

From Bacteria To Bach And Back The Evolution Of Minds

This collection of 17 essays by the author offers a comprehensive theory of mind, encompassing traditional issues of consciousness and free will. Using careful arguments and ingenious thought-experiments, the author exposes familiar preconceptions and hobbling institutions. This collection of 17 essays by the author offers a comprehensive theory of mind, encompassing traditional issues of consciousness and free will. Using careful arguments and ingenious thought-experiments, the author exposes familiar preconceptions and hobbling institutions. The essays are grouped into four sections: Intentional Explanation and Attributions of Mentality; The Nature of Theory in Psychology; Objects of Consciousness and the Nature of Experience; and Free Will and Personhood.

Unraveling the mystery of a master spy's death by following pipelines and mapping wars in the Middle East In 1947, Daniel Dennett, America's sole master spy in the Middle East, was dispatched to Saudi Arabia to study the route of the proposed Trans-Arabian Pipeline. It would be his last assignment. A plane carrying him to Ethiopia went down, killing everyone on board. Today, Dennett is recognized by the CIA as a "Fallen Star" and an important figure in US intelligence history. Yet the true cause of his death remains clouded in secrecy. In *The Crash of Flight 3804*, investigative journalist Charlotte Dennett digs into her father's postwar counterintelligence work, which pitted him against America's wartime allies—the British, French, and Russians—in a covert battle for geopolitical and economic influence in the Middle East. Through stories and maps, she reveals how feverish competition among superpower intelligence networks, military, and Big Oil interests have fueled indiscriminate attacks and targeted killings that continue to this day—from Jamal Khashoggi's murder to drone strikes. The book delivers an irrefutable indictment of these devastating forces and how the brutal violence they incite has shaped the Middle East and birthed an era of endless wars. *The Crash of Flight 3804* provides important context for understanding the region, while bringing new questions to the fore: To what lengths has the United States negotiated with the Taliban, Al Qaeda, and ISIS to secure Big Oil's holdings in Syria, Iraq, and Yemen? Was the Pentagon's goal of defeating ISIS a fraudulent pretext for America's occupation of Syrian eastern provinces and a land grab for oil? What part does Ukraine play in the energy-dominance struggle between the US and Russia? Did the infamous double agent Kim Philby, who worked for the British while secretly spying for the Russians, have anything to do with Dennett's death? Why have the US and China made North Africa the next major battleground in the Great Game for Oil? Part personal pilgrimage, part deft critique, Dennett's insightful reportage examines what happens to international relations when oil wealth hangs in the balance and shines a glaring light on what so many have actually been dying for.

In a book that is both groundbreaking and accessible, Daniel C. Dennett, whom Chet Raymo of *The Boston Globe* calls "one of the most provocative thinkers on the planet," focuses his unerringly logical mind on the theory of natural selection, showing how Darwin's great idea transforms and illuminates our traditional view of humanity's place in the universe. Dennett vividly describes the theory itself and then extends Darwin's vision with impeccable arguments to their often surprising conclusions, challenging the views of some of the most famous scientists of our day.

The modern materialist approach to life has conspicuously failed to explain such central mind-related features of our world as consciousness, intentionality, meaning, and value. This failure to account for something so integral to nature as mind, argues philosopher Thomas Nagel, is a major problem, threatening to unravel the entire naturalistic world picture, extending to biology, evolutionary theory, and cosmology. Since minds are features of biological systems that have developed through evolution, the standard materialist version of evolutionary biology is fundamentally incomplete. And the cosmological history that led to the origin of life and the coming into existence of the conditions for evolution cannot be a merely materialist history, either. An adequate conception of nature would have to explain the appearance in the universe of materially irreducible conscious minds, as such. Nagel's skepticism is not based on religious belief or on a belief in any definite alternative. In *Mind and Cosmos*, he does suggest that if the materialist account is wrong, then principles of a different kind may also be at work in the history of nature, principles of the growth of order that are in their logical form teleological rather than mechanistic. In spite of the great achievements of the physical sciences, reductive materialism is a world view ripe for displacement. Nagel shows that to recognize its limits is the first step in looking for alternatives, or at least in being open to their possibility.

