Consciousness And The Brain Deciphering How The Brain Codes Our Thoughts 9 Cds

Consciousness ExplainedConsciousThe UniverseThe Neurology of ConsciousnessThe Quest for ConsciousnessThe Consciousness InstinctIn the Mind FieldsHuman and Machine ConsciousnessThe New Science of ConsciousnessThe MindIn the Theater of ConsciousnessQuantum Physics of ConsciousnessBrain, Mind and Consciousness in the History of NeuroscienceConsciousness and the Social BrainThe Deep History of OurselvesThe Future of the BrainA Brain for NumbersRethinking Consciousness: A Scientific Theory of Subjective ExperienceConsciousnessSoul DustInfinite JestConsciousness and the BrainThe Ego TunnelYour Brain Is a Time Machine: The Neuroscience and Physics of TimeThe Tell-tale BrainSelf Comes to MindHow We LearnThe Neuroscience of IntelligenceThe Evolution of the Sensitive SoulThe Age of InsightThe Idea of the BrainThe Cognitive Neuroscience of ConsciousnessInterdisciplinary Perspectives on Consciousness and the SelfIn Search of Memory: The Emergence of a New Science of MindThe Feeling of Life ItselfKnow ThisReading in the BrainWho's in Charge?Consciousness RegainedThe Ravenous Brain

Consciousness Explained

What is consciousness and how can a brain, a mere collection of neurons, create it? In Consciousness and the Social Brain, Princeton neuroscientist Michael Graziano lays out an audacious new theory to account for the deepest mystery of them all. The human brain has evolved a complex circuitry that allows it to be socially intelligent. This social machinery has only just begun to be studied in detail. One function of this circuitry is to attribute awareness to others: to compute that person Y is aware of thing X. In Graziano's theory, the machinery that attributes awareness to others also attributes it to oneself. Damage that machinery and you disrupt your own awareness. Graziano discusses the science, the evidence, the philosophy, and the surprising implications of this new theory.

Conscious

How is consciousness possible? What biological purpose does it serve? And why do we value it so highly? In Soul Dust, the psychologist Nicholas Humphrey, a leading figure in consciousness research, proposes a startling new theory. Consciousness, he argues, is nothing less than a magical-mystery show that we stage for ourselves inside our own heads. This self-made show lights up the world for us and makes us feel special and transcendent. Thus consciousness paves the way for spirituality, and allows us, as human beings, to reap the rewards, and anxieties, of living in what Humphrey calls the "soul niche.? Tightly argued, intellectually gripping, and a joy to read, Soul Dust provides answers to the deepest questions.

It shows how the problem of consciousness merges with questions that obsess us all--how life should be lived and the fear of death. Resting firmly on neuroscience and evolutionary theory, and drawing a wealth of insights from philosophy and literature, Soul Dust is an uncompromising yet life-affirming work--one that never loses sight of the majesty and wonder of consciousness.

The Universe

John Brockman brings together the world's best-known physicists and science writers—including Brian Greene, Walter Isaacson, Nobel Prize-winner Frank Wilczek, Benoit Mandelbrot, and Martin Rees—to explain the universe in all wondrous splendor. In The Universe, today's most influential science writers explain the science behind our evolving understanding of the universe and everything in it, including the cutting edge research and discoveries that are shaping our knowledge. Lee Smolin reveals how math and cosmology are helping us create a theory of the whole universe. Benoit Mandelbrot looks back on a career devoted to fractal geometry. Neil Turok analyzes the fundamental laws of nature, what came before the big bang, and the possibility of a unified theory. Seth Lloyd investigates the impact of computational revolutions and the informational revolution. Lawrence Krauss provides fresh insight into gravity, dark matter, and the energy of empty space. Brian Greene and Walter Isaacson illuminate the genius who revolutionized modern science: Albert Einstein. And much more. Explore the universe with some of today's greatest minds: what it is, how it came into being, and what may happen next.

