimented with and modified what I had learned. Slowly, what began to emerge was a new model for thinking more productively: a disciplined, repeatable way for people to generate more ideas, better ideas, more of the time.

The result of that work is the think^{x} Productive Thinking Model that my colleagues and I use to facilitate corporate innovation sessions and train people to think more creatively and effectively. The think^{x} model is built firmly on the foundation of the Osborn-Parnes Creative Problem Solving Process, with numerous additions based on my own experience and the invaluable insights and contributions of my colleagues, especially my business partner, Kristen Peterson.

In my work with businesses and not-for-profit organizations, I have seen the think^{x} model and its underlying principles foster profound changes in the way individuals and organizations operate. This book gives me the opportunity to introduce the model and its potential benefits to a wider audience.

The premise of *Think Better* is that success in our business, professional, and personal lives is less a matter of what we know than of how we think. If we can develop the thinking skills to generate more options and then evaluate those options more effectively, we can all live richer, fuller lives—and so can the people around us.

Everybody talks about creativity and innovation these days, but very few actually know how to put them into practice. The think^{x} model shines a bright light on the productive thinking strategies that people we celebrate for their creativity have been using for centuries. I think you'll find that productive thinking is a game changer. It brings the skills to

think better out of the closet and presents them in a way that makes them easy for anyone to grasp and use—so they can think better, work better, and do better in every aspect of their lives.

The good news is that productive thinking is a skill that anyone can learn and develop. Regardless of your starting point, you *can* learn to use your mind better. It's not much different from driving a car. Two people can drive the same vehicle. One does so adequately, getting reasonable mileage and performance. The other drives it superbly by applying learned skills to get the best mileage and performance possible. Will some people always be more creative than others? Of course. But whatever vehicle you start with, whether it's a BMW or a Skoda, you can learn to use it better.

Think Better is not an academic study. My company, think^{x} intellectual capital, works with real organizations that face real-world issues. One of the difficulties in trying to illustrate the concepts in this book is the type of work we do for our clients. For almost any organization, it is impossible to separate issues of innovation from issues of competitiveness. As a result, much of the work we do involves proprietary information that is inappropriate to reveal. In providing examples and illustrations in the following pages, I have tried as much as possible to use actual cases without revealing confidential information or the names of the companies involved.

Think Better is divided into 14 chapters and an appendix.

Chapter 1, "Why Think Better," presents a case for how we can all benefit from thinking better and introduces the concept of the unexpected connection, which is threaded throughout the book.

Chapter 2, "Monkey Mind, Gator Brain, and the Elephant's Tether," discusses the barriers to productive thinking and the reasons we don't think very creatively—or effectively—most of the time.

Chapter 3, "*Kaizen* vs. *Tenkaizen*," introduces and contrasts the concepts of productive thinking and reproductive thinking and suggests how they can be applied to organizational change.

Chapter 4, "Stay in the Question," discusses the tendency to jump too quickly to conclusions rather than taking the time to explore questions fully.

Chapter 5, "The Miracle of the Third Third," contrasts good and bad brainstorming and explains why the most creative ideas usually come toward the end of brainstorming sessions rather than at the beginning.

Chapter 6, "Productive Thinking by Design," provides an introduction to and overview of the six-step think^{x} model.

Chapters 7 through 12 provide detailed explanations of each of the six steps of the model, with examples and case studies.

Chapter 7, "Step 1: What's Going On?" explores the issue or issues that need resolution.

Chapter 8, "Step 2: What's Success?" establishes criteria for success.

Chapter 9, "Step 3: What's the Question?" defines the real problem to be solved.

Chapter 10, "Step 4: Generate Answers," proposes initial ideas for solutions.

Chapter 11, "Step 5: Forge the Solution," transforms the initial ideas into powerful solutions.

Chapter 12, "Step 6: Align Resources," identifies and assigns resources to implement the solution.

Chapter 13, "Productive Thinking Redux," recaps the model and offers several tips about using its various steps and tools.

Chapter 14, "Training vs. Entraining," suggests four essential criteria for developing productive thinking skills and embedding productive thinking in organizational cultures.

