Broca's Brain

"A work of enormous breadth, likely to pleasantly surprise both general readers and experts."

The Parental Brain

They are products of versatile brains which, in a sense, think.

The Chapters Brain

The chapters explore the possible development of a new scholarly synthesis for the study of religion, founded on the triadic space constituted by evolution, cognition, cultural and ecological environment. Chapters focus on either evolution, cognition, and/or the history of religion.

Fat Detection

The evolution of the human brain and cognitive ability is one of the central themes of physical/biological anthropology. This book discusses the emergence of human cognition at a conceptual level, describing it as a process of long adaptive stasis interrupted by short periods of cognitive advance. These advances were not linear and directed, but were acquired indirectly as part of changing human behaviors, in other words through the process of exaptation (acquisition of a function for which it was not originally selected). Based on studies of the modern human brain, certain prerequisites were needed for the development of the early brain and associated cognitive advances. This book documents the energy and nutrient constraints of the modern brain, highlighting the significant role of long-chain polyunsaturated fatty acids (LC-PUFA) in brain development and maintenance. Crawford provides further emphasis for the role of essential fatty acids, in particular DHA, in brain development, by discussing the evolution of the eye and neural systems. This is an ideal book for Graduate students, post docs, research scientists in Physical/Biological Anthropology, Human Biology, Archaeology, Nutrition, Cognitive Science, Neurosciences. It is also an excellent selection for a grad student discussion seminar.

Discovering the Brain

The brain There is no other part of the human anatomy that is so intriguing. How does it develop and function and why does it sometimes, tragically, degenerate? The answers are complex. In Discovering the Brain, science writer Sandra Ackerman cuts through the complexity to bring this vital topic to the public. The 1990s were declared the "Decade of the Brain" by former President Bush, and the neuroscience community responded with a host of new investigations and conferences. Discovering the Brain is based on the Institute of Medicine conference, Decade of the Brain: Frontiers in Neuroscience and Brain Research. Discovering the Brain is a "field guide" to the brain--an easy-to-read discussion of the brain's physical structure and where functions such as language and music appreciation lie. Ackerman examines how electrical and chemical signals are conveyed in the brain. The mechanisms by which we see, hear, think and pay attention--and how a "gut feeling" actually originates in the brain. Learning and memory retention, including parallels to computer memory and what they might tell us about our own mental capacity. Development of the brain throughout the life span, with a look at the aging brain. Ackerman provides an enlightening chapter on the connection between the brain's physical condition and various mental disorders and notes what progress can realistically be made toward the prevention and treatment of stroke and other ailments. Finally, she explores the potential for major advances during the "Decade of the Brain," with a look at medical imaging techniques--what various technologies can and cannot tell us--and how the public and private sectors can contribute to continued advances in neuroscience. This highly readable volume will provide the public and policymakers--and many scientists as well--with a helpful guide to understanding the many discoveries that are sure to be announced throughout the "Decade of the Brain."

Deep Learning in Science

The main topic of the book is a reconstruction of the evolution of nervous systems and brains as well as of mental-cognitive abilities, in short “intelligence” from simplest organisms to humans. It investigates to which extent the two are correlated. One central topic is the alleged uniqueness of the human brain and human intelligence and mind. It is discussed which neural features make certain animals and humans intelligent and creative: Is it absolute or relative brain size or the size of “intelligence centers” inside the brains, the number of nerve cells inside the brain in total or in such “intelligence centers” decisive for the degree of intelligence, of mind and eventually consciousness? And which are the driving forces behind these processes? Finally, it is asked what all this means for the classical
Evolution of Mind, Brain, and Culture