The Neurology of Consciousness

The Quantum Physics of the Mind, Explained. Table of Contents 1. The Conscious Observer in the Quantum Experiment Fred Kuttner and Bruce Rosenblum, 2. Quantum Reality and Mind. Henry P. Stapp, 3. Cosmos and Quantum: Frontiers for the Future. Menas Kafatos, Schmid 4. Neoclassical Cosmology, Cosmos and Quantum. Theodore Walker Jr., 5. Can Discoverability Help Us Understand Cosmology? Nicholas Beale, 6. On Meaning, Consciousness and Quantum Physics. Yair Neuman, and Boaz Tamir, 7. Quantum Reality and Evolution Theory. Lothar Schafer, 8. Four Perspectives on Consciousness. Varadaraja V. Raman, 9. Synchronicity, Quantum Information and the Psyche. Francois Martin, Ph.D., Federico Carminati, Giuliana Galli Carminati, 10. Speculations about the Direct Effects of Intention on Physical Manifestation. Imants Barus 11. Consciousness and Quantum Measurement: New Empirical Data. York H. Dobyns, 12. Consciousness and Quantum Physics. Gordon Globus, 13. Logic of Quantum Mechanics and Phenomenon of Consciousness Michael B. Mensky, 14. A Quantum Physical Effect of Consciousness Shan Gao 15. The Universe, Quantum Physics, and Consciousness. Subhash Kak, 16. Does Quantum Mechanics Require A Conscious Observer? Michael Nauenberg, 17. Consciousness Vectors Steven Bodovitz, 18. Quantum Physics, Advanced Waves and Consciousness Antonella Vannini and Ulisse Di Corpo, 20. Consciousness in the

Universe Sir Roger Penrose, and S. Hameroff, M.D., 20. The Quantum Hologram And the Nature of Consciousness Edgar D. Mitchell and Robert Staretz 21. Quantum Physics and the Multiplicity of Mind: Split-Brains, Fragmented Minds, Dissociation, Quantum Consciousness. R. Joseph. 22. Many Mansions: Special Relativity, Higher-Dimensional Space, Neuroscience Consciousness and Time, John Smythies, Ph.D.

The Quest for Consciousness

A noted neuroscientist lays out his theory of consciousness, arguing that human consciousness evolves by gathering and scrutinizing information.

The Consciousness Instinct

WINNER OF THE 2014 BRAIN PRIZE From the acclaimed author of Reading in the Brain, a breathtaking look at the new science that can track consciousness deep in the brain How does our brain generate a conscious thought? And why does so much of our knowledge remain unconscious? Thanks to clever psychological and brain-imaging experiments, scientists are closer to cracking this mystery than ever before. In this lively book, Stanislas Dehaene describes the pioneering work his lab and the labs of other cognitive neuroscientists worldwide have accomplished in defining, testing, and explaining the brain events behind a conscious state. We can now pin down the neurons that fire when a person reports becoming aware of a piece of information and understand the crucial role unconscious computations play in how we make decisions. The emerging theory enables a test of consciousness in animals, babies, and those with severe brain injuries. A joyous exploration of the mind and its thrilling complexities, Consciousness and the Brain will excite anyone interested in cutting-edge science and technology and the vast philosophical, personal, and ethical implications of finally quantifying consciousness. From the Trade Paperback edition.

In the Mind Fields

An accessible journalistic exploration of the culture of modern psychiatry analyzes early crossover efforts between the fields of neuroscience and psychoanalysis to outline new understandings in how humans think, feel, and behave.

Human and Machine Consciousness

Using entertaining examples of the mind in action, an eminent psychologist explores current scientific theories of the mind and shows how consciousness works like a stage in which thoughts and perceptions are examined by an inner audience.

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The New Science of Consciousness

In which a scientist searches for an empirical explanation for phenomenal experience, spurred by his instinctual belief that life is meaningful. What links conscious experience of pain, joy, color, and smell to bioelectrical activity in the brain? How can anything physical give rise to nonphysical, subjective, conscious states? Christof Koch has devoted much of his career to bridging the seemingly unbridgeable gap between the physics of the brain and phenomenal experience. This engaging book--part scientific overview, part memoir, part futurist speculation--describes Koch's search for an empirical explanation for consciousness. Koch recounts not only the birth of the modern science of consciousness but also the subterranean motivation for his quest--his instinctual (if "romantic") belief that life is meaningful. Koch describes his own groundbreaking work with Francis Crick in the 1990s and 2000s and the gradual emergence of consciousness (once considered a "fringy" subject) as a legitimate topic for scientific investigation. Present at this paradigm shift were Koch and a handful of colleagues, including Ned Block, David Chalmers, Stanislas Dehaene, Giulio Tononi, Wolf Singer, and others. Aiding and abetting it were new techniques to listen in on the activity of individual nerve cells, clinical studies, and brain-imaging technologies that allowed safe and noninvasive study of the human brain in action. Koch gives us stories from the front lines of modern research into the neurobiology of consciousness as well as his own reflections on a variety of topics, including the distinction between attention and awareness, the unconscious, how neurons respond to Homer Simpson, the physics and biology of free will, dogs, Der Ring des Nibelungen, sentient machines, the loss of his belief in a personal God, and sadness. All of them are signposts in the pursuit of his life's work--to uncover the roots of consciousness.

