

BOOK INTRODUCTION

NEW YORK TIMES BESTSELLER

THE POWER OF
H A B I T

WHY WE DO WHAT WE DO IN LIFE AND BUSINESS



"SHARP, PROVOCATIVE, and USEFUL." — Jim Collins, author of Good to Great

Charles Duhigg

WITH A NEW AFTERWORD BY THE AUTHOR

by VitalSmarts®

WELCOME TO

THE POWER OF
H A B I T

WHY WE DO WHAT WE DO IN LIFE AND BUSINESS

Discover the science behind habits
and learn how to change them.

To learn more about The Power of Habit™ Training by VitalSmarts,
visit VitalSmarts.com/the-power-of-habit-training

The Power of Habit: Why We Do What We Do in Life and in Business
is available everywhere books are sold.

PRAISE FOR *THE POWER OF HABIT*

“I have been spinning like a top since reading *The Power of Habit*, *New York Times* journalist Charles Duhigg’s fascinating best-seller about how people, businesses and organizations develop the positive routines that make them productive—and happy.”

—*The Washington Post*

“Duhigg clearly knows that people do not like, or even buy, the idea that we’re not creatures of choice. He carefully explains each step of habit building, using science and—the best part—a slew of interesting anecdotes.”

—*The Seattle Times*

“Fascinating.”

—*The Wall Street Journal*

“A fresh examination of how routine behaviors take hold and whether they are susceptible to change . . . The stories that Duhigg has knitted together are all fascinating in their own right, but take on an added dimension when wedded to his examination of habits. Readers may come away from the book with fresh ideas about their own behaviors and their susceptibility to change.”

—Associated Press



THE POWER OF
HABIT

Why We Do What We Do
in Life and Business

CHARLES DUHIGG

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Introduction to *The Power of Habit* by Emily Gregory

For thirty years VitalSmarts has focused on moments of disproportionate influence—those moments that matter more than others, that have a greater impact on relationships and results. Our work centers on giving people skills to better handle moments that dramatically impact outcomes, such as when a conversation turns crucial, when someone performs poorly or violates trust, or when we feel overwhelmed and must decide how to best expend time and energy.

Charles Duhigg's extraordinary book, *The Power of Habit*, centers on the same theme. Habits are at the heart of disproportionate influence. In fact, they may be the best predictor of long-term outcomes. Even small, seemingly insignificant habits can have tremendous impact. Indeed, our habits today will determine who we become and what we achieve tomorrow.

This can be both daunting and promising.

If you've ever tried to change a habit, you know just how challenging it can be. Habits are engrained behaviors that we often enact unconsciously and automatically. From how we eat and sleep to how we communicate and collaborate, habits govern a large portion of our daily activities—over 40 percent, according to one study. So changing them can sometimes feel like trying to turn around the Titanic.

But when a habit is working in our favor, its momentum can be just as astounding. A single habit can create a ripple effect, improving results and relationships in virtually every facet of life. Think about your own life achievements and consider their source. Chances are many of those achievements are the result of just a few solid habits.

Now imagine what you could achieve if you continually improved upon those habits, if you replaced the bad and built on the good. Imagine having the insight and ability to develop the habits that matter the most to you—habits that align with your values and ultimately lead to the outcomes you want.

In *The Power of Habit*, you won't find a list of habits you ought to have. Instead, you'll learn how habits work. And in understanding how they work, you can master them. Duhigg weaves a fascinating narrative that explores how some of the world's notable organizations—from Alcoholics Anonymous and Starbucks to Alcoa and the YMCA—have contributed to our understanding of habits. He also highlights the science behind each case and story of habit change, whether individual or organizational. It's an engrossing account that can actually improve your life.

It's been said that between who you *are* and who you want to *be* is what you *do*. This truism underscores the one thing over which we always have power: our own behavior. And our ability to master our behavior is the bridge between strategy and execution, between dreams and reality, between our objectives and our outcomes. *This* is the power of habit.

Emily Gregory, VitalSmarts

Vice President, Product Development



As vice president of product development, Emily is integral to the success of the company's learning solutions. Under her leadership, VitalSmarts creates and develops the company's award-winning line of learning solutions, as well as supports a community of more than fifteen thousand certified training professionals with nationwide development opportunities, conferences, and training implementation tools. Emily also travels around the world speaking, training, and consulting to Fortune 500 clients. She graduated from Emory University with a BA in English, received an MD from The University of Utah School of Medicine, and an MBA from the Marriott School of Management at Brigham Young University.