A New York Times Notable Book of 2020 A Bloomberg Best Non-Fiction Book of 2020 A Behavioral Scientist Notable Book of 2020 A Human Behavior & Evolution Society Must-Read Popular Evolution Book of 2020 A bold, epic account of how the co-evolution of psychology and culture created the peculiar Western mind that has profoundly shaped the modern world. Perhaps you are WEIRD: raised in a society that is Western, Educated, Industrialized, Rich, and Democratic. If so, you're rather psychologically peculiar. Unlike much of the world today, and most people who have ever lived, WEIRD people are highly individualistic, self-obsessed, control-oriented, nonconformist, and analytical. They focus on themselves—their attributes, accomplishments, and aspirations—over their relationships and social roles. How did WEIRD populations become so psychologically distinct? What role did these psychological differences play in the industrial revolution and the global expansion of Europe during the last few centuries? In *The WEIRDest People in the World*, Joseph Henrich draws on cutting-edge research in anthropology, psychology, economics, and evolutionary biology to explore these questions and more. He illuminates the origins and evolution of family structures, marriage, and religion, and the profound impact these cultural transformations had on human psychology. Mapping these shifts through ancient history and late antiquity, Henrich reveals that the most fundamental institutions of kinship and marriage changed dramatically under pressure from the Roman Catholic Church. It was these changes that gave rise to the WEIRD psychology that would coevolve with impersonal markets, occupational specialization, and free competition—laying the foundation for the modern world. Provocative and engaging in both its broad scope and its surprising details, *The WEIRDest People in the World* explores how culture, institutions, and psychology shape one another, and explains what this means for both our most personal sense of who we are as individuals and also the large-scale social, political, and economic forces that drive human history. Includes black-and-white illustrations.

"A witty, learned, authoritative survey of philosophical thought." --The New York Times

Book Review The first authoritative and accessible single-volume history of philosophy to cover both Western and Eastern traditions, from one of the world's most eminent thinkers The story of philosophy is an epic tale, spanning civilizations and continents. It explores some of the most creative minds in history. But not since the long-popular classic by Bertrand Russell, *A History of Western Philosophy*, published in 1945, has there been a comprehensive and entertaining single-volume history of this great, intellectual, world-shaping journey. With characteristic clarity and elegance, A. C. Grayling takes the reader from the age of the Buddha, Confucius, and Socrates through Christianity's capture of the European mind, from the Renaissance and Enlightenment on to Mill, Nietzsche, Sartre and, finally, philosophy today. Surveying in tandem the great philosophical traditions of India, China, and the Persian-Arabic world, and astonishing in its range and accessibility, Grayling's *The History of Philosophy* is destined to be a landmark work.

It has long been one of the most fundamental problems of philosophy, and it is now, John Searle writes, "the most important problem in the biological sciences": What is consciousness? Is my inner awareness of myself something separate from my body? In what began as a series of essays in *The New York Review of Books*, John Searle evaluates the positions on consciousness of such well-known scientists and philosophers as Francis Crick, Gerald Edelman, Roger Penrose, Daniel Dennett, David Chalmers, and Israel Rosenfield. He challenges claims that the mind works like a computer, and that brain functions can be reproduced by computer programs. With a sharp eye for confusion and contradiction, he points out which avenues of current research are most likely to come up with a biological examination of how conscious states are caused by the brain. Only when we understand how the brain works will we solve the mystery of consciousness, and only then will we begin to understand issues ranging from artificial intelligence to our very nature as human beings.

Besides being cruel and inhumane, torture does not work the way torturers assume it does. As Shane O'Mara's account of the neuroscience of suffering reveals, extreme stress creates profound problems for memory, mood, and thinking, and sufferers predictably produce information that is deeply unreliable, or even counterproductive and dangerous.