The Mind

Essays discuss the evolution of consciousness, self-knowledge, aesthetics, religious ecstasy, ghosts, and dreams

In the Theater of Consciousness

The second edition of The Neurology of Consciousness is a comprehensive update of this ground-breaking work on human consciousness, the first book in this area to summarize the neuroanatomical and functional underpinnings of consciousness by emphasizing a lesional approach offered by the study of neurological patients. Since the publication of the first edition in 2009, new methodologies have made consciousness much more accessible scientifically, and, in particular, the study of disorders, disruptions, and disturbances of consciousness has added tremendously to our understanding of the biological basis of human consciousness. The publication of a new edition is both critical and timely for continued understanding of

the field of consciousness. In this critical and timely update, revised and new contributions by internationally renowned researchers—edited by the leaders in the field of consciousness research—provide a unique and comprehensive focus on human consciousness. The new edition of The Neurobiology of Consciousness will continue to be an indispensable resource for researchers and students working on the cognitive neuroscience of consciousness and related disorders, as well as for neuroscientists, psychologists, psychiatrists, and neurologists contemplating consciousness as one of the philosophical, ethical, sociological, political, and religious questions of our time. New chapters on the neuroanatomical basis of consciousness and short-term memory, and expanded coverage of comas and neuroethics, including the ethics of brain death The first comprehensive, authoritative collection to describe disorders of consciousness and how they are used to study and understand the neural correlates of conscious perception in humans. Includes both revised and new chapters from the top international researchers in the field, including Christof Koch, Marcus Raichle, Nicholas Schiff, Joseph Fins, and Michael Gazzaniga

Quantum Physics of Consciousness

An argument that consciousness, more widespread than previously assumed, is the feeling of being alive, not a type of computation or a clever hack. In The Feeling of Life Itself, Christof Koch offers a straightforward definition of consciousness as any subjective experience, from the most mundane to the most exalted--the feeling of being alive. Psychologists study which cognitive operations underpin a given conscious perception. Neuroscientists track the neural correlates of consciousness in the brain, the organ of the mind. But why the brain and not, say, the liver? How can the brain, three pounds of highly excitable matter, a piece of furniture in the universe, subject to the same laws of physics as any other piece, give rise to subjective experience? Koch argues that what is needed to answer these questions is a quantitative theory that starts with experience and proceeds to the brain. In The Feeling of Life Itself, Koch outlines such a theory, based on integrated information. Koch describes how the theory explains many facts about the neurology of consciousness and how it has been used to build a clinically useful consciousness meter. The theory predicts that many, and perhaps all, animals experience the sights and sounds of life; consciousness is much more widespread than conventionally assumed. Contrary to received wisdom, however, Koch argues that programmable computers will not have consciousness. Even a perfect software model of the brain is not conscious. Its simulation is fake consciousness. Consciousness is not a special type of computation--it is not a clever hack. Consciousness is about being.

Brain, Mind and Consciousness in the History of Neuroscience

An illuminating dive into the latest science on our brain's remarkable learning abilities and the potential of the machines we program to imitate them The human brain is an extraordinary machine. Its ability to process information and adapt to

circumstances by reprogramming itself is unparalleled and it remains the best source of inspiration for recent developments in artificial intelligence. In How We Learn, Stanislas Dehaene decodes the brain's biological mechanisms, delving into the neuronal, synaptic, and molecular processes taking place. He explains why youth is such a sensitive period, during which brain plasticity is maximal, but assures us that our abilities continue into adulthood and that we can enhance our learning and memory at any age. We can all learn to learn by taking maximal advantage of the four pillars of the brain's learning algorithm: attention, active engagement, error feedback, and consolidation. The exciting advancements in artificial intelligence of the last twenty years reveal just as much about our remarkable abilities as they do about the potential of machines. How We Learn finds the boundary of computer science, neurobiology, and cognitive psychology to explain how learning really works and how to make the best use of the brain's learning algorithms, in our schools and universities, as well as in everyday life.