The Power of Habit

Abridged First Chapter

By Charles Duhigg

The Rats of MIT

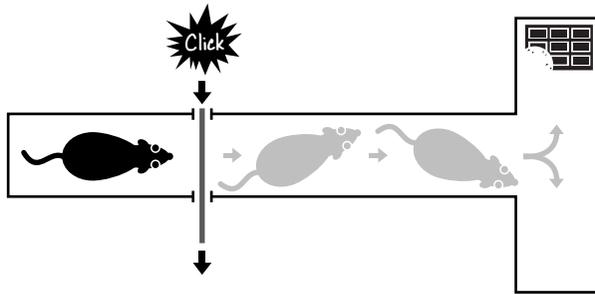
Within the building that houses the Brain and Cognitive Sciences department of the Massachusetts Institute of Technology are laboratories that contain what, to the casual observer, look like dollhouse versions of surgical theaters. There are tiny scalpels, small drills, and miniature saws less than a quarter inch wide attached to robotic arms. Even the operating tables are tiny, as if prepared for child-sized surgeons. The rooms are always kept at a chilly sixty degrees because a slight nip in the air steadies researchers' fingers during delicate procedures. Inside these laboratories, neurologists implant in rats' skulls tiny sensors that can record the smallest changes inside their brains. When the rats wake, they hardly seem to notice that there are now dozens of microscopic wires arrayed, like neurological spider webs, inside their heads.

These laboratories have become the epicenter for a quiet revolution in the science of habit formation, and the experiments unfolding here explain how you, me, and everyone else develop the behaviors necessary to make it through each day. The rats in these labs have illuminated the complexity that occurs inside our heads whenever we do something as mundane as brush our teeth or back the car out of the driveway.

When the MIT researchers started working on habits in the 1990s, they were curious about a nub of neurological tissue known as the basal ganglia. If you picture the human brain as an onion, composed of layer upon layer of cells, then the outside layers—those closest to the scalp—are generally the most recent additions from an evolutionary perspective. When you dream up a new invention or laugh at a friend's joke, it's the outside parts of your brain at work. That's where the most complex thinking occurs.

Deeper inside the brain and closer to the brain stem—where the brain meets the spinal column—are older, more primitive structures. They control our automatic behaviors, such as breathing and swallowing, or the startle response we feel when someone leaps out from behind a bush. Toward the center of the skull is a golf ball-sized lump of tissue that is similar to what you might find inside the head of a fish, reptile, or mammal. This is the basal ganglia, an oval of cells that, for years, scientists didn't understand very well, except for suspicions that it played a role in diseases such as Parkinson's.

In the early 1990s, the MIT researchers began wondering if the basal ganglia might be integral to habits as well. They noticed that animals with injured basal ganglia suddenly developed problems with tasks such as learning how to run through mazes or remembering how to open food containers. They decided to experiment by employing new micro-technologies that allowed them to observe, in minute detail, what was occurring within the heads of rats as they performed dozens of routines. In surgery, each rat had what looked like a small joystick and dozens of tiny wires inserted into its skull. Afterward, the animal was placed into a T-shaped maze with chocolate at one end.



The maze was structured so that each rat was positioned behind a partition that opened when a loud click sounded. Initially, when a rat heard the click and saw the partition disappear, it would usually wander up and down the center aisle, sniffing in corners and scratching at walls. It appeared to smell the chocolate, but couldn't figure out how to find it. When it reached the top of the T, it often turned to the right, away from the chocolate, and then wandered left, sometimes pausing for no obvious

reason. Eventually, most animals discovered the reward. But there was no discernible pattern in their meanderings. It seemed as if each rat was taking a leisurely, unthinking stroll.

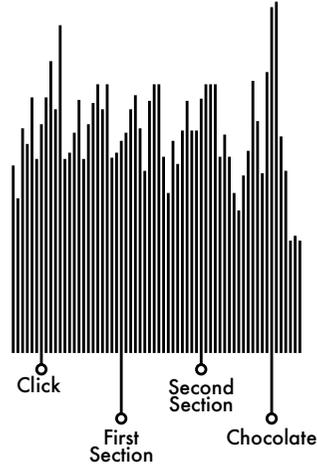
The probes in the rats' heads, however, told a different story. While each animal wandered through the maze, its brain—and in particular, its basal ganglia—worked furiously. Each time a rat sniffed the air or scratched a wall, its brain exploded with activity, as if analyzing each new scent, sight, and sound. The rat was processing information the entire time it meandered.