The back matter includes a glossary of productive thinking terms and key tools as well as a comprehensive example of the Productive Thinking Model in action.

I hope that by the end of the book you will have a solid appreciation of productive thinking. I hope, too, that you will be motivated to put it to the test so that you can experience for yourself how this simple but powerful model can help you understand more clearly, think more creatively, and plan more effectively.

The think^{x} Productive Thinking Model is straightforward to learn, practical to implement, and it works. With the right attitude, the right approach, and the right skills, we can all think better!

ACKNOWLEDGMENTS

There are many people to thank for this book.

First, I want to thank all my consulting partners and associates at think^{x} intellectual capital for their support and enthusiasm. First and foremost, they are my friends. They have also been evangelists and ambassadors who have spread the word about productive thinking by delivering facilitation, training, and coaching to clients around the world. Without these people the think^{x} Productive Thinking Model would have no legs. I owe a huge debt of gratitude to them all. In the United States they are Paul Groncki and Clare Dus (New York), Janeen Whalen (Los Angeles), Russ Schoen (Chicago), Steve Fox (Boston), Stanley Young (Sacramento), and Julieta Parra-McPherson (Omaha). In Europe they are Patrizia Sorgiovanni and Scott Middleton (London), Tim Dunne and Maggie Dugan (Paris), and Matteo Catullo and Paolo Sbuttoni (Milan). In Canada they are Dan Bigonesse, Alison Cohen, Marc Hurwitz, Glenn Pothier, and John Sedgwick.

I have had the good fortune to meet hundreds of people who have inspired me with their intelligence, their creativity, their compassion, and their courage. Neither this book nor the work leading up to it would have been possible without their examples.

George Langler and Ralf Hotchkiss, whose story appears in Chapter 1, both influenced me in ways they can never know. No expression of appreciation could be adequate. Rafe Martin, Tom Friedman, Tom Stoyan, Robin Wall, Michael Jacot, Ken McLeod, and Peter Lloyd each taught me that thinking better is a function of using both mind and heart. Cindy Krysac, girl physicist, taught me the value of persistence. Doug Scott taught me how to write. My good friend Roger von Oech, whom I first met in a book, later online, and eventually by phone—but whom I have yet to meet in the flesh—taught me that serious writing can be fun writing. My former business partner Eric Young taught me the importance of thinking it through and writing it down. My uncle Harry Hurwitz, the most energetically creative person

I have ever known, taught me that we are all inexhaustible wells of new ideas.

Thanks to Maria Shinoto for her invaluable assistance in helping me understand the Japanese *kanji* construction for the term *tenkaizen*, which plays an important role in my thinking. Thanks also to Robert Bick for urging me to develop the Productive Thinking Model and for helping me explore its concepts during the early stages.

Very few of the ideas in this book would have been possible without the hundreds of hours of conversations I have had with a very special group of people: the professionals who teach at the many global creativity and innovation conferences with which I am involved. These people have shared their insights and experiences with me and also become fast friends. For both of those gifts, I wish to thank Guy Aznar, René Bernèche, Laura Barbero, Alan Black, Kevin Byron, Jean Bystedt, Colette Chambon, Jeanne Chatigny, Ted Coulson, Nancylyn Davis, Dave Dilts, Mark Dodsworth, Lee Dunne, Newell Eaton, Bob Eckert, Gregg Fraley, John Frederick, Guido Galimberti, Bill Hartwell, Kitty Heusner, Magellan Horth, Anthony Hyatt, Clara Kluk, Hedria Lunken, Joe Miguez, Oliver MacDonald, Tom McMullen, Allie Middleton, Sandra Minnee, Liz Monroe Cook, Len Mozzi, Nancy Myers, Murli Nagasundaram, Kobus Neethling, Charlene Pasco, Jon Pearson, Frank Prince, Sjra Puts, Kanes Rajah, Doug Reid, Leslie Seabury, Tim Switalski, Guingo Sylwan, Andy Van Gundy, Harry Vardis, Jonathan Vehar, Ken Wall, Win Wenger, Jack Wolf, and Olwen Wolfe.