"Brilliant...as audacious as its title...Mr. Dennett's exposition is nothing short of brilliant." --George Johnson, *New York Times Book Review* *Consciousness Explained* is a full-scale exploration of human consciousness. In this landmark book, Daniel Dennett refutes the traditional, commonsense theory of consciousness and presents a new model, based on a wealth of information from the fields of neuroscience, psychology, and artificial intelligence. Our current theories about conscious life-of people, animal, even robots--are transformed by the new perspectives found in this book.

'It's a brilliant book... There are lessons in every paragraph... Get it now.' Chris Evans
'Wonderous and wild. I loved this book' James Nestor, bestselling author of *Breath*
'Moving, raw and unflinching' Julia Samuel, bestselling author of *This Too Shall Pass*
'Incredible storytelling' Dr Rangan Chatterjee, bestselling author of *Feel Better* in 5

_ How do you carry on when things go deadly wrong? When Dr Rahul Jandial operated on Karina, an eleven-year-old girl whose spinal cord was splitting in two, he had to make an impossible decision. He followed his head over his gut and Karina was left permanently

paralysed, altering both patient and surgeon's lives for ever. This decision would haunt Rahul for decades, a constant reminder of the fine line between saving and damaging a life. As one of the world's leading brain surgeons, Rahul is the last hope for patients with extreme forms of cancer. In treating them, he has observed humanity at its most raw and most robust. He has journeyed to unimaginable extremes with them, guiding them through the darkest moments of their lives. *Life on a Knife's Edge* is Rahul's beautifully written account of the resilience, courage and belief he has witnessed in his patients, and the lessons about human nature he has learned from them. It is about the impossible choices he has to make, and the fateful consequences he is forced to live with. From challenging the ethics of surgical practices, to helping a patient with locked-in syndrome communicate her dying wish to her family, Rahul shares his extraordinary experiences, revealing the depths of a surgeon's psyche that is continuously pushed to its limits.

The New York Times bestseller – a “crystal-clear, constantly engaging” (Jared Diamond) exploration of the role that religious belief plays in our lives and our interactions. For all the thousands of books that have been written about religion, few until this one have attempted to examine it scientifically: to ask why—and how—it has shaped so many lives so strongly. Is religion a product of blind evolutionary instinct or rational choice? Is it truly the best way to live a moral life? Ranging through biology, history, and psychology, Daniel C. Dennett charts religion's evolution from “wild” folk belief to “domesticated” dogma. Not an antireligious screed but an unblinking look beneath the veil of orthodoxy, *Breaking the Spell* will be read and debated by believers and skeptics alike.

Through the use of such “folk” concepts as belief, desire, intention, and expectation, Daniel Dennett asserts in this first full scale presentation of a theory of intentionality that he has been developing for almost twenty years.

The philosophy professor behind *Breaking the Spell* and *Consciousness Explained* offers exercises and tools to stretch the mind, offering new ways to consider, discuss and argue positions on dangerous subject matter including evolution, the meaning of life and free will. Essays from some of the 20th century's greatest thinkers explore topics as diverse as artificial intelligence, evolution, science fiction, philosophy, reductionism, and consciousness, presenting a variety of conflicting visions of the self and the soul. Illustrations.

In this wise and original book, science writer and Zen priest Steve Hagen helps us to perceive the world as it is, not merely as we conceive it to be. This revised and updated edition includes new scientific understandings and clarifications of some of the more complex ideas. “Read this book: it will change how you look at things.” – Nick Herbert, Ph.D., author of *Quantum Reality* A new collection of wide-ranging essays from one of cognitive science's most distinguished figures. Minds are complex artifacts, partly biological and partly social; only a unified, multidisciplinary approach will yield a realistic theory of how they came into existence and how they work. One of the foremost workers in this multidisciplinary field is Daniel Dennett. This book brings together his essays on the philosophy of mind, artificial intelligence, and cognitive ethology that appeared in inaccessible journals from 1984 to 1996. Highlights include “Can Machines Think?,” “The Unimagined Preposterousness of Zombies,” “Artificial Life as Philosophy,” and “Animal Consciousness: What Matters and Why.” Collected in a single volume, the essays are now available to a wider audience.

