This Is Your Brain … in Books

BY PATRICK SMITH

Arthur Conan Doyle thought of the brain as an empty attic. The *Wizard of Oz*'s scarecrow knew he could "wile away the hours, conferrin' with the flowers" if he only had a brain. Zombies crave brains.

But the mysteries of the brain persist.

"How can a three-pound mass of jelly that you can hold in your palm imagine angels, contemplate the meaning of infinity, and even question its own place in the cosmos? Especially awe inspiring is the fact that any single brain, including yours, is made up of atoms that were forged in the hearts of countless, far-flung stars billions of years ago," V. S. Ramachandran writes in *The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human* (2011). "These particles drifted for eons and light-years until gravity and change brought them together here, now."

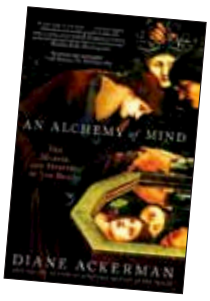
The popular conception of the human brain has changed over the millennia, from the first tentative musings of the Greek physician Galen to Mary Shelley's soulless, mashed-up monster to current theory and practice that understands the brain on an unprecedented level—and whose practitioners readily admit that far more remains to be discovered than we already know. The seat of creativity and ecstasy and torment, optimism and abject misery, profound love and all-consuming hatred, the brain has baffled and intrigued scientists and artists for millennia, providing fertile ground for exploration and wild speculation in both nonfiction and fiction. Below we explore some of the more accessible titles.

Nonfiction

An Alchemy of Mind

The Marvel and Mystery of the Brain
By Diane Ackerman (2004)

"Imagine the brain … ," Diane Ackerman writes as she begins her poetic, expansive examination of "that mouse-gray parliament of cells." In insightful, contemplative collections such as *A Natural History of the Senses* (1990), *The Moon by Whale Light* (1991), and *A Natural History of Love* (1994), the naturalist and poet powerfully evoked her passion for understanding how we and our fellow creatures relate to our surroundings. It is no surprise, then, that she turned her considerable skill to the root of it all—the human brain.



In *An Alchemy of Mind*, whether describing the delights of gardening, the vagaries of personality and emotion, the beauty and complexity of language, or the ineffable wilderness of consciousness, Ackerman combines an artist's knack for observation with a scientist's drive for discovery. Pulling off a sleight of hand that eludes most writers, the author bridges the seemingly inseparable chasm between brain chemistry and the ways we interact with the world around us. The result is, much like the mind, marvelous and mysterious.

Brain on Fire

My Month of Madness
By Susannah Cahalan (2013)

A reporter for the *New York Post*, Susannah Cahalan experienced a series of rapid, inexplicable psychological and physiological changes, including hallucinations, paranoia, and violent seizures, that profoundly affected her life and the lives of those around her. She was left with no memory of the episodes and little understanding of the underlying causes. Doctors, baffled by symptoms that suggested bipolar disorder and schizophrenia

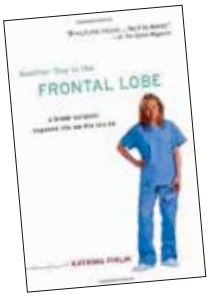
but MRIs and blood tests that showed a normal, healthy young woman, finally diagnosed a rare autoimmune disease.

In *Brain on Fire*, Cahalan recreates the broad swathes of time missing from her life. "Even still, I readily admit that I'm an unreliable source," Cahalan writes. "No matter how much research I've done, the consciousness that defines me as a person wasn't present then. … What is left, then, is a journalist's inquiry into that deepest part of the self—personality, memory, identity—in an attempt to pick up and understand the pieces left behind." Calahan's story about her illness and slow recovery, which even caught the interest of the *New England Journal of Medicine*, is all the more horrifying for the ferocity of the symptoms' onset and the author's attempt at coming to grips with her illness. (★★★★ Mar/Apr 2013)

Another Day in the Frontal Lobe

A Brain Surgeon Exposes Life on the Inside

By Katrina Firlik (2006)

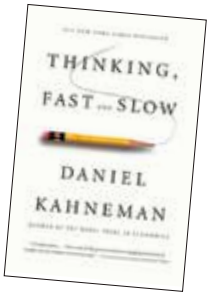


"The brain is soft," writes Connecticut neurosurgeon Katrina Firlik. "Some of my colleagues compare it to toothpaste, but that's not quite right." Rather, it's more like soft tofu. In this inside look at the profession, Firlik demythologizes the field and posits the brain surgeon as part scientist, part clinician, and part mechanic. As she recounts her background and describes her transition from neurosurgery resident to full-fledged surgeon in a male-dominated field, she details her daily exploits, which range from removing a nail from a carpenter's left frontal lobe to treating a boy with bacterial meningitis.