The scientists repeated their experiment, again and again, watching how each rat's brain activity changed as it moved through the same route hundreds of times. A series of shifts slowly emerged. The rats stopped sniffing corners and making wrong turns. Instead, they zipped through the maze faster and faster. And within their brains, something unexpected occurred: As each rat learned how to navigate the maze, its mental activity *decreased*. As the route became more and more automatic, each rat started thinking less and less.

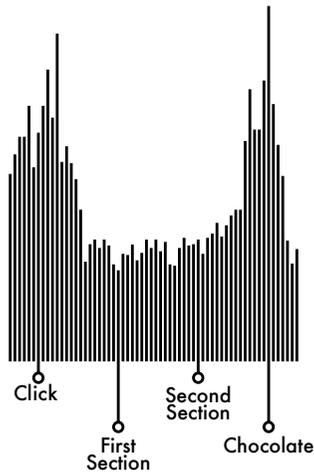
It was as if the first few times a rat explored the maze, its brain had to work at full power to make sense of all the new information. But after a few days of running the same route, the rat didn't need to scratch the walls or smell the air anymore, and so the brain activity associated with scratching and smelling ceased. It didn't need to choose which direction to turn, and so decision-making centers of the brain went quiet. All it had to do was recall the quickest path to the chocolate. Within a week, even the brain structures related to memory had quieted. The rat had internalized how to sprint through the maze to such a degree that it hardly needed to think at all.

But that internalization—run straight, hang a left, eat the chocolate—relied upon the basal ganglia, the brain probes indicated. This tiny, ancient neurological structure seemed to take over as the rat ran faster and faster and its brain worked less and less. The basal ganglia was central to recalling patterns and acting on them. The basal ganglia, in other words, stored habits even while the rest of the brain went to sleep.

To see this capacity in action, consider this graph, which shows activity within a rat's skull as it encounters the maze for the first time. Initially, the brain is working hard the entire time:



After a week, once the route is familiar and the scurrying has become a habit, the rat's brain settles down as it runs through the maze:



The Habit Loop

This process—in which the brain converts a sequence of actions into an automatic routine—is known as “chunking,” and it’s at the root of how habits form. There are dozens—if not hundreds—of behavioral chunks that we rely on every day. Some are simple: You automatically put toothpaste on your toothbrush before sticking it in your mouth. Some, such as getting dressed or making the kids’ lunch, are a little more complex.

Others are so complicated that it’s remarkable a small bit of tissue that evolved millions of years ago can turn them into habits at all. Take the act of backing your car out of the driveway. When you first learned to drive, the driveway required a major dose of concentration, and for good reason: It involves opening the garage, unlocking the car door, adjusting the seat, inserting the key in the ignition, turning it clockwise, moving the rearview and side mirrors and checking for obstacles, putting your foot on the brake, moving the gearshift into reverse, removing your foot from the brake, mentally estimating the distance between the garage and the street while keeping the wheels aligned and monitoring for oncoming traffic, calculating how reflected images in the mirrors translate into actual distances between the bumper, the garbage cans, and the hedges, all while applying slight pressure to the gas pedal and brake, and, most likely, telling your passenger to please stop fiddling with the radio.

Nowadays, however, you do all of that every time you pull onto the street with hardly any thought. The routine occurs by habit.

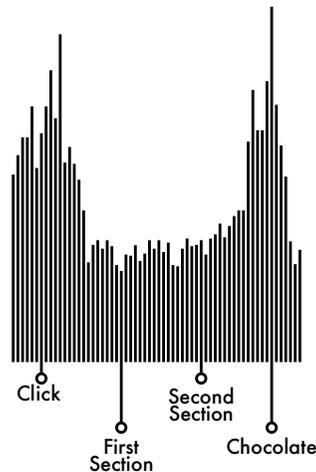
Millions of people perform this intricate ballet every morning, unthinkingly, because as soon as we pull out the car keys, our basal ganglia kicks in, identifying the habit we’ve stored in our brains related to backing an automobile into the street. Once that habit starts unfolding, our gray matter is free to quiet itself or chase other thoughts, which is why we have enough mental capacity to realize that Jimmy forgot his lunchbox inside.

Habits, scientists say, emerge because the brain is constantly looking for ways to save effort. Left to its own devices, the brain will try to make almost any routine into a habit, because habits allow our minds to ramp down more often. This effort-saving instinct is a huge advantage. An efficient brain requires less room, which makes for a smaller head, which makes childbirth easier and therefore causes fewer infant and

mother deaths. An efficient brain also allows us to stop thinking constantly about basic behaviors, such as walking and choosing what to eat, so we can devote mental energy to inventing spears, irrigation systems, and, eventually, airplanes and video games.