Consciousness and the Social Brain

“A stunning book.”—Oliver Sacks Memory binds our mental life together. We are who we are in large part because of what we learn and remember. But how does the brain create memories? Nobel Prize winner Eric R. Kandel intertwines the intellectual history of the powerful new science of the mind—a combination of cognitive psychology, neuroscience, and molecular biology—with his own personal quest to understand memory. A deft mixture of memoir and history, modern biology and behavior, In Search of Memory brings readers from Kandel's childhood in Nazi-occupied Vienna to the forefront of one of the great scientific endeavors of the twentieth century: the search for the biological basis of memory.

The Deep History of Ourselves

A gargantuan, mind-altering comedy about the Pursuit of Happiness in America set in an addicts' halfway house and a tennis academy, and featuring the most endearingly screwed-up family to come along in recent fiction, Infinite Jest explores essential questions about what entertainment is and why it has come to so dominate our lives; about how our desire for entertainment affects our need to connect with other people; and about what the pleasures we choose say about who we are. Equal parts philosophical quest and screwball comedy, Infinite Jest bends every rule of fiction without sacrificing for a moment its own entertainment value. It is an exuberant, uniquely American exploration of the passions that make us human - and one of those rare books that renew the idea of what a novel can do.

The Future of the Brain

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.”

A Brain for Numbers

John, aged sixty, suffered a stroke and recovered fully, except in one respect: although he can see perfectly, he can no longer recognise faces, even his own reflection in a mirror. Whenever Francesca touches a particular texture, she experiences a vivid emotion: denim = extreme sadness; wax = embarrassment; orange peel = shock. Jimmie, whose left arm was recently amputated, can still feel it - and it's itchy. Our brains are the most enchanting and complex things in the known universe - but what happens when they go wrong? Dr V. S. Ramachandran, 'the Sherlock Holmes of brain science' and one of the world's leading neuroscientists, has spent a lifetime working with patients who suffer from rare and baffling brain conditions. In The Tell-Tale Brain, he tells their stories, and explores what they reveal about the greatest mystery of them all: how our minds work, and what makes each of us so uniquely human.

Rethinking Consciousness: A Scientific Theory of Subjective Experience

"A wonderful way to launch yourself into the exciting world of twenty-first-century neuroscience, whether you are a scientist or an intellectually curious layperson. The power in this sampler is that the coverage is not just technical but conceptual: the essays probe the ways in which an understanding of the brain will and won't illuminate the mind, and they do so with depth and balance rather than the usual breathless hype."--Steven Pinker, author of "The Language Instinct" and "How the Mind Works" "Have you ever wondered what's coming around the bend in terms of new insights into how the brain works? Open the pages of "The Future of the Brain" to find out. Gary Marcus and Jeremy Freeman have brought together some of

the leading thinkers and researchers to share their vision of where we are headed. It's a fun, readable book full of insights."--Joseph LeDoux, author of "The Emotional Brain" and "Synaptic Self" "A deep, intriguing view into the most exciting advances in neuroscience. "The Future of the Brain" is a nuanced and thought-provoking guide to what we do and don't know about the human brain--and what we may or may not one day find out."--Maria Konnikova, author of "Mastermind: How to Think Like Sherlock Holmes" "Understanding, theorizing, and simulating the human brain are essential goals for twenty-first-century science and engineering. Surfing the fine line between science and science fiction, this book is a treasure trove of daring ideas."--Stanislas Dehaene, author of "Consciousness and the Brain: Deciphering How the Brain Codes Our Thoughts" "The brain is a complicated thing, and progress in understanding how it works may seem slow. Will creating huge research teams, collecting more data at higher resolutions, and sharing data more widely and openly kick-start a new wave of progress? Or does the field still need to make conceptual leaps before the results would even make sense? Brilliant minds on both sides describe their visions of the future of neuroscience in this collection of short, engaging essays."--Christopher Chabris, coauthor of "The Invisible Gorilla: How Our Intuitions Deceive Us" "Massive technological advances promise rapid and profound discoveries in neuroscience, with very broad implications for our understanding of behavior, ethics, and even religion. Featuring contributions by acknowledged experts, this collection provides a fascinating look at what is happening in the 'big science' of the brain."--Michael C. Corballis, author of "The Recursive Mind: The Origins of Human Language, Thought, and Civilization"

Consciousness

A powerful examination of what we think we know about the brain and why -- despite technological advances -- the workings of our most essential organ remain a mystery. For thousands of years, thinkers and scientists have tried to understand what the brain does. Yet, despite the astonishing discoveries of science, we still have only the vaguest idea of how the brain works. In The Idea of the Brain, scientist and historian Matthew Cobb traces how our conception of the brain has evolved over the centuries. Although it might seem to be a story of ever-increasing knowledge of biology, Cobb shows how our ideas about the brain have been shaped by each era's most significant technologies. Today we might think the brain is like a supercomputer. In the past, it has been compared to a telegraph, a telephone exchange, or some kind of hydraulic system. What will we think the brain is like tomorrow, when new technology arises? The result is an essential read for anyone interested in the complex processes that drive science and the forces that have shaped our marvelous brains.