Descartes boldly claimed: “I think, therefore I am.” But one might well ask: Why do we think? How? When and why did our human ancestors develop language and culture? In other words, what makes the human mind human? Evolution of Mind, Brain, and Culture offers a comprehensive and scientific investigation of these perennial questions. Fourteen essays bring together the work of archaeologists, cultural and physical anthropologists, psychologists, philosophers, geneticists, a neuroscientist, and an environmental scientist to explore the evolution of the human mind, the brain, and the human capacity for culture. The volume represents and critically engages major theoretical approaches, including Donald’s stage theory, Milhen’s cathedral model, Tomasello’s joint intentionality, and Boyd and Richerson’s modeling of the evolution of culture in relation to climate change. No recent publication combines this breadth of evidential and theoretical perspective. The essays range in topic from the macroscopic (the evolution of social cooperation) to the microscopic (examining genetic data to infer evolutions in brain structure and function), and from the ancient (paleoanthropological reconstructions of hominin cognitive abilities) to the modern (including modern hominin’s similarities to our primate cousins). Considered together, these essays constitute a fascinating, detailed look at what makes us human. PMIRC, volume 5

The Origin of Mind

“Geary also explores a number of issues that are of interest in modern society, including how general intelligence relates to academic achievement, occupational status, and income.”--BOOK JACKET.

Human Brain Evolution

The Parental Brain: Mechanisms, Development, and Evolution explores the neural circuits and development of the parental brain, and the view that these circuits formed a template for the evolution of other types of prosocial bonds. The book is unique in its multilevel approach and integration of animal and human research.

The Creation of Sensation and the Evolution of Consciousness

This is the first rigorous, self-contained treatment of the theory of deep learning. Starting with the foundations of the theory and building it up, this is essential reading for any scientists, instructors, and students interested in artificial intelligence and deep learning. It provides guidance on how to think about scientific questions, and leads readers through the history of the field and its fundamental connections to neuroscience. The author discusses many applications to beautiful problems in the natural sciences, in physics, chemistry, and biomedicine. Examples include the search for exotic particles and dark matter in experimental physics, the prediction of molecular properties and reaction outcomes in chemistry, and the prediction of protein structures and the diagnostic analysis of biomedical images in the natural sciences. The text is accompanied by a full set of exercises at different difficulty levels and encourages out-of-the-box thinking.

Braindance

Publisher Description

A Brain for All Seasons

Linden sets the record straight about the construction of the human brain; rather than the “beautifully-engineered optimized device, the absolute pinnacle of design” portrayed in many dumbed-down text books, pop-science tomes, and education televisions programs, Linden’s organ is a complicated assembly of cobbled-together functionality that created the mind as a by-product of ad-hoc solutions to questions of survival. His guided tour of the glorious amalgam of “crummy parts” includes pit-stops in the histories and fundamentals of neurology, neural-psychology, physiology, molecular and cellular biology, and genetics.

Understanding Human Evolution

Progress in Brain Research series, highlights new advances in the field, with this new volume presenting interesting chapters. Each chapter is written by an international board of authors. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the Progress of Brain Research series Updated release includes the latest information on the imagining the Brain: Episodes in the Visual History of Brain Research

The Long Evolution of Brains and Minds

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.

Principles of Brain Evolution

We are profoundly social creatures–more than we know. In Social, renowned psychologist Matthew Lieberman explores groundbreaking research in social neuroscience revealing that our need to connect with other people is even more fundamental, more basic, than our need for food or shelter. Because of this, our brain uses its spare time to learn about the social world—other people and our relation to them. It is believed that we must commit 10,000 hours to master a skill. According to Lieberman, each of us has spent 10,000 hours learning to make sense of people and groups by the time we are ten. Social argues that our need to reach out to and connect with others is a primary driver behind our behavior. We believe that pain and pleasure alone guide our actions. Yet, new research using fMRI—including a great deal of original research conducted by Lieberman and his UCLA lab—shows that our brains react to social pain and pleasure in much the same way as they do to physical pain and pleasure. Fortunately, the brain has evolved sophisticated mechanisms for securing our place in the social world. We have a unique ability to read other people’s minds, to figure out their hopes, fears, and motivations, allowing us to effectively coordinate our lives with one another. And our most private sense of who we are is intimately linked to the important people and groups in our lives. This wiring often leads us to restrain our selfish impulses for the greater good. These mechanisms lead to behavior that might seem irrational, but is really just the result of our deep social wiring and necessary for our success as a species. Based on the state-of-the-art research, the findings in Social have important real-world
Evolution of the Storage Brain: Creation of the Self