But conserving mental effort is tricky, because if our brains power down at the wrong moment, we might fail to notice something important, such as a predator hiding in the bushes or a speeding car as we pull onto the street. So our basal ganglia have devised a clever system to determine when to let habits take over. It's something that happens whenever a chunk of behavior starts or ends.

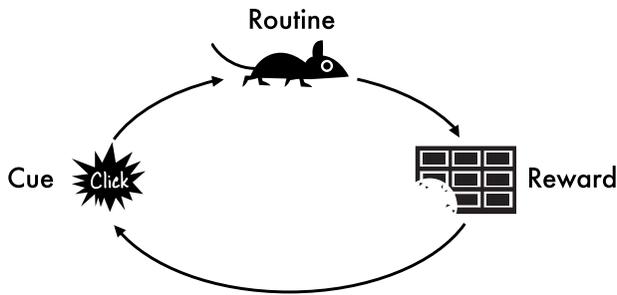
To see how it works, look closely at the graph of the rat's neurological habit again. Notice that brain activity spikes at the beginning of the maze, when the rat hears the click before the partition starts moving, and again at the end, when it finds the chocolate.



Those spikes are the brain's way of determining when to cede control to a habit, and which habit to use. From behind a partition, for instance, it's difficult for a rat to know if it's inside a familiar maze or an unfamiliar cupboard with a cat lurking outside. To deal with this uncertainty, the brain spends a lot of effort at the beginning of a habit looking for something—a cue—that offers a hint as to which pattern to use. From behind

a partition, if a rat hears a click, it knows to use the maze habit. If it hears a meow, it chooses a different pattern. And at the end of the activity, when the reward appears, the brain shakes itself awake and makes sure everything unfolded as expected.

This process within our brains is a three-step loop. First, there is a cue, a trigger that tells your brain to go into automatic mode and which habit to use. Then there is the routine, which can be physical or mental or emotional. Finally, there is a reward, which helps your brain figure out if this particular loop is worth remembering for the future:



THE HABIT LOOP

Over time, this loop—cue, routine, reward; cue, routine, reward—becomes more and more automatic. The cue and reward become intertwined until a powerful sense of anticipation and craving emerges. Eventually, whether in a chilly MIT laboratory or your driveway, a habit is born.

Leveraging The Brain's Natural Tendency

Habits aren't destiny. As this book explains, habits can be ignored, changed, or replaced (though they cannot be avoided or discarded). The reason the discovery of the habit loop is so important is that it reveals a basic truth: When a habit emerges, the brain stops fully participating in decision making. It stops working so hard, or diverts focus to other tasks. So unless you deliberately fight a habit—unless you find new

routines—the pattern will unfold automatically. This is true for individuals, organizations, and societies.

“We’ve done experiments where we trained rats to run down a maze until it was a habit, and then we extinguished the habit by changing the placement of the reward,” Ann Graybiel, a scientist at MIT who oversaw many of the basal ganglia experiments, told me. “Then one day, we’ll put the reward in the old place, and put in the rat, and, by golly, the old habit will reemerge right away. Habits never really disappear. They’re encoded into the structures of our brain, and that’s a huge advantage for us, because it would be awful if we had to relearn how to drive after every vacation. The problem is that your brain can’t tell the difference between bad and good habits, and so if you have a bad one, it’s always lurking there, waiting for the right cues and rewards.”

This explains why it’s so hard to create exercise habits, for instance, or change what we eat, or dive into difficult tasks at work instead of checking social media. Once we develop a routine of sitting on the couch, rather than running, or snacking whenever we pass a doughnut box, or opening Facebook when a creative brief hits the desk, those patterns always remain inside our heads. By the same rule, though, if we learn to create new neurological routines that overpower those behaviors—if we take control of the habit loop—we can force those bad tendencies into the background. And once someone creates a new pattern, studies have demonstrated, going for a jog or ignoring the doughnuts or doing difficult work first becomes as automatic as any other habit.

Without habit loops, our brains would shut down, overwhelmed by the minutiae of daily life. People whose basal ganglia are damaged by injury or disease often become mentally paralyzed. They have trouble performing basic activities, such as opening a door or deciding what to eat. Without our basal ganglia, we lose access to the hundreds of habits we rely on every day. Did you pause this morning to decide whether to tie your left or right shoe first? Did you have trouble figuring out if you should brush your teeth before or after you showered?

Of course not. Those decisions are habitual, effortless. As long as your basal ganglia is intact and the cues remain constant, the behaviors will occur unthinkingly.

