



**Daniel H. Pink**



**WHEN**

**THE SCIENTIFIC  
SECRETS OF  
PERFECT TIMING**

***NEW YORK TIMES***—bestselling author of  
***DRIVE*** and ***TO SELL IS HUMAN***



## Praise for *When*

“*When* contains a cornucopia of compelling information and insights.”

—*The Philadelphia Inquirer*

“Daniel Pink is one of the few non-fiction authors alive today capable of filtering the work of so many scientific minds through his original human stories and onto the page. He is doggedly diligent in his academic research yet his examples are accessible. . . . Like a long walk with a good, funny, wise friend in a leafy park, reading this book is time well spent.”

—*Harper’s Bazaar*

“Minutes are precious—and easier than ever to waste. . . . College students and business managers alike may find new ways to organize their schedules and ease difficult decisions by using the ‘hidden pattern’ of time to their advantage.”

—*The Wall Street Journal*

“The breadth of the book’s scope is impressive. . . . Pink makes a point to end each chapter with takeaway points that readers can apply to their own lives. *When* is engaging, conversational, and tightly edited, making it an easy yet important read.”

—Associated Press

“Intriguing stuff written with a light, assured touch.”

—*The Guardian*

“Fascinating . . . truly revelatory.”

—*Toronto Star*

“Pink should change many people’s understanding of timing with this book, which provides insights from little-known scientific studies in an accessible way. . . . By the book’s end, readers will be thinking much more carefully about how they divide up their days and organize their routines.”

—*Publishers Weekly*

“Helpful tips and insightful solutions.”

—*Forbes*

“[*When*] reveals that timing really is everything. . . . This marriage of research, stories, and practical application is vintage Pink, helping us use science to improve our everyday lives.”

—*BookPage*

“Known for his popular books on motivation and creativity, Pink tackles the science behind how we organize our time and how we should set up the routines of our days.”  
—*The Washington Post*

“Solid science backed by sensible action points.”  
—*Kirkus Reviews*

“Illuminating and often surprising.”  
—*strategy + business*

“A must-read for marketers, especially if you are keen to optimize your career prospects, improve your leadership skills, understand consumer behavior, or plan a successful campaign.”  
—*American Marketing Association*

“Pink delivers the bad news about our time-based weaknesses with some good news about how to compensate for them. More delightful still, many of these tips involve simply slowing down, taking breaks, and stealing naps. Alas, none of this advice will prevent time from flying by, but at least there are proven ways to fill our hours a bit better.”  
—*The Wall Street Journal*

“This riveting examination of time and its role in all aspects of our work and personal lives will likely inspire you to restructure your behaviors completely. Broken into three parts and written with Pink’s usual humor, the book explores such profound issues as when to quit your job, exercise, nap, marry, graduate, go first, go last, and drink coffee. On every subject, he and his data are powerfully persuasive.”  
—*Associations Now*

“Helpful, inspiring, and thoughtful advice.”  
—*Booklist*

“Combining rigorous research with anecdotes and humor, [Pink] examines why most of us are at our best early in the day before fading after lunch and how we can reorganize our lives to perform at our best. . . . His high-energy style is infectious.”  
—*AudioFile*

Also by Daniel H. Pink

*Free Agent Nation*

*A Whole New Mind*

*The Adventures of Johnny Bunko*

*Drive*

*To Sell Is Human*

DANIEL H. PINK

# WHEN

*The Scientific Secrets  
of Perfect Timing*

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“Across continents and time zones, as predictable as the ocean tides, was the same daily oscillation—a peak, a trough, and a rebound.”

### [2. Afternoons and Coffee Spoons: The Power of Breaks, the Promise of Lunch, and the Case for a Modern Siesta](#)

“A growing body of science makes it clear: Breaks are not a sign of sloth but a sign of strength.”

## [PART TWO. BEGINNINGS, ENDINGS, AND IN BETWEEN](#)

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“Most of us have harbored a sense that beginnings are significant. Now the science of timing has shown that they're even more powerful than we suspected.

Beginnings stay with us far longer than we know; their effects linger to the end.”

#### 4. [Midpoints: What Hanukkah Candles and Midlife Malaise Can Teach Us About Motivation](#)

“When we reach a midpoint, sometimes we slump, but other times we jump. A mental siren alerts us that we’ve squandered half of our time.”

#### 5. [Endings: Marathons, Chocolates, and the Power of Poignancy](#)

“Yet, when endings become salient—whenever we enter an act three of any kind—we sharpen our existential red pencils and scratch out anyone or anything nonessential.”