Soul Dust

The trailblazing investigation of a question that has confounded us for centuries: how is consciousness created? In Self Comes to Mind, world-renowned neuroscientist Antonio Damasio goes against the long-standing idea that consciousness is

separate from the body, presenting compelling new scientific evidence that consciousness - what we think of as a mind with a self - is in fact a biological process created by a living organism. His view entails a radical change in the way the history of the conscious mind is viewed and told, suggesting that the brain's development of a human self is a challenge to nature's indifference. Groundbreaking ideas and beautifully written, this is essential reading for anyone curious about the foundations of mind and self. 'Will give pleasure to anyone interested in original thinking about the brainBreathtakingly original' Financial Times 'Damasio introduces some novel ideasintriguing' New Scientist

Infinite Jest

Consciousness is widely perceived as one of the most fundamental, interesting and difficult problems of our time. However, we still know next to nothing about the relationship between consciousness and the brain and we can only speculate about the consciousness of animals and machines. Human and Machine Consciousness presents a new foundation for the scientific study of consciousness. It sets out a bold interpretation of consciousness that neutralizes the philosophical problems and explains how we can make scientific predictions about the consciousness of animals, brain-damaged patients and machines. Gamez interprets the scientific study of consciousness as a search for mathematical theories that map between measurements of consciousness and measurements of the physical world. We can use artificial intelligence to discover these theories and they could make accurate predictions about the consciousness of humans, animals and artificial systems. Human and Machine Consciousness also provides original insights into unusual conscious experiences, such as hallucinations, religious experiences and out-of-body states, and demonstrates how 'designer' states of consciousness could be created in the future. Gamez explains difficult concepts in a clear way that closely engages with scientific research. His punchy, concise prose is packed with vivid examples, making it suitable for the educated general reader as well as philosophers and scientists. Problems are brought to life in colourful illustrations and a helpful summary is given at the end of each chapter. The endnotes provide detailed discussions of individual points and full references to the scientific and philosophical literature.

Consciousness and the Brain

"Big questions are Gazzaniga's stock in trade." —New York Times "Gazzaniga is one of the most brilliant experimental neuroscientists in the world." —Tom Wolfe "Gazzaniga stands as a giant among neuroscientists, for both the quality of his research and his ability to communicate it to a general public with infectious enthusiasm." —Robert Bazell, Chief Science Correspondent, NBC News The author of Human, Michael S. Gazzaniga has been called the "father of cognitive neuroscience." In his remarkable book, Who's in Charge?, he makes a powerful and provocative argument that counters the common wisdom that our lives are wholly determined by physical processes we cannot control. His well-reasoned case

against the idea that we live in a “determined” world is fascinating and liberating, solidifying his place among the likes of Oliver Sacks, Antonio Damasio, V.S. Ramachandran, and other bestselling science authors exploring the mysteries of the human brain.

The Ego Tunnel

A Nobel Prize-winning neuroscientist and author of In Search of Memory documents the work of five leading minds including Sigmund Freud and Gustave Klimt in 1900 Vienna, revealing how their critical breakthroughs in science, medicine and art laid the groundwork for present-day discoveries in brain science.

Your Brain Is a Time Machine: The Neuroscience and Physics of Time

This book explains in layperson's terms a new approach to studying consciousness based on a partnership between neuroscientists and complexity scientists. The author, a physicist turned neuroscientist, outlines essential features of this partnership. The new science goes well beyond traditional cognitive science and simple neural networks, which are often the focus in artificial intelligence research. It involves many fields including neuroscience, artificial intelligence, physics, cognitive science, and psychiatry. What causes autism, schizophrenia, and Alzheimer's disease? How does our unconscious influence our actions? As the author shows, these important questions can be viewed in a new light when neuroscientists and complexity scientists work together. This cross-disciplinary approach also offers fresh insights into the major unsolved challenge of our age: the origin of self-awareness. Do minds emerge from brains? Or is something more involved? Using human social networks as a metaphor, the author explains how brain behavior can be compared with the collective behavior of large-scale global systems. Emergent global systems that interact and form relationships with lower levels of organization and the surrounding environment provide useful models for complex brain functions. By blending lucid explanations with illuminating analogies, this book offers the general reader a window into the latest exciting developments in brain research.