Very special thanks for the lessons they have taught me to Sid and Bea Parnes and to Jacquie Lowell, without whose invitation I would not have entered this wonderful community. Thanks to Jim Ridge, whose illustrations for this book bring productive thinking to life. Who would have imagined that a chance meeting in Buffalo, New York, could produce such a wonderful collaboration! *Think Better* would be much the poorer without Jim's creativity and dedication.

I also wish to thank my four children, Emily, Branwen, Peter, and Max Hurson, who put up with me for the year or so it's taken to write this book. You've been a wonderful support.

Finally, I need to express my deepest possible gratitude to four extraordinary women, each of whom helped give birth to *Think Better*.

First, my business partner, Kristen Peterson, who said she would do anything it took to free up my time so I could write this book. She did

that and more. Without her support, her strength, and her stamina, neither the think[x] model nor *Think Better* would exist. Thank you, Kristen.

Second, my editor, Leah Spiro, who was relentless in forcing me to be clear. The passages in *Think Better* that are lucid are probably the result of Leah's sharp pencil. Those that are opaque are almost certainly ones in which I didn't follow her advice.

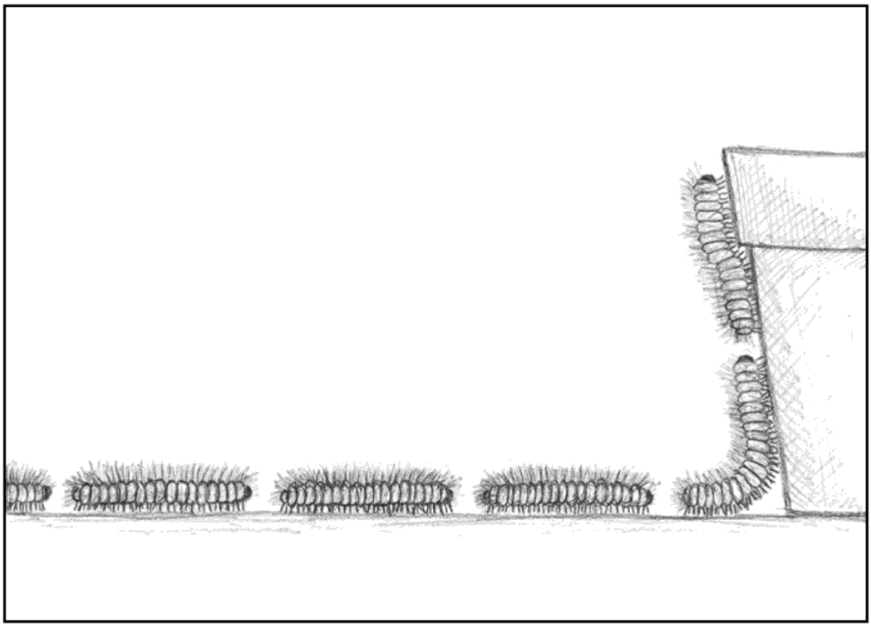
Third, my literary agent, Cathy Hemming. I will never cease to be grateful for the lovely bit of serendipity that brought us together. Cathy had faith that there was a book in me somewhere. I cannot express how much that faith means to me.

Last and most, my wife, Franca, who is infinitely more creative and intelligent than I could ever hope to be. She sweated through this book every bit as much as I did. She was my second editor, my organizer, my supporter, my advisor, at times my goad, and always, always my friend. Thank you, Franca.

This page intentionally left blank

CHAPTER 1

Why Think Better



Imagination is the beginning of creation:
you imagine what you desire,
you will what you imagine,
and at last you create what you will.

George Bernard Shaw

This book is about creating the future. It's about a way to see more clearly, think more creatively, and plan more effectively. It's about thinking better, working better, and doing better in every area of your life. All of us have the potential to think better. The first step is to free ourselves from the unproductive thinking patterns that hold us back.

There's an interesting little insect known as the processionary caterpillar that can teach us a lot about the stifling habits of everyday thinking. Processionaries got their name because of their distinctive behavior. When they leave their nests to forage for food, they travel in a line, like elephants in a circus, head to tail, head to tail. The lead caterpillar spins a fine trail of silk as it crawls along. The next caterpillar in line walks along the silk trail and adds its own. Processionaries can form trains hundreds of creatures long as they march through the forest.