Until recently, scientific and literary cultures have existed side-by-side but most often in parallel universes, without connection. The Trickster Brain: Neuroscience, Evolution, and Nature by David Williams addresses the premise that humans are a biological species stemming from the long process of evolution, and that we do exhibit a universal human nature, given to us through our genes. From this perspective, literature is shown to be a product of our biological selves. By exploring central ideas in neuroscience, evolutionary biology, linguistics, music, philosophy, ethics, religion, and history, Williams shows that it is the circuitry of the brain’s hard-wired dispositions that continually create similar tales around the world: “archetypal” stories reflecting ancient tensions that arose from our evolutionary past and the very construction of our brains. The book asserts that to truly understand literature, one must look at the biological creature creating it. By using the lens of science to examine literature, we can see how stories reveal universal aspects of the biological mind. The Trickster character is particularly instructive as an archetypal character who embodies a raft of human traits and concerns, for Trickster is often god, devil, musical, sexual, silver tongued, animal, and human at once, treading upon the moral dictates of culture. Williams brings together science and the humanities, demonstrating a critical way of approaching literature that incorporates scientific thought.

Brain Evolution and Cognition

A fascinating book on the joys of discovering how the world works, by the Pulitzer Prize-winning author of Cosmos and Shadows of Forgotten Ancestors. “Magnificent . . . Delightful . . . A masterpiece. A message of tremendous hope for humanity . . . While ever conscious that human folly can terminate man’s march into the future, Sagan nonetheless paints for us a mind-boggling future: intelligent robots, the discovery of extraterrestrial life and its consequences, and above all the challenge and pursuit of the mystery of the universe.”—Chicago Tribune “Go out and buy this book, because Carl Sagan is not only one of the world’s most respected scientists, he’s a great writer . . . I can give a book no greater accolade than to say I’m planning on reading it again. And again. And again.”—The Miami Herald “The brilliant astronomer . . . is persuasive, provocative and readable.”—United Press International “Closely reasoned, impeccably researched, gently humorous, utterly devastating.”—The Washington Post

Imagining the Brain: Episodes in the History of Brain Research

“Starting in scope and bravado.”—Janet Maslin, The New York Times “Artfully envisions a breathtakingly better world.”—Los Angeles Times “Elaborate, smart and persuasive.”—The Boston Globe “A pleasure to read.”—The Wall Street Journal One of CBS News’s Best Fall Books of 2005 • Among St Louis Post-Dispatch’s Best Nonfiction Books of 2005 • One of Amazon.com’s Best Science Books of 2005 A radical and optimistic view of the future course of human development from the bestselling author of How to Create a Mind and The Singularity is Near who Bill Gates calls “the best person I know at predicting the future of artificial intelligence” For over three decades, Ray Kurzweil has been one of the most respected and provocative advocates of the role of technology in our future. In his classic The Age of Spiritual Machines, he argued that computers would soon rival the full range of human intelligence at its best. Now he examines the next step in this inexorable evolutionary process: the union of human and machine, in which the knowledge and skills embodied in our brains will be combined with the vastly greater capacity, speed, and knowledge-sharing ability of our creations.

A History of the Human Brain

Humans are unique in shedding tears of sorrow. We do not just cry over our own problems: we seek out sad stories, go to films and the theatre to see Tragedies, and weep in response to music. What led humans to develop such a powerful social signal as tears, and to cultivate great forms of art which have the capacity to arouse us emotionally? Friedrich Nietzsche argued that Dionysian drives and music were essential to the development of Tragedy. Here, the neuropsychiatrist Michael Trimble, using insights from modern neuroscience and evolutionary biology, attempts to understand this fascinating and unique aspect of human nature—Book jacket.