The Tell-tale Brain

Examines the process through which the human brain has adapted to create and recognize words, discussing the history of writing and reading and presenting current research into such topics as language, spelling logic, and dyslexia.

Self Comes to Mind

A leading neuroscientist offers a history of the evolution of the brain from unicellular organisms to the complexity of animals and human beings today Renowned neuroscientist Joseph LeDoux digs into the natural history of life on earth to provide a new perspective on the similarities between us and our ancestors in deep time. This page-turning survey of the whole of terrestrial evolution sheds new light on how nervous systems evolved in animals, how the brain developed, and what it means to be human. In The Deep History of Ourselves, LeDoux argues that the key to understanding human behavior lies in viewing evolution through the prism of the first living organisms. By tracking the chain of the evolutionary timeline he shows how even the earliest single-cell organisms had to solve the same problems we and our cells have to solve each day. Along the way, LeDoux explores our place in nature, how the evolution of nervous systems enhanced the ability of organisms to survive and thrive, and how the emergence of what we humans understand as consciousness made our greatest and most horrendous achievements as a species possible.

How We Learn

Consciousness is the major unsolved problem in biology. Written as an introduction to the field and drawing upon clinical, psychological and physiological observations, this book seeks to answer questions of consciousness within a neuroscientific framework.

The Neuroscience of Intelligence

“The father of cognitive neuroscience” illuminates the past, present, and future of the mind-brain problem How do neurons turn into minds? How does physical “stuff”—atoms, molecules, chemicals, and cells—create the vivid and various worlds inside our heads? The problem of consciousness has gnawed at us for millennia. In the last century there have been massive breakthroughs that have rewritten the science of the brain, and yet the puzzles faced by the ancient Greeks are still present. In The Consciousness Instinct, the neuroscience pioneer Michael S. Gazzaniga puts the latest research in conversation with the history of human thinking about the mind, giving a big-picture view of what science has revealed about consciousness. The idea of the brain as a machine, first proposed centuries ago, has led to assumptions about the relationship between mind and brain that dog scientists and philosophers to this day. Gazzaniga asserts that this model has it backward—brains make machines, but they cannot be reduced to one. New research suggests the brain is actually a confederation of independent modules working together. Understanding how consciousness could emanate from such an organization will help define the future of brain science and artificial intelligence, and close the gap between brain and mind. Captivating and accessible, with insights drawn from a lifetime at the forefront of the field, The Consciousness Instinct sets the course for the neuroscience of tomorrow.

The Evolution of the Sensitive Soul

Today's most visionary thinkers reveal the cutting-edge scientific ideas and breakthroughs you must understand. Scientific developments radically change and enlighten our understanding of the world -- whether it's advances in technology and medical research or the latest revelations of neuroscience, psychology, physics, economics, anthropology, climatology, or genetics. And yet amid the flood of information today, it's often difficult to recognize the truly revolutionary ideas that will have lasting impact. In the spirit of identifying the most significant new theories and discoveries, John Brockman, publisher of Edge.org ("The world's smartest website" -- The Guardian), asked 198 of the finest minds What do you consider the most interesting recent scientific news? What makes it important? Pulitzer Prize-winning author of Guns, Germs, and Steel Jared Diamond on the best way to understand complex problems * author of Seven Brief Lessons on Physics Carlo Rovelli on the mystery of black holes * Harvard psychologist Steven Pinker on the quantification of human progress * TED Talks curator Chris J. Anderson on the growth of the global brain * Harvard cosmologist Lisa Randall on the true measure of breakthrough discoveries * Nobel Prize-winning physicist Frank Wilczek on why the twenty-first century will be shaped by our mastery of the laws of matter * philosopher Rebecca Newberger Goldstein on the underestimation of female genius * music legend Peter Gabriel on tearing down the barriers between imagination and reality * Princeton physicist Freeman Dyson on the surprising ability of small (and cheap) upstarts to compete with billion-dollar projects. Plus Nobel laureate John C. Mather, Sun Microsystems cofounder Bill Joy, Wired founding editor Kevin Kelly, psychologist Alison Gopnik, Genome author Matt Ridley, Harvard geneticist George Church, Why Does the World Exist? author Jim Holt, anthropologist Helen Fisher, and more.