There's nothing particularly distinctive about the lead caterpillar: It just happens to be at the front. It walks along for a while, pausing and raising its head occasionally, trying to sense which way the nearest food source is, and then continues the trek. If you remove the lead caterpillar, the second in line will take up the scouting duties without hesitation. The trailing caterpillars don't seem to care about the change in leadership.

Processionaries fascinated one of the world's great naturalists, Jean Henri Fabre, who is considered by many the father of modern entomology. He spent years studying them, both in his green house and in their natural environment. Fabre was an observer. He took nothing as given, nothing for granted, made no assumptions. He once wrote that his scientific credo was "the method of ignorance. I read very little. . . . I know nothing. So much the better: my queries will be all the freer, now in this direction, now in the opposite, according to the lights obtained."[1]

Fabre was curious to see how powerful the processionaries' instinct to follow the leader could be. What would happen if he arranged the caterpillars in a circle? Would their instinct to follow force them to keep going round and round in an endless loop? On January 30, 1896, Fabre constructed an experiment in which he coaxed a chain of caterpillars around the rim of a large pot filled with earth. As soon as enough caterpillars had ascended to form a ring, he brushed away the ones at the end of the chain. He then nudged the lead caterpillar behind the trailing caterpillar to close the circle. Instantly, there was no more leader. Each caterpillar in the circle simply followed the threads laid down by those

ahead of it, ignoring a cache of the caterpillars' favorite food that Fabre had placed within about 12 inches of the circle.

Six days later, on February 5, the caterpillars were still circling. Only after many started to collapse from exhaustion and starvation did the circle begin to break, allowing a few caterpillars with the strength to do so to escape. According to Fabre's calculations, the caterpillars had made over 500 circuits of the pot and traveled over a quarter of a mile. That's equivalent to a person walking about 90 miles, or completing three and a half marathons, without food, drink, or rest. Fabre concluded his description of the experiment with these words: "The caterpillars in distress, starved, shelterless, chilled with cold at night, cling obstinately to the silk ribbon covered hundreds of times, because they lack the rudimentary glimmers of reason which would advise them to abandon it."[2]

If you've ever had the feeling that you have been in a procession of caterpillars—on your job, in your community, or at home—read on.

At some time in our lives we've all been processionary caterpillars, mindlessly following a trail of silk for no reason except that it's laid out before us. It's all too easy to be a part of the procession and not even realize we're in the parade. It's not the exceptional day that we find ourselves in the procession. It's most days. We go through our lives following the patterns we've grown comfortable with. We do things because that's the way they're done. Our routines seem so natural that it doesn't even occur to us that we're following patterns at all. We overlook opportunities, fail to see warning signs, or just plod along because we've kept our eye, not on the target, but on the routine. It happens to all of us.

As with the caterpillars in Fabre's experiments, sometimes the only thing that saves us is that things go so drastically wrong that we're forced out of our processions. Our pattern has been so counterproductive that the circle we've created can no longer sustain itself. It breaks apart. With no more circle, we're forced to find new ways of doing things. We change only when we're forced to.

How different are we from the processionary caterpillar?

• • •

At its heart productive thinking is about freedom. It's a way of escaping from the tyranny of the silken track. Sometimes, of course, there's real value in following the procession. It can be useful and efficient to do things the way they've always been done. Clearly, social conventions,

thinking conventions, and best practices have very important and powerful places in our lives. They represent a type of thinking I call reproductive thinking, which I'll discuss in more detail in Chapter 3. In many areas of our lives there is nothing wrong with reproductive thinking. After all, the behavior of the processionary caterpillar has been a successful survival mechanism for millions of years.

At its heart, productive thinking is about freedom. It's a way of escaping from the tyranny of the silken track.

Nevertheless, as Fabre observed, there are times when reproductive thinking can be counterproductive and even disastrous. As I will try to demonstrate throughout this book, all of us have the potential to think better, more productively, and more creatively. What we need is the incentive. The silken track is alluring: It's safe, it's easy, and in many cases it works just fine. Rarely will you be criticized for sticking to it. No wonder most people are content to play follow the leader. Thinking better is hard work. It can be risky. And it can certainly make you unpopular. So why bother?