Evolution, Cognition, and the History of Religion: A New Synthesis

Too many people have little regard for their lives, as though they consider it out of their hands and beyond control. Should we just absorb the slings and arrows, or should we look for truth and how to cope with it? There is nothing more crucial to the life of an organism than its nervous system. It is the source of all sensation, action, and motivation. In short, it is the mechanism that sustains life. Sensation is the nervous system’s communications facility; it monitors all incoming events that impact the body and directs them to the brain where they can be analyzed and acted upon. To be precisely understood, the brain communicates in just one language—the language of “sensation”. Universally used throughout the human nervous system, we see examples of sensation language in its messages to us, such as touch, taste, smell, sound and sight—our five senses. But these are only examples of its extensive use. Sensation began with life, itself, and evolved from meager beginnings into its enormous variations in modern humans. Within all organisms, the occurrence of each sensation corresponds to a unit of consciousness.

The Dopaminergic Mind in Human Evolution and History

The idea of evolution -- Origins -- The vertebrate brain -- The social primate -- Homo social cooperative learners -- Speech -- The arrival of numeracy -- The emergence of the written word -- Evolution meets education -- The future of the learning brain

Evolution of the Storage Brain

Aimed at advanced undergraduate and graduate students, this textbook describes some of the basic principles affecting brain evolution. The author refers to data from a wide array of vertebrates while minimizing technical jargon. Particular attention has been paid to the ways in which changes in brain structure impact function and behavior. The volume concludes with a discussion on how mammal brains diverged from other brains and how Homo sapiens evolved a very large and special brain.

Survival of the Fattest

Evolution of the Storage Brain takes a provocative look at the development of the data storage industry. Written in an entertaining,
convoluted style, this book provides deep understanding of innovations that shaped the data storage world that we live in today. The author recounts his personal experience as transformative events occurred over a 30-plus year period. Technologies that showed great promise but were ultimately discarded are also described in detail. Delving into the physical and logical aspects of the storage brain, the following topics are discussed: * Disk Drive Evolution * Storage Controllers * Storage Memory * Storage Communications * Storage Efficiency * Storage Virtualization * Storage Intelligence Once the author's assertions are made, history is used as a mechanism to predict the future of data storage. This book is a “must-read” for anyone working in the data storage industry, or anyone interested in learning how data storage technologies evolved.

**Evolution of the Human Brain: From Matter to Mind**

Sir John Eccles, a distinguished scientist and Nobel Prize winner who has devoted his scientific life to the study of the mammalian brain, tells the story of how we came to be, not only as animals at the end of the hominid evolutionary line, but also as human persons possessed of reflective consciousness.

**Evolution’s Witness**

“Evolution built us to punish cheaters. Without that punishment instinct, we would never have been able to live in small groups, and would never have realized all the significant benefits that small-group living conferred, including mutual defense, cooperative hunting, property, divisions of labor and economies of scale. In fact, to a large extent our notions of right and wrong, of empathy and compassion, of fairness and justice, all come from the tensions of group living, and thus indirectly owe their very existence to punishment. It may sound strange that one key to civilization is our willingness to punish each other, but every parent knows it’s true. Every parent also feels the irresistible pull not to punish too much, and in fact maybe not to punish at all - to forgive - and this, too, is a remnant of evolution. Our punishment instinct is not so much a sword ready to fall as it is a finely tuned balance, sometimes susceptible to the gentlest of breezes”--

**Global Brain**

The Insider's Guide to Data Deduplication is a journey inside the development of NetApp deduplication. Written in an entertaining, conversational style, this book provides deep understanding of how deduplication has developed into a driving force in the data storage industry today. The author recounts his own insider experiences as NetApp deduplication matured from a minor feature to a major influence in storage technology. Technologies that work synergistically with deduplication are also described in full detail. Delving into the novice, intermediate, and expert domains of data deduplication, the following topics are discussed: * Data deduplication Primer * Global deduplication * Deduplication hashing * Source vs. target deduplication * Inline vs. post-processing deduplication * Deduplication and its interaction with FlexClone, SnapMirror, and SnapVault * Using the Space Savings Estimation Tool (SSET) to predict deduplication savings * Using AutoSupport to measure the effectiveness of deduplication * A glimpse into the future of deduplication Included in this book is a Glossary of Deduplication Terms as defined by the Storage Networking Industry Association (SNIA), in which the author was a key contributor. This book is a "must-read" for anyone interested in the inner workings of NetApp deduplication, or for anyone interested in learning more about the evolution of this important data storage technology.