The Age of Insight

Empirical and theoretical foundations of a cognitive neuroscience ofconsciousness.

The Idea of the Brain

We're used to thinking about the self as an independent entity, something that we either have or are. In The Ego Tunnel, philosopher Thomas Metzinger claims otherwise: No such thing as a self exists. The conscious self is the content of a model created by our brain - an internal image, but one we cannot experience as an image. Everything we experience is ''a virtual self in a virtual reality.'' But if the self is not ''real,'' why and how did it evolve? How does the brain construct it? Do we still have souls, free will, personal autonomy, or moral accountability? In a time when the science of cognition is becoming as controversial as evolution, The Ego Tunnel provides a stunningly original take on the mystery of the mind.

The Cognitive Neuroscience of Consciousness

This volume of essays examines the problem of mind, looking at how the problem has appeared to neuroscientists (in the widest sense) from classical antiquity through to contemporary times. Beginning with a look at ventricular neuropsychology in antiquity, this book goes on to look at Spinozan ideas on the links between mind and body, Thomas Willis and the foundation of Neurology, Hooke's mechanical model of the mind and Joseph Priestley's approach to the mind-body problem. The volume offers a chapter on the 19th century Ottoman perspective on western thinking. Further chapters trace the work of nineteenth century scholars including George Henry Lewes, Herbert Spencer and Emil du Bois-Reymond. The book covers significant work from the twentieth century, including an examination of Alfred North Whitehead and the history of consciousness, and particular attention is given to the development of quantum consciousness. Chapters on slavery and the self and the development of an understanding of Dualism bring this examination up to date on the latest 21st century work in the field. At the heart of this book is the matter of how we define the problem of consciousness itself: has there been any progress in our understanding of the working of mind and brain? This work at the interface between science and the humanities will appeal to experts from across many fields who wish to develop their understanding of the problem of consciousness, including scholars of Neuroscience, Behavioural Science and the History of Science.

Interdisciplinary Perspectives on Consciousness and the Self

"Beautifully written, eloquently reasoned…Mr. Buonomano takes us off and running on an edifying scientific journey." —Carol Tavris, Wall Street Journal In Your Brain Is a Time Machine, leading neuroscientist Dean Buonomano embarks on an "immensely engaging" exploration of how time works inside the brain (Barbara Kiser, Nature). The human brain, he argues, is a complex system that not only tells time, but creates it; it constructs our sense of chronological movement and enables "mental time travel"—simulations of future and past events. These functions are essential not only to our daily lives but to the evolution of the human race: without the ability to anticipate the future, mankind would never have crafted tools or invented agriculture. This virtuosic work of popular science will lead you to a revelation as strange as it is true: your brain is, at its core, a time machine.

In Search of Memory: The Emergence of a New Science of Mind

How our intuitive understanding of numbers is deeply rooted in our biology, traceable through both evolution and development. Humans' understanding of numbers is intuitive. Infants are able to estimate and calculate even before they learn the words for numbers. How have we come to possess this talent for numbers? In A Brain for Numbers, Andreas Nieder explains how our brains process numbers. He reports that numerical competency is deeply rooted in our biological

ancestry; it can be traced through both the evolution of our species and the development of our individual minds. It is not, as it has been traditionally explained, based on our ability to use language. We owe our symbolic mathematical skills to the nonsymbolic numerical abilities that we inherited from our ancestors. The principles of mathematics, Nieder tells us, are reflections of the innate dispositions wired into the brain. Nieder explores how the workings of the brain give rise to numerical competence, tracing flair for numbers to dedicated “number neurons” in the brain. Drawing on a range of methods including brain imaging techniques, behavioral experiments, and twin studies, he outlines a new, integrated understanding of the talent for numbers. Along the way, he compares the numerical capabilities of humans and animals, and discusses the benefits animals reap from such a capability. He shows how the neurobiological roots of the brain's nonverbal quantification capacity are the evolutionary foundation of more elaborate numerical skills. He discusses how number signs and symbols are represented in the brain; calculation capability and the “neuromythology” of mathematical genius; the “start-up tools” for counting and developmental of dyscalculia (a number disorder analogous to the reading disorder dyslexia); and how the brain processes the abstract concept of zero.