At the same time, however, the brain's dependence on automatic routines can be dangerous. Habits are often as much a curse as a benefit. Unless you're superhuman, you know this. You've experienced firsthand how habits of sleeping, eating, communicating and working can contribute either to unhappiness and failure or success and joy. The challenge is that most of us do not choose our habits consciously or deliberately. And because habits form regardless of whether forethought is exercised, they often do not serve us well. Even when we have a sense of the kind of habits we'd like cultivate, we struggle to do so.

However, simply understanding how habits work—learning the structure of the habit loop—makes them easier to control. Once you break a habit into its components, you can fiddle with the gears.

In the past decade, our understanding of the neurology and psychology of habits and the way patterns work within our lives, societies, and organizations has expanded in ways we couldn't have imagined fifty years ago. We now know why habits emerge, how they change, and the science behind their mechanics. We know how to break them into parts and rebuild them to our specifications. We understand how to make people eat less, exercise more, work more efficiently, and live healthier lives.

That said, this book doesn't contain one prescription. Rather, it offers a framework for understanding how habits work and a guide to experimenting with how they might change. Here's the crux: there are no organizations or individuals without habits; there are only those who deliberately design them and those who do not. Consider this a design manual. Transforming a habit isn't necessarily easy or quick. It isn't always simple.

But it is possible. And now we understand how.

About the Author of *The Power of Habit*



Charles Duhigg is an award-winning journalist and best-selling author. After studying history at Yale and earning an MBA from Harvard Business School, he worked as a staff writer for the *Los Angeles Times* and then as a reporter for *The New York Times*, during which time he received a Pulitzer Prize for explanatory reporting. He has authored two *New York Times* bestsellers, *The Power of Habit* and *Smarter Faster Better*, the first of which was hailed an “essential manual for business and living”

by *Financial Times*. Today, Charles writes for *The New York Times Magazine*, *The New Yorker*, and *The Atlantic*, and lives in Brooklyn, New York, with his wife and two children.

About VitalSmarts

An innovator in corporate training and leadership development, VitalSmarts combines three decades of original research with 50 years of the best social science thinking to help organizations achieve new levels of performance. Specifically, we focus on human behavior—the underlying written and unwritten rules that shape what employees do every day.

Our work within the halls of some of the world’s top organizations has led us to identify key skill sets present in successful companies. When used in combination, these high-leverage skills create healthy corporate cultures that spur flawless execution and consistent innovation. These skill sets are taught in the award-winning courses and *New York Times* best-selling books: *Crucial Conversations*, *Crucial Accountability*, *Influencer*, *The Power of Habit* and *Getting Things Done*.

VitalSmarts has trained more than 2 million people worldwide and helped more than 300 of the Fortune 500 realize significant results by driving rapid, sustainable, and measurable change in behaviors. VitalSmarts was ranked by *Inc.* magazine as one of the fastest-growing companies in America for ten consecutive years.

Want results?

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We've taken some of our most enriching resources from *The Power of Habit*™ and created an exclusive resource vault just for book readers.

By visiting *The Power of Habit* resource website, you'll get access to the following:



The Power of Habit Video Library



The Habit Loop Model Card



VitalSmarts *Crucial Skills* newsletter



And more!

To access these resources, visit vitalsmarts.com/tpohbook.

NOT FOR RESALE

"Few [books] become essential manuals for business and living. *The Power of Habit* is an exception. Charles Duhigg not only explains how habits are formed but how to kick bad ones and hang on to the good."

— *Financial Times*

In *The Power of Habit*, award-winning business reporter Charles Duhigg takes us to the thrilling edge of scientific discoveries that explain why habits exist and how they can be changed. Distilling vast amounts of information into engrossing narratives that take us from the boardrooms of Procter & Gamble to the sidelines of the NFL to the front lines of the civil rights movement, Duhigg presents a whole new understanding of human nature and its potential. At its core, *The Power of Habit* contains an exhilarating argument: The key to exercising regularly, losing weight, being more productive, and achieving success is understanding how habits work. As Duhigg shows, by harnessing this new science, we can transform our businesses, our communities, and our lives.

"A flat-out great read."

— DAVID ALLEN, bestselling author of *Getting Things Done: The Art of Stress-Free Productivity*

"You'll never look at yourself, your organization, or your world quite the same way."

— DANIEL H. PINK, bestselling author of *Drive* and *A Whole New Mind*

"Entertaining . . . enjoyable . . . fascinating . . . a serious look at the science of habit formation and change."

— *The New York Times Book Review*

"Cue: see cover. Routine: read book. Reward: fully comprehend the art of manipulation."

— *Bloomberg Businessweek*

"Absolutely fascinating."

— *Wired*

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