I think there are three good reasons.

There's Plenty of Room for Improvement

Nothing is perfect. The word is full of things we can do better.

I once heard the systems thinker Dr. George Ainsworth-Land[3] tell a story that changed my life. Land worked as a consulting psychologist to school systems throughout the country. In preparation for one assignment, he was given a tour of an Arizona high school by its principal. On their walk through the halls, they saw two boys fighting in front of their lockers. One of the boys was the aggressor, pounding furiously on the other boy, who was trying to defend himself. The principal grabbed both boys by the collar, marched them into his office, sat them down, calmed them down, then turned to the aggressor, and asked, "Why were you hitting Brian like that?"

The boy looked up and said, "Because I couldn't think of anything else to do."

I couldn't think of anything else to do. What a statement! How much misery do we cause and endure in our personal lives, our business lives, our community lives, and our geopolitical lives because we can't think of anything else to do, because we can't find better options, because we act and react according to our timeworn limited—and limiting—patterns? How much better would our lives, our businesses, our world be if only we could think of better things to do, if only we could increase our options, if only we could truly think productively?

Wouldn't it be great if we could avoid the processionary caterpillar syndrome in which we do things just because we can't think of better things to do? As you'll see later in the book, the productive thinking process uses a series of trigger questions to stimulate thinking about issues. One of the "stems" we use to construct those questions is "Wouldn't it be great if . . . ?" I've listed six challenges in each of three areas: global challenges, business challenges, and personal challenges. Read through them and count how many you think it would be great to answer yes to:

Global challenges
Wouldn't it be great if . . .
we could find a cure for AIDS?
we could produce clean, reliable, renewable energy?
we could eliminate famine?
we could preserve freshwater supplies?
we could reduce air pollution?
we could end war?

Business challenges
Wouldn't it be great if . . .
my company could be quicker to market with new ideas?
I got more recognition for my ideas and contributions?
I could take the guesswork out of hiring good people?
my company could learn more about our markets and competitors?
I could have more time to be productive and creative?
my company could develop a breakthrough product or service?

Personal challenges
Wouldn't it be great if . . .
I could make more time for myself?
my family could settle differences better?

I could find a way to earn what I need by doing something that gives me satisfaction?

my family could communicate better?

my family could make the most of the time we spend together?

I could find ways to be of greater service to my community?

If you answered yes to just one of these questions, you have a good reason to learn how to think better.

The Indian philosopher Nisargadatta Maharaj once said, "Everything is perfect just as it is—and there's plenty of room for improvement." I don't know anyone who doesn't believe that his or her life or the lives of others couldn't be improved. Wouldn't it be great if we could think of ways to do so?

The good news is that every one of these questions and countless thousands more can be addressed by thinking better: more clearly, more creatively, more productively.

We can all do better. The first step is to start thinking better.

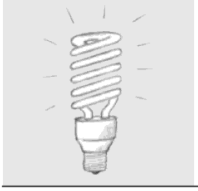
It's Not What You Know but How You Think

In 1969 Peter Drucker coined the term *knowledge economy* in his book *The Age of Discontinuity*. His thesis was that modern society had transformed from a reliance on manual workers to a reliance on knowledge workers. By the early 1990s many large global companies had begun to transform themselves into knowledge-based organizations. Corporate boardrooms and corridors were abuzz with people talking about the information age and intellectual capital. Drucker, as usual, was right.

Today a high school student in Albania can access essentially the same base of information as a chief executive officer in Atlanta. It has become increasingly difficult for the creators of information to husband it. In many industries protecting intellectual property has become a practical impossibility. Within hours of their release and sometimes even before their release, major movies are available as free downloads on the Internet. Music industry executives are apoplectic about piracy. Social security numbers and personal bank records seem to slip effortlessly from the confines of the information fortresses designed to protect them.