A philosopher dons a wet suit and journeys into the depths of consciousness in *Other Minds*. Although mammals and birds are widely regarded as the smartest creatures on earth, it has lately become clear that a very distant branch of the tree of life has also sprouted higher intelligence: the cephalopods, consisting of the squid, the cuttlefish, and above all the octopus. In captivity, octopuses have been known to identify individual human keepers, raid neighboring tanks for food, turn off lightbulbs by spouting jets of water, plug drains, and make daring escapes. How is it that a creature with such gifts evolved through an evolutionary lineage so

radically distant from our own? What does it mean that evolution built minds not once but at least twice? The octopus is the closest we will come to meeting an intelligent alien. What can we learn from the encounter? In *Other Minds*, Peter Godfrey-Smith, a distinguished philosopher of science and a skilled scuba diver, tells a bold new story of how subjective experience crept into being—how nature became aware of itself. As Godfrey-Smith stresses, it is a story that largely occurs in the ocean, where animals first appeared. Tracking the mind's fitful development, Godfrey-Smith shows how unruly clumps of seaborne cells began living together and became capable of sensing, acting, and signaling. As these primitive organisms became more entangled with others, they grew more complicated. The first nervous systems evolved, probably in ancient relatives of jellyfish; later on, the cephalopods, which began as inconspicuous mollusks, abandoned their shells and rose above the ocean floor, searching for prey and acquiring the greater intelligence needed to do so. Taking an independent route, mammals and birds later began their own evolutionary journeys. But what kind of intelligence do cephalopods possess? Drawing on the latest scientific research and his own scuba-diving adventures, Godfrey-Smith probes the many mysteries that surround the lineage. How did the octopus, a solitary creature with little social life, become so smart? What is it like to have eight tentacles that are so packed with neurons that they virtually "think for themselves"? What happens when some octopuses abandon their hermit-like ways and congregate, as they do in a unique location off the coast of Australia? By tracing the question of inner life back to its roots and comparing human beings with our most remarkable animal relatives, Godfrey-Smith casts crucial new light on the octopus mind—and on our own.

Original essays written by philosophers and scientists and dealing with philosophical questions arising from work in evolutionary biology and artificial intelligence.

A short and accessible introduction to philosophy of science for students and researchers across the life sciences.

From Bacteria to Bach and Back: The Evolution of Minds W. W. Norton & Company

Gould shows why a more accurate way of understanding our world is to look at a given subject within its own context, to see it as a part of a spectrum of variation and then to reconceptualize trends as expansion or contraction of this "full house" of variation, and not as the progress or degeneration of an average value, or single thing.

"A supremely enjoyable, intoxicating work." —Nature How did we come to have minds? For centuries, poets, philosophers, psychologists, and physicists have wondered how the human mind developed its unrivaled abilities. Disciples of Darwin have explained how natural selection produced plants, but what about the human mind? In *From Bacteria to Bach and Back*, Daniel C. Dennett builds on recent discoveries from biology and computer science to show, step by step, how a comprehending mind could in fact have arisen from a mindless process of natural selection. A crucial shift occurred when humans developed the ability to share memes, or ways of doing things not based in genetic instinct. Competition among memes produced thinking tools powerful enough that our minds don't just perceive and react, they create and comprehend. An agenda-setting book for a new generation of philosophers and scientists, *From Bacteria to Bach and Back* will delight and entertain all those curious about how the mind works.