**Arthropod Brains**

Uses new techniques to examine brain lateralization in humans and present a theory which describes how the art of walking upright resulted in the brain enlargement of hominids and the evolution of the human brain

**The Insider's Guide to Data Deduplication**

For the one-term course in human evolution, paleoanthropology, or fossil hominins taught at the junior/senior level in departments of anthropology or biology. This new edition provides a comprehensive overview to the field of paleoanthropology—the study of human evolution by analyzing fossil remains. It includes the latest fossil finds, attempts to place humans into the context of geological and biological change on the planet, and presents current controversies in an even-handed manner.

**Social**

“A History of the Human Brain is a unique, enlightening, and provocative account of the most significant question we can ask about ourselves.” —Richard Wrangham, author of The Goodness Paradox Just 125,000 years ago, humanity was on a path to extinction, until a dramatic shift occurred. We used our mental abilities to navigate new terrain and changing climates. We hunted, foraged, tracked tides, shucked oysters— anything we could do to survive. Before long, our species had pulled itself back from the brink and was on more stable ground. What saved us? The human brain—and its evolutionary journey is unlike any other. In A History of the Human Brain, Bret Stetka takes us on this far-reaching journey, explaining exactly how our most mysterious organ developed. From the brain’s improbable, watery beginnings to the marvel that sits in the head of Homo sapiens today, Stetka covers an astonishing progression, even tackling future brainy frontiers such as epigenetics and CRISPR. Clearly and expertly told, this intriguing account is the story of who we are. By examining the history of the brain, we can begin to piece together what it truly means to be human.

**What's Going on in There?**

Evolution of the Human Brain: From Matter to Mind, Volume 250 in the Progress in Brain Research, series documents the latest developments and insights about the origin and evolution of the human brain and mind. Specific sections in this new release include

**Brain and Values**

What does it mean to be human? There are many theories of the evolution of human behavior which seek to explain how our brains evolved to support our unique abilities and personalities. Most of these have focused on the role of brain size or specific genetic adaptations of the brain. In contrast, in this text, Fred Pevric presents a provocative theory that high levels of dopamine, the most widely studied neurotransmitter, account for all major aspects of modern human behavior. He further emphasizes the role of epigenetic rather than genetic factors in the rise of dopamine. Pevric contrasts the great achievements of the dopaminergic mind with the harmful effects of rising dopamine levels in modern societies and concludes with a critical examination of whether the dopaminergic mind that has evolved in humans is still adaptive to the health of humans and to the planet in general.

**Evolution of the Learning Brain**

This book presents a new, detailed examination that explains how elegant brains have been shaped in evolution. It consists of 19 chapters written by academic professionals in neuroscience, opening with the origin of single-celled creatures and then introducing primordial types in invertebrates with the great abundance of the brains of vertebrates. Important topics are provided in a timely manner, because novel techniques emerged rapidly—as seen, for examples, in the next-generation sequencers and omics approaches. With the explosion of big data, neural-related genes and molecules is now on the radar. In fact, Europe’s big science and technology projects, a €4 billion plan called the Human Brain Project and the Blue Brain Project to understand mammalian brain networks, have been launched in recent years. Furthermore, with the rise of recently advanced artificial intelligence, there is great enthusiasm for understanding the evolution of neural networks. The views from brain evolution in nature provide an essential opportunity to generate ideas for novel neuron- and brain-inspired computation. The ambition behind this book is that it will stimulate young scientists who seek a deeper understanding in order to find the basic principles shaping brains that provided higher cognitive functions in the course of evolution.