Firlik shatters the myth most of us hold of brain surgeons as superheroes: they are, she insists, merely masters of a trade. The author's engaging, witty insight into the profession, her layperson's explanation of complex medical terms and routine surgeries, and her compelling stories complete the picture of the first woman admitted to University of Pittsburgh Medical Center's neurosurgery residency program and offer a fascinating look into the oh-so-routine practices brain surgeons face daily. (★★★½ Sept/Oct 2006)

Thinking, Fast and Slow

By Daniel Kahneman (2011)



The science of economics relies on the assumption that human beings are rational decision makers. Work based on that assumption has led to powerful predictive models but also to harmful fallacies: after all, we all know at some level that people aren't as rational as they'd like for everyone to think. But in the 1970s, economists Daniel Kahneman and Amos Tversky conducted a series of bold experiments designed to document our "cognitive biases" and to use them to improve economic theory. Kahneman collects those experiments and lessons and describes a conflict between two metaphorical processes in the brain: the fast, intuitive, associative, primal, always on, but often wrong (what Kahneman calls "System 1") and the slow, methodical, rational, easily tired, often switched off ("System 2").

Kahneman, trained as a psychologist, won the Nobel Prize for Economics in 2002 and is considered one of the field's most influential thinkers. *Thinking, Fast and Slow* is his first book for a popular audience, and Kahneman hits his target, with pacing, structure, and anecdotes on a par with or even more engaging and enlightening than those of frequently cited popular authors on the subject like Malcolm Gladwell. It's an enlightening tome on how—fast or slow—we strive to make rational decisions in an irrational world. (★★★★ Mar/Apr 2012)

The Age of Insight

The Quest to Understand the Unconscious in Art, Mind, and Brain, from Vienna 1900 to the Present

By Eric R. Kandel (2012)

In *The Age of Insight*, Eric Kandel, a neuropsychiatrist and Nobel Prize winner in medicine, focuses on the rise of Modernism in Europe, particularly in the period between 1890 and 1918 in his beloved Vienna. While many of the explanations for the rise of the Modern in 20th-century thought focus on historical and cultural contexts, Kandel explores the role of the mind (his most important work has been in the field of memories and how we store them)—and our shifting understanding of that brilliant, baffling tool—in the creation of arts and its importance in the constant give-and-take of intellectual thought and social policy.

Kandel deftly walks the line between academic insight and popular anecdotes, bringing plenty of interesting examples to bear on his examination. "While brain sciences and the humanities will continue to have their own distinctive concerns," Kandel writes, "my purpose in this book is to illustrate how we can begin to focus the perspective of the science of the mind and the perspective of the humanities on certain intellectual problems and continue in the decade ahead the dialogue that began in Vienna 1900 as a quest to connect art, mind, and brain."

101 Theory Drive

A Neuroscientist's Quest for Memory

By Terry McDermott (2010)

In a small trailer located at 101 Theory Drive on the campus of the University of California at Irvine, Gary Lynch, a former psychologist and self-taught neuroscientist, hunts for the physical and biochemical mechanisms that create and control memories. Between 2005 and 2007, he granted unprecedented access to his research, his experiments, and his diverse band of graduate students and

postdocs to journalist Terry McDermott, who chronicles the fantastic successes, the gut-wrenching failures, and the intervening drudgery of Lynch's lab. McDermott also explores the evolution and inner workings of the brain and the history of neuroscience, marveling along the way at the complexity of the human mind as he describes Lynch's quest to unlock the brain's inscrutable secrets.

Although *101 Theory Drive* covers a significantly different terrain from that in McDermott's 2005 account of the 9/11 hijackers (*Perfect Soldiers: The 9/11 Hijackers, Who They Were, Why They Did It* [2005]), the author offers a riveting behind-the-scenes tour of modern science, including its egos, contentious debates, funding disasters, and extraordinary advancements. The story centers on science, and McDermott, with his crisp prose and clear explanations, skillfully guides readers through this technical—but always enjoyable—tale. The book's true star is the hard-drinking, foul-mouthed Lynch, whom McDermott clearly admires. Lynch's enthusiasm for his work is infectious, and readers will find much to admire in this thought-provoking testament to science and its devotees. (★★★★ July/Aug 2010)

The Optimism Bias

A Tour of the Irrationally Positive Brain
By Tali Sharot (2012)

Tali Sharot's research has focused on how emotion and social factors shape our perception of the world around us. Sharot's interest in the "optimism bias" began as an examination of the aftereffects of 9/11 on "how the brain tricks us into believing that our recollections of exceptionally emotional events … are as accurate as a video tape, even when we are utterly mistaken." Her surprising conclusion? Despite daily news to the contrary, 80 percent of us are optimists at heart.