How the meaningless process of natural selection produces purposeful beings

who find meaning in the world. In *From Darwin to Derrida*, evolutionary biologist David Haig explains how a physical world of matter in motion gave rise to a living world of purpose and meaning. Natural selection, a process without purpose, gives rise to purposeful beings who find meaning in the world. The key to this, Haig proposes, is the origin of mutable “texts”—genes—that preserve a record of what has worked in the world. These texts become the specifications for the intricate mechanisms of living beings. Haig draws on a wide range of sources—from Laurence Sterne's *Tristram Shandy* to Immanuel Kant's *Critique of the Power of Judgment* to the work of Jacques Derrida to the latest findings on gene transmission, duplication, and expression—to make his argument. Genes and their effects, he explains, are like eggs and chickens. Eggs exist for the sake of becoming chickens and chickens for the sake of laying eggs. A gene's effects have a causal role in determining which genes are copied. A gene (considered as a lineage of material copies) persists if its lineage has been consistently associated with survival and reproduction. Organisms can be understood as interpreters that link information from the environment to meaningful action in the environment. Meaning, Haig argues, is the output of a process of interpretation; there is a continuum from the very simplest forms of interpretation, instantiated in single RNA molecules near the origins of life, to the most sophisticated. Life is interpretation—the use of information in choice.

Combining ideas from philosophy, artificial intelligence, and neurobiology, Daniel Dennett leads the reader on a fascinating journey of inquiry, exploring such intriguing possibilities as: Can any of us really know what is going on in someone else's mind? What distinguishes the human mind from the minds of animals, especially those capable of complex behavior? If such animals, for instance, were magically given the power of language, would their communities evolve an intelligence as subtly discriminating as ours? Will robots, once they have been endowed with sensory systems like those that provide us with experience, ever exhibit the particular traits long thought to distinguish the human mind, including the ability to think about thinking? Dennett addresses these questions from an evolutionary perspective. Beginning with the macromolecules of DNA and RNA, the author shows how, step-by-step, animal life moved from the simple ability to respond to frequently recurring environmental conditions to much more powerful ways of beating the odds, ways of using patterns of past experience to predict the future in never-before-encountered situations. Whether talking about robots whose video-camera “eyes” give us the powerful illusion that “there is somebody in there” or asking us to consider whether spiders are just tiny robots mindlessly spinning their webs of elegant design, Dennett is a master at finding and posing questions sure to stimulate and even disturb.

A landmark book in the debate over free will that makes the case for compatibilism. In this landmark 1984 work on free will, Daniel Dennett makes a case for compatibilism. His aim, as he writes in the preface to this new edition, was a cleanup job, “saving everything that mattered about the everyday concept

of free will, while jettisoning the impediments.” In *Elbow Room*, Dennett argues that the varieties of free will worth wanting—those that underwrite moral and artistic responsibility—are not threatened by advances in science but distinguished, explained, and justified in detail. Dennett tackles the question of free will in a highly original and witty manner, drawing on the theories and concepts of fields that range from physics and evolutionary biology to engineering, automata theory, and artificial intelligence. He shows how the classical formulations of the problem in philosophy depend on misuses of imagination, and he disentangles the philosophical problems of real interest from the “family of anxieties” in which they are often enmeshed—imaginary agents and bogeymen, including the Peremptory Puppeteer, the Nefarious Neurosurgeon, and the Cosmic Child Whose Dolls We Are. Putting sociobiology in its rightful place, he concludes that we can have free will and science too. He explores reason, control and self-control, the meaning of “can” and “could have done otherwise,” responsibility and punishment, and why we would want free will in the first place. A fresh reading of Dennett's book shows how much it can still contribute to current discussions of free will. This edition includes as its afterword Dennett's 2012 Erasmus Prize essay.

An examination of the two most radical dissociation syndromes of the human pain experience—pain without painfulness and painfulness without pain—and what they reveal about the complex nature of pain and its sensory, cognitive, and behavioral components. In *Feeling Pain and Being in Pain*, Nikola Grahek examines two of the most radical dissociation syndromes to be found in human pain experience: pain without painfulness and painfulness without pain. Grahek shows that these two syndromes—the complete dissociation of the sensory dimension of pain from its affective, cognitive, and behavioral components, and its opposite, the dissociation of pain's affective components from its sensory-discriminative components (inconceivable to most of us but documented by ample clinical evidence)—have much to teach us about the true nature and structure of human pain experience. Grahek explains the crucial distinction between feeling pain and being in pain, defending it on both conceptual and empirical grounds. He argues that the two dissociative syndromes reveal the complexity of the human pain experience: its major components, the role they play in overall pain experience, the way they work together, and the basic neural structures and mechanisms that subserve them. *Feeling Pain and Being in Pain* does not offer another philosophical theory of pain that conclusively supports or definitively refutes either subjectivist or objectivist assumptions in the philosophy of mind. Instead, Grahek calls for a less doctrinaire and more balanced approach to the study of mind–brain phenomena.