More than any other commodity, information is everywhere. Not only can almost anyone access almost anything at almost no cost,

but unlike corn and wheat, information doesn't have to be consumed to be used. Quite the opposite: The more it's used, the more it grows. Access to information is no longer the great differentiator. In the transformation economy what matters is how you think. Today the only significant economic differentiator for organizations is how well they can *use* that exponentially growing bank of information: how effectively they can sift through it, evaluate it, transform it into new knowledge, and maximize its economic potential. If it isn't already, the ability to think better will soon become the most significant competitive advantage companies and individuals can claim. Thinking better is what it's all about. And unlike manufacturing, accounting, or telemarketing, the thinking capacity of an organization can't be effectively outsourced.



The ability to think better will soon become the most significant competitive advantage companies and individuals can claim. Thinking better is what it's all about.

Clearly, as innovation becomes the watchword for business leaders, those who think better will win. Companies that have paid lip service to the value of their intellectual capital will have to put their money where their heads are. But that won't be easy. Intellectual capital is slippery. Its value lies in its potential, but it's difficult to measure, sometimes even difficult to see.

Creative intellectual capital is also unpredictable. You don't know what it's going to produce. That can be uncomfortable for corporate leaders who've grown up believing that spreadsheets and systems can define reality. The old axiom "what's not measurable is not manageable" may not apply anymore.

One of my clients is a large U.S.-based food manufacturer. In the belief that innovation has to be an organizational priority, the company recently allocated several million dollars in plant, equipment, and people to launch its Imaginarium Innovation Center.[4] Several months before the scheduled opening, the budget was cut, the launch was downplayed, and a directive was released to all the people involved in the center stating that its initial activities were to be "understated and conservative." Somebody got cold feet.

Yes, thinking better can be scary. But not nearly as scary as the alternative.

Thinking Better Is a Skill

The third reason to think better is because you can. Productive thinking is a skill anyone can learn. In describing public speakers, Ralph Waldo Emerson observed, "All great speakers were bad speakers first." None of us starts out in life knowing how to think. It's a skill we learn. Some of us, through good fortune, encounter mentors and circumstances that teach us well. Some of us don't. But regardless of your basic equipment or the training you've encountered, you can learn to think better.

The Productive Thinking Model is a disciplined, repeatable process for thinking better, thinking more creatively, thinking more innovatively. It is based on over 50 years of cognitive research. And it can be learned. When I started exploring the Internet in the late 1980s, I joined a Usenet forum that focused on creative thinking. I remember thinking at the time that it was miraculous that I could exchange views with people all over the world. One of the threads of our conversation was about whether creativity is innate or can be taught. The debate was hot. Many of the people in the forum were convinced that either you had it or you didn't. I was equally sure that there must be ways to enhance whatever natural abilities people have. The debate in the forum was never resolved, but something clicked for me over those several weeks of exchanges. I discovered that consciously or not, people in all walks of life believe that thinking is innate: You don't learn how to think, you just do it, and some people are simply better at it than others. I couldn't buy that. It seemed to me that if athletes can be trained to run faster and musicians can be taught to play better, surely people can be taught to think better.

I'm happy to tell you that I was right. Over the years evidence has mounted that thinking, and specifically creative thinking, is a skill like any other. It can be taught, it can be developed, and it can be nurtured. Every brain, regardless of its intelligence quotient (IQ) or creative quotient (CQ), can be taught to think better: to understand more clearly, think more creatively, and plan more effectively. I know. I've seen it happen thousands of times.

I'm passionate about productive thinking because I know it can work. I know it can change lives. I know it can transform organizations. I know it can create a better world.

Finding the Unexpected Connection

Heraclitus, the sixth-century BCE philosopher, wrote, "The unexpected connection is more powerful than one that is obvious." The unexpected connection is the heart of the productive thinking process. Seeing old things in new ways—seeing the initially strange but later obvious connections between familiar things—is what AHA! is all about. The unexpected connection has brought us every innovation we've ever created, from early hominids' discovery that a bone could be a weapon to Apple's creation of the iPhone.

Archimedes made an unexpected connection as he sat in his bath and watched the water rise and fall with his movements. Suddenly, it occurred to him that he could use the concept of displacement to ascertain the purity of gold in King Hieron's crown. Myth has it that he was so excited by his insight that he jumped out of the tub and ran naked through the streets of Syracuse yelling, "Eureka!" which means "I've found it!"