**The Accidental Mind**

Presents the State-of-the-Art in Fat Taste Transduction. A bite of cheese, a few potato chips, a delectable piece of bacon—a small taste of high-fat foods often draws you back for more. But why are fatty foods so appealing? Why do we crave them? Fat Detection: Taste, Texture, and Post Ingestive Effects covers the many factors responsible for the sensory appeal of foods rich in fat. This well-researched text uses a multidisciplinary approach to shed new light on critical concerns related to dietary fat and obesity. Outlines Compelling Evidence for an Oral Fat Detection System Reflecting 15 years of psychophysical, behavioral, electrophysiological, and molecular studies, this book makes a well-supported case for an oral fat detection system. It explains how gustatory, textural, and olfactory information contribute to fat detection using carefully designed behavioral paradigms. The book also provides a detailed account of the brain regions that process the signals elicited by a fat stimulus, including flavor, aroma, and texture. This readily accessible work also discusses: The importance of dietary fats for living organisms Factors contributing to fat preference, including palatability Brain mechanisms associated with appetitive and hedonic experiences connected with food consumption Potential therapeutic targets for fat intake control Genetic components of human fat preference Neurological disorders and essential fatty acids Providing a comprehensive review of the literature from the leading scientists in the field, this volume delivers a holistic view of how the palatability and orosensory properties of dietary fat impact food intake and ultimately health. Fat Detection represents a new frontier in the study of food perception, food intake, and related health consequences.

**Why Humans Like to Cry**

As a research neuroscientist, Lise Eliot has made the study of the human brain her life’s work. But it wasn’t until she was pregnant with her first child that she became intrigued with the study of brain development. She wanted to know precisely how the baby’s brain is formed, and when and how each sense, skill, and cognitive ability is developed. And just as important, she was interested in finding out how her role as a nurturer can affect this complex process. How much of her baby’s development is genetically ordained—and how much is determined by environment? Is there anything parents can do to make their babies’ brains work better—to help them become smarter, happier people? Drawing upon the exploding research in this field as well as the stories of real children, What’s Going On In There? is a lively and thought-provoking book that charts the brain’s development from conception through the critical first five years. In examining the many factors that play crucial roles in that process, What’s Going On In There? explores the evolution of the senses, motor skills, social and emotional behaviors, and mental functions such as attention, language, memory, reasoning, and intelligence. This remarkable book also discusses: how a baby’s brain is “assembled” from scratch the critical prenatal factors that shape brain development how the birthing process itself affects the brain which forms of stimulation are most effective at promoting cognitive development how boys’ and girls’ brains develop differently how nutrition, stress, and other physical and social factors can permanently affect a child’s brain. Brilliantly blending cutting-edge science with a mother’s wisdom and insight, What’s Going On In There? is an invaluable contribution to the nature versus nurture debate. Children’s development is determined both by the genes they are born with and the richness of their early environment. This timely and important book shows parents the innumerable ways in which they can actually help their children grow better brains.

**The Trickster Brain**

“The evolution of the eye spans 3.75 billion years from single cell organisms with eyespots to Metazoa with superb camera style eyes. At least ten different ocular models have evolved independently into myriad optical and physiological masterpieces. The story of the eye reveals evolution’s greatest triumph and sweetest gift. This book describes its journey”—Provided by publisher.

**Brain Evolution by Design**

**A Mind So Rare**

How did humans evolve larger and more sophisticated brains? In general, evolution depends on a special combination of circumstances: part genetics, part time, and part environment. In the case of human brain evolution, the main environmental influence...
Read Book Evolution Of The Storage Brain A History Of Transformative Events With A Glimpse Into The Future Of Data Storage

was adaptation to a OCshore-basedOCO diet, which provided the worldOCOs richest source of nutrition, as well as a sedentary lifestyle that promoted fat deposition. Such a diet included shellfish, fish, marsh plants, frogs, birdOCOs eggs, etc. Humans and, and more importantly, hominid babies started to get fat, a crucial distinction that led to the development of larger brains and to the evolution of modern humans. A larger brain is expensive to maintain and this increasing demand for energy results in, succinctly, survival of the fattest."

The Symbolic Species: The Co-evolution of Language and the Brain

This 5th volume of the Appalachian Conference discusses how the brain processes information, the role of memory and value, and models of creativity. It pursues aspects of cognitive neuroscience and behavioral neurodynamics, such as the topic of values and quantum-distributed processing in the brain.

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