What is it like to be a preacher or rabbi who no longer believes in God? In this expanded and updated edition of their groundbreaking study, Daniel C. Dennett and Linda LaScola comprehensively and sensitively expose an inconvenient truth that religious institutions face in the new transparency of the information age—the

phenomenon of clergy who no longer believe what they publicly preach. In confidential interviews, clergy from across the ministerial spectrum—from liberal to literal—reveal how their lives of religious service and study have led them to a truth inimical to their professed beliefs and profession. Although their personal stories are as varied as the denominations they once represented, or continue to represent—whether Catholic, Baptist, Episcopalian, Methodist, Mormon, Pentecostal, or any of numerous others—they give voice not only to their own struggles but also to those who similarly suffer in tender and lonely silence. As this study poignantly and vividly reveals, their common journey has far-reaching implications not only for their families, their congregations, and their communities—but also for the very future of religion.

A new theory about the origins of consciousness that finds learning to be the driving force in the evolutionary transition to basic consciousness. What marked the evolutionary transition from organisms that lacked consciousness to those with consciousness—to minimal subjective experiencing, or, as Aristotle described it, “the sensitive soul”? In this book, Simona Ginsburg and Eva Jablonka propose a new theory about the origin of consciousness that finds learning to be the driving force in the transition to basic consciousness. Using a methodology similar to that used by scientists when they identified the transition from non-life to life, Ginsburg and Jablonka suggest a set of criteria, identify a marker for the transition to minimal consciousness, and explore the far-reaching biological, psychological, and philosophical implications. After presenting the historical, neurobiological, and philosophical foundations of their analysis, Ginsburg and Jablonka propose that the evolutionary marker of basic or minimal consciousness is a complex form of associative learning, which they term unlimited associative learning (UAL). UAL enables an organism to ascribe motivational value to a novel, compound, non-reflex-inducing stimulus or action, and use it as the basis for future learning. Associative learning, Ginsburg and Jablonka argue, drove the Cambrian explosion and its massive diversification of organisms. Finally, Ginsburg and Jablonka propose symbolic language as a similar type of marker for the evolutionary transition to human rationality—to Aristotle's “rational soul.”

An original, endlessly thought-provoking, and controversial look at the nature of consciousness and identity argues that the key to understanding selves and consciousness is the “strange loop,” a special kind of abstract feedback loop inhabiting our brains.

Explores a range of disciplines to investigate the nature of wisdom, identifying ancient-world views, its role in philosophy, and the scientific findings from the past half century that have offered insight into the characteristics of historical figures.

Can there be freedom and free will in a deterministic world? Renowned philosopher Daniel Dennett emphatically answers “yes!” Using an array of provocative formulations, Dennett sets out to show how we alone among the animals have evolved minds that give us free will and morality. Weaving a richly detailed narrative, Dennett explains in a series of strikingly original arguments—drawing upon evolutionary biology, cognitive neuroscience, economics, and philosophy—that far from being an enemy of traditional explorations of freedom, morality, and meaning, the evolutionary perspective can be an indispensable ally. In *Freedom Evolves*, Dennett seeks to place ethics on the foundation it deserves: a realistic, naturalistic, potentially unified vision of our place in nature.

Presenting the cultural and neuronal forces that power our distinctively human modes of awareness, the author proposes that the human mind is a hybrid product of interweaving a super-complex form of matter (the brain) with an invisible symbolic web (culture) to form a cognitive network. Reprint. 11,500 first printing.