John Snow, the father of modern epidemiology, made an unexpected connection that saved a city. In 1854 London experienced an extensive cholera epidemic. The situation was so severe that people began preparing themselves for another Black Plague. A man could wake up healthy in the morning and die before supper. Conventional wisdom held that the disease was spread by people breathing the miasma of sickness. Snow had been interviewing residents of one of the most heavily afflicted areas, Soho. Almost by chance, he observed a pattern. The houses with the greatest number of victims seemed to radiate like spokes of a wheel from a hub at the junction of Broad and Cambridge streets: The closer to the junction, the higher the death toll. On Broad Street, just off Cambridge, there was a water pump. Suddenly it became clear: The pump was the source, and contaminated water the likely cause. The pump was shut down, and the epidemic subsided almost instantly.

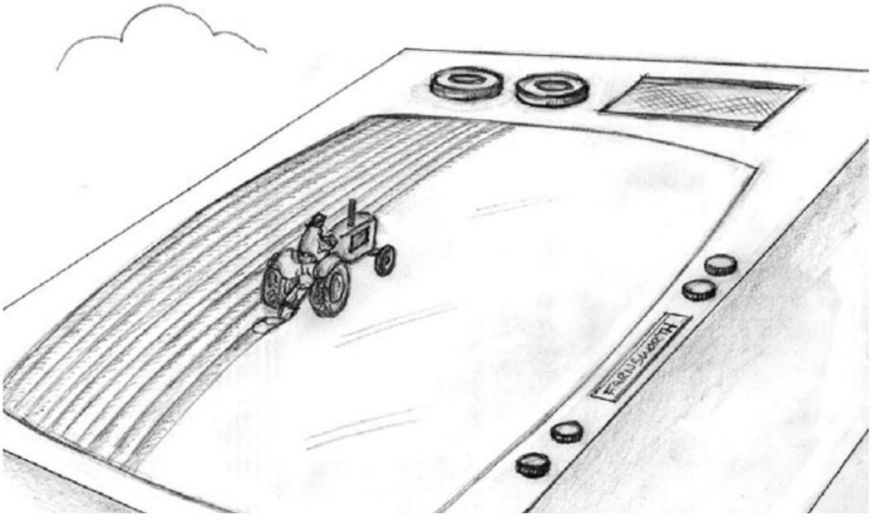
Philo T. Farnsworth made an unexpected connection when, as a fourteen-year-old farm boy, he watched his father working the fields of their Idaho homestead. As he watched the tractor furrowing lines in the dark earth, he wondered if it might be possible to scan and then reproduce a picture by using horizontal lines. Within seven years, in 1927, Farnsworth had built and demonstrated the world's first working television.

More recently, Jaap van Ballegooijen, chief engineer for Royal Dutch Shell, made an unexpected connection that allowed the company

to extract millions of barrels of previously inaccessible oil. He saw his son turn around his flexible straw to finish the last drop of his milk shake and realized that it might be possible to use the same technique thousands of feet underground.

Unexpected connections don't occur only in the fields of science and technology. Bill Bowerman made an unexpected connection between a tennis shoe and a waffle iron. He literally put the two together, created a new type of sole, and launched Nike, the most successful shoe company in history.

Productive thinking is a way to shine a bright light on the potential connections that are waiting to be discovered all around us. Imagine increasing your chances of finding unexpected connections. Could you make your business better? Your family? Your world?

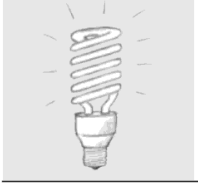


An unexpected connection

About 10 years ago I decided to go to a reunion of my alma mater, Oberlin College, in Ohio. Oberlin was small, with only about 2,500 students, but it was full of culture and life. A third of the students were music majors at its world-famous conservatory. One of Oberlin's real treats was that you could attend three concerts a day if you wanted to. I'd lost contact and hadn't returned since graduation.

On our last evening together we had a class dinner. I had the good luck to sit at the table of one of our honorees, George Langler, then in his eighties. Langler had been dean of students during my years at Oberlin, and though one of his main functions was to maintain order and discipline, he loved his students and had a powerful impact on many of them, including me.