Drawing on her own ongoing research, brain-imaging studies, and a host of anecdotes illustrating her contention that "We need to burst a giant bubble—the notion that we really perceive the world as it really is," Sharot wonders if Fridays really are better than Sundays, studies the downside of underestimating risk, and examines whether "self-fulfilling prophecies" really do tend to come true. The brain's hardwired habit of tricking us into imagining futures that have little to do with the less savory (and far more likely) reality, Sharot concludes, is both delusional and essential for survival because it constantly "paint[s] the most perfectly gray events in shades of pink."

Further Nonfiction Reading

INCOGNITO: THE SECRET LIVES OF THE BRAIN | DAVID EAGLEMAN (2011)

MOONWALKING WITH EINSTEIN: THE ART AND SCIENCE OF REMEMBERING EVERYTHING | JOSHUA FOER (★★★★ May/June 2011)

THE ORGANIZED MIND: THINKING STRAIGHT IN THE AGE OF INFORMATION OVERLOAD | DANIEL J. LEVITIN (2014)

HOW THE MIND WORKS | STEVEN PINKER (1997). See also *The Stuff of Thought: Language as a Window into Human Nature* (2007).

THE PSYCHOPATH TEST: A JOURNEY THROUGH THE MADNESS INDUSTRY | JON RONSON (2010)

THE MIND'S EYE | OLIVER SACKS (★★★★ Jan/Feb 2011). See also *Musicophilia: Tales of Music and the Brain* (★★★½ Jan/Feb 2008) and *Hallucinations* (★★★★ **SELECTION** Jan/Feb 2013).

Fiction

Blood Memory

By Greg Iles (2005)

Forensic odontologist Catherine "Cat" Ferry is in her element when she's assigned to four recent cases of murder and subsequent postmortem gnawings in New Orleans. During her investigation, Cat is suspended from the task force when she experiences crippling anxiety attacks and blackouts. Recalling a similar event to the New Orleans homicides from her own past, the shooting death of her father 20 years before, Cat returns to Natchez, Mississippi, and uncovers further evidence of that crime. Fighting her own demons—an alcohol problem, an ill-fated relationship with a married detective, and the dredging up of long-repressed memories—could bring Cat to a realization best left buried in the past.

Throughout a career spanning two decades and fifteen novels, Greg Iles (*Natchez Burning* [2014]) evokes the atmospherics and character development in James Lee Burke's Dave Robicheaux series and the fast-paced, intricately plotted procedurals of John Grisham, bringing a psychological intensity unmatched by either.

One Flew Over the Cuckoo's Nest

By Ken Kesey (1962)

With his terminal disdain for the rules, Randall Patrick McMurphy shakes up the status quo in an Oregon psychiatric hospital, where he's convinced authorities that he should serve his time for battery, a palatable alternative to prison. Never one to shy from a confrontation with authority, McMurphy antagonizes the infamous Nurse Ratched and her orderlies in events narrated by Chief Bromden, a Native American inmate who navigates the ward's daily challenges by pretending to be deaf and mute.

The chief Merry Prankster's first and still most read novel introduced Kesey to mainstream America, bridging the Beats and the burgeoning counterculture and spawning a 1975 big-screen cult classic starring Jack Nicholson (which likely remains the version of record for many younger readers). "The ingenious simplicity of Kesey's narrative approach was to treat the page as a proscenium stage," James Wolcott writes in a *Vanity Fair* retrospective of the novel and Kesey's influence. "Despite its impressionistic reveries, its invocations of the great wide American space beyond its scrubbed walls, *Cuckoo's Nest* conducts its dramatic business with an unabashed, cartoon-stroked theatricality almost entirely within the intense confines of its sanitarium."

Man Walks into a Room

By Nicole Krauss (2002)

Eight days after disappearing from a seemingly idyllic life in Manhattan, 30-something Columbia English

professor Samson Green is found wandering the Nevada desert with no recollection of his life after the age of 12. The result of a tumor pressing on his temporal lobe, Samson's amnesia forces him to relearn everything he should already know—particularly about the beautiful woman, Anna, who calls herself his wife. Samson seems not to mind the novelty of his drastically altered life, however, and assents to returning to the desert with Dr. Ray Malcolm for a series of memory-transfer experiments.