Some thinkers argue that our best scientific theories about the world prove that free will is an illusion. Others disagree. The concept of free will is profoundly important to our self-understanding, our interpersonal relationships, and our moral and legal practices. If it turns out that no one is ever free and morally responsible, what would that mean for society, morality, meaning, and the law? *Just Deserts* brings together two philosophers – Daniel C. Dennett and Gregg D. Caruso – to debate their respective views on free will, moral responsibility, and legal punishment. In three extended conversations, Dennett and Caruso present their arguments for and against the existence of free will and debate their implications. Dennett argues that the kind of free will required for moral responsibility is compatible with determinism – for him, self-control is key; we are not responsible for becoming responsible, but are responsible for staying responsible, for keeping would-be puppeteers at bay. Caruso takes the opposite view, arguing that who we are and what we do is ultimately the result of factors beyond our control, and because of this we are never morally responsible for our actions in the sense that would make us truly deserving of blame and praise, punishment and reward. These two leading thinkers introduce the concepts central to the debate about free will and moral responsibility by way of an entertaining, rigorous and sometimes heated philosophical dialogue. What emerges is a clear account of the latest thinking on free will, and what is at stake for our moral and legal practices.

The Nobel Prize-winning scientist's elegant explanation of the fundamental ideas in biology and their uses today. The renowned biologist Paul Nurse has spent his career revealing how living cells work. In *What Is Life?*, he takes up the challenge of describing what it means to be alive in a way that every reader can understand. It is a shared journey of discovery; step-by-step Nurse illuminates five great ideas that underpin biology—the Cell, the Gene, Evolution by Natural Selection, Life as Chemistry, and Life as Information. He introduces the scientists who made the most important advances, and, using his personal experiences in and out of the lab, he shares with us the challenges, the lucky breaks, and the thrilling eureka moments of discovery. Nurse writes with delight at life's richness and with a sense of the urgent role of biology in our time. To survive the challenges that face us all today—climate change, pandemic, loss of biodiversity and food security—it is vital that we all understand what life is.

First published in 2002. Routledge is an imprint of Taylor & Francis, an informa company. In the years since Daniel Dennett's influential *Consciousness Explained* was published in 1991, scientific research on consciousness has been a hotly contested battleground of rival theories—"so rambunctious," Dennett observes, "that several people are writing books just about the tumult." With *Sweet Dreams*, Dennett returns to the subject for "revision and renewal" of his theory of consciousness, taking into account major empirical advances in the field since 1991 as well as recent theoretical challenges. In *Consciousness Explained*, Dennett proposed to replace the ubiquitous but bankrupt Cartesian Theater model (which posits a privileged place in the brain where "it all comes together" for the magic show of consciousness) with the Multiple Drafts Model. Drawing on psychology, cognitive neuroscience, and artificial intelligence, he asserted that human consciousness is essentially the mental software that reorganizes the functional architecture of the brain. In *Sweet Dreams*, he recasts the Multiple Drafts Model as the "fame in the brain" model, as a background against which to examine the philosophical issues that "continue to bedevil the field." With his usual clarity and brio, Dennett enlivens his arguments with a variety of vivid examples. He isolates the "Zombic Hunch" that distorts much of the theorizing of both philosophers and scientists, and defends heterophenomenology, his "third-person" approach to the science of consciousness, against persistent misinterpretations and objections. The old challenge of Frank Jackson's thought experiment about Mary the color scientist is given a new rebuttal in the form of "RoboMary," while his discussion of a famous card trick, "The Tuned Deck," is designed to show that David Chalmers's Hard Problem is probably just a figment of theorists'

misexploited imagination. In the final essay, the "intrinsic" nature of "qualia" is compared with the naively imagined "intrinsic value" of a dollar in "Consciousness—How Much is That in Real Money?"