After the meal a microphone was set up, and person after person walked up to tell Dean Langler stories. The last person to come to the mike didn't walk to it; he glided to it in his wheelchair. His name was Ralf Hotchkiss. Ralf had not been in our class originally. He was a year ahead of us. I remember as a freshman seeing Ralf riding around campus on contraptions he had built. Ralf was a bike enthusiast—and a character. You'd see him riding around on double-decker bikes, weird pentacycles, and bikes with passenger seats. It seemed that every week there would be a new bike incarnation. I think Ralf probably created the first-ever reclining bicycle. Ralf loved bikes. He also loved motorcycles. One summer Ralf had a terrible accident, fracturing his spine. It took nine months of surgeries and intense physical therapy for him to recover. But not fully: He had lost the use of the lower half of his body. He would never walk again, never ride a bike.



"Gee, Ralf, I don't see why not. We move pianos in and out of buildings all the time." –George Langler

When he was well enough to consider returning to school, he put the thought of attending Oberlin out of his mind. He knew that a small school in the Midwest was unlikely to be able to accommodate someone with his mobility constraints. So he applied to Ohio State. They liked his academic record but didn't have any buildings that were wheelchair-accessible, so they couldn't accept him. He tried the University of Michigan. Same story. University of Illinois. Same story. As it happened, Ralf's sister had gone to Oberlin a year or two ahead of him. She urged him to reapply. After all, what could he lose? Ralf made the call and spoke to George Langler. Langler listened for a moment and then said "Gee, Ralf, I don't see why not. We move pianos in and out of buildings

all the time. Let me call the buildings and grounds people and see if they can modify our portable ramps for your wheelchair. I'll get right back to you."

Ralf returned to school that fall, and Oberlin became the first institution in the United States to have an official policy of accommodating people with mobility disabilities. All because one man, Dean George Langler, sitting in an office in a small college in the Midwest, could see the unexpected connection between moving pianos and moving people. But the story doesn't end there. If you were alive in the late 1960s, you may remember what wheelchairs looked like then. If you're too young, look at the big, clunky upright things you see in airports and hospital waiting rooms. Fortunately, most wheelchairs don't look like that anymore. They're low-slung, with canted wheels and back supports. They're sturdy, light, and maneuverable. And they're all based on breakthrough designs created by Ralf Hotchkiss.

Ralf went on to found Whirlwind, a company that designs and manufactures the best wheelchairs in the world. Whirlwind has a special division that designs wheelchairs for third world countries, wheelchairs that are inexpensive, easy to maintain, can be lifted with one hand, and don't even need paved surfaces. Ralf changed the world, but without George Langler and his ability to see the unexpected connection between moving pianos and moving people, Ralf might never have had the chance.

Creating the Future

To create the future, you have to be able to imagine it. Productive thinking is a way to help you do that. It's not magic. It's a disciplined approach to thinking more creatively and more effectively. You can actually train yourself to think better. The more you practice it, the better you'll get. The better you get, the more opportunities you will have to make a better world, a better company, a better life.

The power of productive thinking lies its potential to increase your chances of finding, developing, and ultimately implementing unexpected connections. Although I've been helping people and companies discover unexpected connections for years, I am consistently astonished when they appear—sometimes in an instant, sometimes after months or even years of searching. They seem to be in limitless supply: an infinite number of AHAs waiting to be discovered.

Unexpected connections can be physically powerful. The moment of insight can actually jolt your body. People's AHA moments are often punctuated by triumphant Archimedes-like yells, by air punches and cries of "YES!", by laughter, and sometimes even tears. Yet once the unexpected connection is revealed, it seems so obvious, even mundane. People often shake their heads and say, "Well, of course. Why didn't we see that before?" That's one of the beauties of insight. Before a connection is made, there's nothing. A moment later, the connection seems like it's been there forever. It's been said that genius is simply a talent for seeing the obvious.

• • •

Chapter 2, "Monkey Mind, Gator Brain, and the Elephant's Tether," explains why unexpected connections elude us. The rest of this book shows how to find them.