### PART THREE. [SYNCHING AND THINKING](#)

#### 6. [Synching Fast and Slow: The Secrets of Group Timing](#)

“Synchronizing makes us feel good—and feeling good helps a group’s wheels turn more smoothly. Coordinating with others also makes us *do* good—and doing good enhances synchronization.”

#### 7. [Thinking in Tenses: A Few Final Words](#)

“Most of the world’s languages mark verbs with time using tenses—especially past, present, and future—to convey meaning and reveal thinking. Nearly every phrase we utter is tinged with time.”

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Time isn't the main thing. It's the only thing.

—MILES DAVIS

# INTRODUCTION: CAPTAIN TURNER'S DECISION

Half past noon on Saturday, May 1, 1915, a luxury ocean liner pulled away from Pier 54 on the Manhattan side of the Hudson River and set off for Liverpool, England. Some of the 1,959 passengers and crew aboard the enormous British ship no doubt felt a bit queasy—though less from the tides than from the times.

Great Britain was at war with Germany, World War I having broken out the previous summer. Germany had recently declared the waters adjacent to the British Isles, through which this ship had to pass, a war zone. In the weeks before the scheduled departure, the German embassy in the United States even placed ads in American newspapers warning prospective passengers that those who entered those waters “on ships of Great Britain or her allies do so at their own risk.”<sup>1</sup>

Yet only a few passengers canceled their trips. After all, this liner had made more than two hundred transatlantic crossings without incident. It was one of the largest and fastest passenger ships in the world, equipped with a wireless telegraph and well stocked with lifeboats (thanks in part to lessons from the *Titanic*, which had gone down three years earlier). And, perhaps most important, in charge of the ship was Captain William Thomas Turner, one of the most seasoned seamen in the industry—a gruff fifty-eight-year-old with a career full of accolades and “the physique of a bank safe.”<sup>2</sup>

The ship traversed the Atlantic Ocean for five uneventful days. But on May 6, as the hulking vessel pushed toward the coast of Ireland, Turner received word that German submarines, or U-boats, were roaming the area. He soon left the captain's deck and stationed

himself on the bridge in order to scan the horizon and be ready to make swift decisions.

On Friday morning, May 7, with the liner now just one hundred miles from the coast, a thick fog settled in, so Turner reduced the ship's speed from twenty-one knots to fifteen knots. By noon, though, the fog had lifted, and Turner could spy the shoreline in the distance. The skies were clear. The seas were calm.

However, at 1 p.m., unbeknownst to captain or crew, German U-boat commander Walther Schwieger spotted the ship. And in the next hour, Turner made two inexplicable decisions. First, he increased the ship's speed a bit to eighteen knots but not to its maximum speed of twenty-one knots, even though his visibility was sound, the waters were steady, and he knew submarines might be lurking. During the voyage, he had assured passengers that he would run the ship fast because at its top speed this ocean liner could easily outrace any submarine. Second, at around 1:45 p.m., in order to calculate his position, Turner executed what's called a "four-point bearing," a maneuver that took forty minutes, rather than carry out a simpler bearing maneuver that would have taken only five minutes. And because of the four-point bearing, Turner had to pilot the ship in a straight line rather than steer a zigzag course, which was the best way to dodge U-boats and elude their torpedoes.

At 2:10 p.m., a German torpedo ripped into the starboard side of the ship, tearing open an immense hole. A geyser of seawater erupted, raining shattered equipment and ship parts on the deck. Minutes later, one boiler room flooded, then another. The destruction triggered a second explosion. Turner was knocked overboard. Passengers screamed and dived for lifeboats. Then, just eighteen minutes after being hit, the ship rolled on its side and began to sink.

Seeing the devastation he had wrought, submarine commander Schwieger headed out to sea. He had sunk the *Lusitania*.

Nearly 1,200 people perished in the attack, including 123 of the 141 Americans aboard. The incident escalated World War I, rewrote the rules of naval engagement, and later helped draw the United States into the war. But what exactly took place that May afternoon a century ago remains something of a mystery. Two inquiries in the immediate aftermath of the attack were unsatisfying. British officials halted the first one so as not to reveal military secrets. The second,

led by John Charles Bigham, a British jurist known as Lord Mersey, who had also investigated the *Titanic* disaster, exonerated Captain Turner and the shipping company of any wrongdoing. Yet, days after the hearings ended, Lord Mersey resigned from the case and refused payment for his service, saying, “The *Lusitania* case was a damned, dirty business!”<sup>3</sup> During the last century, journalists have pored over news clippings and passenger diaries, and divers have probed the wreckage searching for clues about what really happened. Authors and filmmakers continue to produce books and documentaries that blaze with speculation.