National Book Award Finalist: "This man's ideas may be the most influential, not to say controversial, of the second half of the twentieth century."—Columbus Dispatch At the heart of this classic, seminal book is Julian Jaynes's still-controversial thesis that human consciousness did not begin far back in animal evolution but instead is a learned process that came about only three thousand years ago and is still developing. The implications of this revolutionary scientific paradigm extend into virtually every aspect of our psychology, our history and culture, our religion—and indeed our future. "Don't be put off by the academic title of Julian Jaynes's *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. Its prose is always lucid and often lyrical...he unfolds his case with the utmost intellectual rigor."—The New York Times "When Julian Jaynes . . . speculates that until late in the twentieth millennium BC men had no consciousness but were automatically obeying the voices of the gods, we are astounded but compelled to follow this remarkable thesis."—John Updike, *The New Yorker* "He is as startling as Freud was in *The Interpretation of Dreams*, and Jaynes is equally as adept at forcing a new view of known human behavior."—American Journal of Psychiatry

A respected physicist presents a survey of related discoveries, from Plato and Pythagoras up to the present, that explore how intertwined ideas about beauty and art are with scientific understandings of the cosmos.

'Required reading for anyone remotely curious about how they came to be remotely curious' Observer 'Enthralling' Spectator What is human consciousness and how is it possible? These questions fascinate thinking people from poets and painters to physicists, psychologists, and philosophers. This is Daniel C. Dennett's brilliant answer, extending perspectives from his earlier work in surprising directions, exploring the deep interactions of evolution, brains and human culture. Part philosophical whodunnit, part bold scientific conjecture, this landmark work enlarges themes that have sustained Dennett's career at the forefront of philosophical thought. In his inimitable style, laced with wit and thought experiments, Dennett shows how culture enables reflection by installing a profusion of thinking tools, or memes, in our brains, and how language turbocharges this process. The result: a mind that can comprehend the questions it poses, has emerged from a process of cultural evolution. An agenda-setting book for a new generation of philosophers and thinkers, *From Bacteria to Bach and Back* is essential for anyone who hopes to understand human creativity in all its applications.

Science world luminary John Brockman assembles twenty-five of the most important scientific minds, people who have been thinking about the field artificial intelligence for most of their careers, for an unparalleled round-table examination about mind, thinking, intelligence and what it means to be human. "Artificial intelligence is today's story--the story behind all other stories. It is the Second Coming and the Apocalypse at the same time: Good AI versus evil AI." --John Brockman More than sixty years ago, mathematician-philosopher Norbert Wiener published a book on the place of machines in society that ended with a warning: "we shall never receive the right answers to our questions unless we ask the right questions.... The hour is very late, and the choice of good and evil knocks at our door." In the wake of advances in unsupervised, self-improving machine learning, a small but influential community of thinkers is considering Wiener's words again. In *Possible Minds*, John Brockman gathers their disparate visions of where AI might be taking us. The fruit of the long history of Brockman's profound engagement with the most important scientific minds who have been thinking about AI--from Alison Gopnik and David Deutsch to Frank Wilczek and Stephen Wolfram--*Possible Minds* is an ideal introduction to the landscape of crucial issues AI presents. The collision between opposing perspectives is salutary and exhilarating; some of these figures, such as computer scientist Stuart Russell, Skype co-founder Jaan Tallinn, and physicist Max Tegmark, are

deeply concerned with the threat of AI, including the existential one, while others, notably robotics entrepreneur Rodney Brooks, philosopher Daniel Dennett, and bestselling author Steven Pinker, have a very different view. Serious, searching and authoritative, Possible Minds lays out the intellectual landscape of one of the most important topics of our time.

The crucifix is in! You can fool most of the people most of the time. In The God Con, Lee Moller, a life-long atheist and skeptic, looks at organized religion through the lens of the con. Organized religion has been selling an invisible product, that it never has to deliver, for thousands of years. It has given us bigotry, rampant pedophilia, terrorism, and bloodshed beyond imagining. And its acolytes have, in turn, given organized religion power over their bank accounts, their reproduction, and their very "souls".

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