Krauss's debut novel garnered critical acclaim for its inventiveness and the author's gift for language that powerfully educes Samson's dislocation. "He spoke of human solitude, about the intrinsic loneliness of a sophisticated mind, one that is capable of reason and poetry but which grasps at straws when it comes to understanding another, a mind aware of the impossibility of absolute understanding," Krauss writes of the challenge of living without memory. "The difficulty of having a mind that understands that it will always be misunderstood."

Turn of Mind

By Alice LaPlante (2011)

My name is Dr. Jennifer White. I am sixty-four years old. I have dementia. When her lifelong friend and neighbor is found murdered with four fingers missing, White, a recently retired and widowed orthopedic surgeon, becomes the prime suspect. And who can blame police? The doctor's mind ravaged by Alzheimer's, she has no idea whether or not she committed the crime. In reconstructing the events of her life, White details lives that perhaps weren't what they seemed: an unfaithful husband, children with their own agendas and issues, a best friend who both comforted her and competed with her. On the verge of losing touch entirely, White (with the occasional help of her children) keeps a notebook to maintain her tenuous grasp on day-to-day life. Narrating her story through the distorted lens of her disease, she explores the transience of memory and secrets, the nature of love and friendship, and the shifting, illusory realities that define us all.

In her ambitious, poignant fiction debut, Alice LaPlante trains her gaze on disease, memory, and murder. With a timely hook and an intricate plot worthy of Alice Sebold's *The Lovely Bones* (2002) and Mark Haddon's *The Curious Incident of the Dog in the Night-Time* (2003), LaPlante portrays the degeneration of a brilliant intellectual mind from a wasting, ultimately fatal disease with a force that will resonate with readers. (★★★★ Sept/Oct 2011)

The Echo Maker

By Richard Powers (2006)

✦ NATIONAL BOOK AWARD
✦ PULITZER PRIZE FINALIST

When his truck careens off a road near Kearney, Nebraska, the 27-year-old driver, Mark Schluter, falls into a coma. He awakens with Capgras syndrome, a delusional disorder that prevents him from identifying his older sister, Karin, now his caretaker. Karin contacts cognitive neurologist Gerald Weber for help; about to suffer a professional and psychological breakdown, Weber demurs. Instead, Mark turns to his mysterious nurse, Barbara Gillespie, as he tries to decipher an enigmatic note left after the accident—presumably, by the person who saved him—and to understand the truth about the crash. As questions about personal identity and reality surface, the sandhill cranes make their spectacular annual migration.

In novels such as *The Gold Bug Variations* (1991) and *The Time of Our Singing* (2003), Richard Powers has proven himself to be a novelist of ideas, from artificial intelligence to corporate greed and classical music (see our Powers profile in the Sept/Oct 2006 issue). His ninth novel, which raises questions about neurology, instinct, memory, recognition, reality, faith, and a whole lot more, similarly "puts the pedal to the brain's metal" (*Los Angeles Times*). Through endless curiosity, masterful storytelling, and ruminations on the human soul and consciousness (represented by the migratory flight of sandhill cranes), Powers manifests his formidable literary talent. (★★★½ Jan/Febr 2007)

Foundation

By Isaac Asimov (1951)

The Galactic Empire has held sway for millennia. Still, Hari Seldon, the genius-mathematician behind the predictive science of psychohistory, understands that a dark age lasting for 30,000 years is on its way, followed by the rise of a second empire. The length of that dark age can be shortened to 1,000 years if Seldon and a hand-picked team of intellectuals, exiled to Terminus, are given rein to collect all of human knowledge into the *Encyclopedia Galactica*.

The opening salvo in perhaps the most famous science fiction series ever, *Foundation* was followed by *Foundation and Empire* (1952) and *Second Foundation* (1953), and the books won the Hugo Award in 1966 for "Best All-Time Series" (more than three decades later, the series and related books total 14). Positing science as the best means of exploring the power of the human mind when set against the uncertainty of the future, Asimov inspired generations of young science fiction readers to pursue careers in the study of the mind. The character of Hari Seldon is still the gold standard upon which many of today's science fiction central characters are based. "Stories published before *Foundation* belong to the old line," science fiction editor Donald Wollheim wrote of the influence of the series on later work. "The stories published after belong to 'modern' science fiction."

Further Fiction Reading

MOON PALACE | PAUL AUSTER (1989). See also *Travels in the Scriptorium* (2006).

LEXICON | MAX BARRY (★★★★ Sept/Oct 2013)

SHARP OBJECTS | GILLIAN FLYNN (★★★★ **SELECTION** Jan/Feb 2007)

SHUTTER ISLAND | DENNIS LEHANE (2003)

THE BELL JAR | SYLVIA PLATH (1963)

THE TERMINAL EXPERIMENT | ROBERT J. SAWYER (1995). See also *Mindscan* (2005). ■