The Feeling of Life Itself

This book brings together ancient spiritual wisdom and modern science and philosophy to address age-old questions regarding our existence, free will and the nature of conscious awareness. Stuart Hameroff MD Professor, Anesthesiology and Psychology, and Director, Center for Consciousness Studies The University of Arizona, Tucson, Arizona This book presents a rich, broad-ranging overview of contemporary research and scholarship into consciousness and the self. It is to their credit that the editors have assembled a highly stimulating set of scholars whose expertise cover all the relevant areas. I strongly recommend the book to anyone with an interest in understanding the directions in which contemporary thinking about the nature of consciousness is headed. B. Les Lancaster Emeritus Professor of Transpersonal Psychology Liverpool John Moores University, UK This volume is a collection of 23 essays that contribute to the emerging discipline of consciousness studies with particular focus on the concept of the self. The essays together argue that to understand consciousness is to understand the self that beholds consciousness. Two broad issues are addressed in the volume: the place of the self in the lives of humans and nonhuman primates; and the interrelations between the self and consciousness, which contribute to the understanding of cognitive functions, awareness, free will, nature of reality, and the complex experiential and behavioural attributes of consciousness. The book presents cutting-edge and original work from well-known authors and scholars of philosophy, psychiatry, behavioural sciences and physics. This is a pioneering attempt to present to the reader multiple ways of conceptualizing and thus understanding the relation between consciousness and self in a nuanced manner.

Know This

NEW YORK TIMES BESTSELLER "If you've ever wondered how you have the capacity to wonder, some fascinating insights await you in these pages." --Adam Grant, New York Times bestselling author of Originals As concise and enlightening as Seven Brief Lessons on Physics and Astrophysics for People in a Hurry, this mind-expanding dive into the mystery of consciousness is an illuminating meditation on the self, free will, and felt experience. What is consciousness? How does it arise? And why does it exist? We take our experience of being in the world for granted. But the very existence of consciousness raises profound questions: Why would any collection of matter in the universe be conscious? How are we able to think about this? And why should we? In this wonderfully accessible book, Annaka Harris guides us through the evolving definitions, philosophies, and scientific findings that probe our limited understanding of consciousness. Where does it reside, and what gives rise to it? Could it be an illusion, or a universal property of all matter? As we try to understand consciousness, we must grapple with how to define it and, in the age of artificial intelligence, who or what might possess it. Conscious offers lively and challenging arguments that alter our ideas about consciousness—allowing us to think freely about it for ourselves, if indeed we can.

Reading in the Brain

An accessible and engaging account of the mind and its connection to the brain. The mind encompasses everything we experience, and these experiences are created by the brain--often without our awareness. Experience is private; we can't know the minds of others. But we also don't know what is happening in our own minds. In this book, E. Bruce Goldstein offers an accessible and engaging account of the mind and its connection to the brain. He takes as his starting point two central questions--what is the mind? and what is consciousness?--and leads readers through topics that range from conceptions of the mind in popular culture to the wiring system of the brain. Throughout, he draws on the latest research, explaining its significance and relevance.

Who's in Charge?

"Brilliantas audacious as its title.Mr. Dennett's exposition is nothing short of brilliant." --George Johnson, New York Times Book Review Consciousness Explained is a 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.

Consciousness Regained

Neuroscientist and psychologist Michael S. A. Graziano puts forward a groundbreaking new theory on the origin of consciousness. Focusing attention can help an animal find food or flee a predator. It also may have led to consciousness. Tracing evolution over millions of years, Michael S. A. Graziano uses examples from the natural world to show how neurons first allowed animals to develop simple forms of attention: taking in messages from the environment, prioritizing them, and responding as necessary. Then some animals evolved covert attention—a roving mental focus that can take in information apart from where the senses are pointed, like hearing sirens at a distance or recalling a memory. Graziano proposes that in order to monitor and control this specialized attention, the brain evolved a simplified model of it—a cartoonish self-description depicting an internal essence with a capacity for knowledge and experience. In other words, consciousness. In this eye-opening work drawn from his and other scientists' experiments, Graziano accessibly explores how this sense of an inner being led to empathy and formed us into social beings. The theory may point the way to engineers for building consciousness artificially, and even someday taking the natural consciousness of a person and uploading it into a machine for a digital afterlife. Graziano discusses what a future with artificial conscious might be like, including both advantages and risks, and what AI might mean for our evolutionary future.

The Ravenous Brain