Had Britain intentionally placed the *Lusitania* in harm’s way, or even conspired to sink the ship, to drag the United States into the war? Was the ship, which carried some small munitions, actually being used to transport a larger and more powerful cache of arms for the British war effort? Was Britain’s top naval official, a forty-year-old named Winston Churchill, somehow involved? Was Captain Turner, who survived the attack, just a pawn of more influential men, “a chump [who] invited disaster,” as one surviving passenger called him? Or had he suffered a small stroke that impaired his judgment, as others alleged? Were the inquests and investigations, the full records of which still haven’t been released, massive cover-ups?<sup>4</sup>

Nobody knows for sure. More than one hundred years of investigative reporting, historical analysis, and raw speculation haven’t yielded a definitive answer. But maybe there’s a simpler explanation that no one has considered. Maybe, seen through the fresh lens of twenty-first-century behavioral and biological science, the explanation for one of the most consequential disasters in maritime history is less sinister. Maybe Captain Turner just made some bad decisions. And maybe those decisions were bad because he made them in the afternoon.

. . .

**T**his is a book about timing. We all know that timing is everything. Trouble is, we don’t know much about timing itself. Our lives present a never-ending stream of “when” decisions—when to change careers, deliver bad news, schedule a class, end a marriage, go for a run, or get serious about a project or a person. But most of these

decisions emanate from a steamy bog of intuition and guesswork. Timing, we believe, is an art.

I will show that timing is really a science—an emerging body of multifaceted, multidisciplinary research that offers fresh insights into the human condition and useful guidance on working smarter and living better. Visit any bookstore or library, and you will see a shelf (or twelve) stacked with books about *how* to do various things—from win friends and influence people to speak Tagalog in a month. The output is so massive that these volumes require their own category: *how-to*. Think of this book as a new genre altogether—a *when-to* book.

For the last two years, two intrepid researchers and I have read and analyzed more than seven hundred studies—in the fields of economics and anesthesiology, anthropology and endocrinology, chronobiology and social psychology—to unearth the hidden science of timing. Over the next two hundred pages, I will use that research to examine questions that span the human experience but often remain hidden from our view. Why do beginnings—whether we get off to a fast start or a false start—matter so much? And how can we make a fresh start if we stumble out of the starting blocks? Why does reaching the midpoint—of a project, a game, even a life—sometimes bring us down and other times fire us up? Why do endings energize us to kick harder to reach the finish line yet also inspire us to slow down and seek meaning? How do we synchronize in time with other people—whether we’re designing software or singing in a choir? Why do some school schedules impede learning but certain kinds of breaks improve student test scores? Why does thinking about the past cause us to behave one way, but thinking about the future steer us in a different direction? And, ultimately, how can we build organizations, schools, and lives that take into account the invisible power of timing—that recognize, to paraphrase Miles Davis, that timing isn’t the main thing, it’s the only thing?

This book covers a lot of science. You’ll read about plenty of studies, all of them cited in the notes so you can dive deeper (or check my work). But this is also a practical book. At the end of each chapter is what I call a “Time Hacker’s Handbook,” a collection of tools, exercises, and tips to help put the insights into action.

So where do we begin?

The place to start our inquiry is with time itself. Study the history of time—from the first sundials in ancient Egypt to the early mechanical clocks of sixteenth-century Europe to the advent of time zones in the nineteenth century—and you’ll soon realize that much of what we assume are “natural” units of time are really fences our ancestors constructed in order to corral time. Seconds, hours, and weeks are all human inventions. Only by marking them off, wrote historian Daniel Boorstin, “would mankind be liberated from the cyclical monotony of nature.”<sup>5</sup>

But one unit of time remains beyond our control, the epitome of Boorstin’s cyclical monotony. We inhabit a planet that turns on its axis at a steady speed in a regular pattern, exposing us to regular periods of light and dark. We call each rotation of Earth a day. The day is perhaps the most important way we divide, configure, and evaluate our time. So part one of this book starts our exploration of timing here. What have scientists learned about the rhythm of a day? How can we use that knowledge to improve our performance, enhance our health, and deepen our satisfaction? And why, as Captain Turner showed, should we never make important decisions in the afternoon?