L Homme Neuronal

COLON PITTS

Current Catalog Springer Science & Business Media
« Ce livre est la synthèse de plusieurs décennies de réflexion sur le beau. Il verse au débat une nouvelle dimension : celle de la connaissance scientifique à la fois de la contemplation de l'œuvre d'art et de sa création. Avec la science du cerveau, ou neuroscience, un champ nouveau s'ouvre à la recherche sur l'œuvre d'art. On peut désormais imaginer une neuroscience de l'art. Comprendre comment notre cerveau intervient dans la relation de l'être humain à l'œuvre d'art devient envisageable et prometteur. C'est le chemin que je vous propose ici. » J.-P. C. Jean-Pierre Changeux est l'un des plus grands neurobiologistes contemporains. Il est professeur honoraire au Collège de France, membre de l'Académie des sciences. Il a été président de la Commission interministérielle d'agrément pour la conservation du patrimoine artistique national, dite Commission des dations, et président du Comité consultatif national d'éthique. Il est l'auteur, notamment, de Raison et plaisir, de Matière à pensée (avec Alain Connes), de La Nature et la Règle. Ce qui nous fait penser (avec Paul Ricœur), de L' Homme de vérité, de Du vrai, du beau, du bien et, avec Pierre Boulez et Philippe Manoury, des Neurones enchantés. Le cerveau et la musique.

Neurosciences and Ethics CRC Press
The purpose of this book is to give a clear and straightforward account of the remarkable properties of the nicotinic receptor for acetylcholine, a membrane protein involved in chemical transduction in the nervous system that is also the target of a widely used drug, nicotine. This molecule also happens to be the first pharmacological receptor and ion channel ever to have been identified. Jean-Pierre Changeux has played a leading role with Stuart J. Edelstein in the investigation of nicotinic acetylcholine receptors and allosteric proteins. The aim of this book is not only to review the most recent experimental and theoretical breakthroughs in the study of the nicotinic receptor, but also to give the reader a sense of the intellectual excitement and adventure that accompanied the various stages of discovery. This richly illustrated volume furnishes an exceptional opportunity for scientists and students to follow the course of a major advance in our understanding of the molecular basis of brain functions. Jean-Pierre Changeux is honorary professor at the Collège de France and at the Institut Pasteur, a member of the French Academy of Sciences. In addition to L'Homme neuronal [Neuronal Man] he is the author of Raison et Plaisir and L'Homme de vérité. He is also co-author, with Alain Connes, of Matière à penser [Conversations on Mind, Matter, and Mathematics] and, with Paul Ricœur, of La Nature et la Règle [What Makes Us Think?]. All thought-provoking works. Stuart J. Edelstein is Professor of Biochemistry at the University of Geneva and a foreign associate member of the Academy of Sciences. "The nicotinic acetylcholine receptor has served for many decades as the prototype for neurotransmitter receptors. Acetylcholine was the first neurotransmitter shown to be involved in the fonction of the mammalian brain and its nicotinic receptor the first receptor to be characterized. Jean-Pierre Changeux is the indisputable pioneer in this field. This volume summarizes with great lucidity the history of a highly important topic in neuroscience." Paul Greengard, Nobel laureate in Medecine - The Rockefeller University "From the molecule to thought itself - an extraordinary journey! Changeux and Edelstein are uniquely qualified to relate this utterly fascinating story, whose philosophical implications are no less important than the scientific research underlying them." Jean-Marie Lehn, Nobel laureate in Chemistry - ISIS-Université Louis Pasteur, Strasbourg "The human brain is as much a chemical as an electrical network. Its intricacy and sophistication set it apart from any known technical device. The groundbreaking papers by Monod, Jacob, Wyman, and Changeux in the 1960s on chemical regulation and control were eye-opening for all us who were doing experimental research in ths field, and they have turned out to be crucial for understanding biological evolution and learning in a broad sense. Since then Changeux and Edelstein have achieved international fame for their work on nicotinic acetylcholine receptors, amply documented in this masterful account." Manfred Eigen, Nobel laureate in Chemistry - Max Planck Institute for Biophysical Chemistry, Göttingen "One hesitates to call this book a monograph, for despite its comprehensive treatment of a complex subject it is not meant solely for specialized readers. In concentrating on a single class of neuroreceptors, the nicotinic acetylcholine receptor, it seeks to draw out general principles which apply more widely. It will therefore be welcomed not only by serious workers and students in the field of neurobiology, but also by anyone interested in the broader field of neuroscience." Sir Aaron Klug OM FRS, Nobel laureate in Chemistry - University of Cambridge "Changeux and Edelstein have provided a concise yet highly comprehensive account of perhaps the prototypical neurotransmitter complex, the nicotinic acetylcholine receptor. The story of how the roles played by this signal transduction system in nicotine dependence, learning, memory, and the processes of cognition came to be unraveled is an exciting saga, both beautiful and profound. A lovely historico-scientific document." Floyd E. Bloom, Professor Emeritus - The Scripps Research Institute "Changeux and Edelstein describe a classically Cartesian process of scientific investigation that leads to a most non-Cartesian conclusion. Having elucidated the mechanisms of action and interaction by which the various elements that make up the nicotinic acetylcholine receptor operate throughout the nervous system, from neuromuscular junctions to the brain itself, the authors turn to the role of thse structures and mechanisms in supporting cognition and giving access to consciousness - thus parting ways with Descartes and the view that the mind is able somehow to exist independently of the body. A work of truly remarkable erudition and insight." Roger Guillemin, Nobel laureate in Medicine - Salk Institute for Biological Studies "This book is unlike any recent scientific book. It is more like a forty-year research meeting in one of the world's most creative neurobiology laboratories—an intellectual tour de fortcheat surveys the developmental trends and achievements of twentieth-century neuroscience in molecular, structural, and functional terms. The book therefore becomes an extraordinary educational saga, moving from Sir Henry Dale's pharmacology of nicotine to genetic diseases involving mutations of the cation channel function of nicotinic acetylcholine receptors. Research into these archetypal proteins has been carried out by pharmacologists, biochemists, molecular biologists, electrophysiologists, behavioral scientists, and geneticists, with Jean-Pierre Changeux and his coworkers participating in every aspect of this remarkable inquiry. Nicotinic acetylcholine receptors are the workhorse of the fast actions of the chemical signal acetylcholine, abundantly transmitted in both the peripheral and the central nervous system. Thanks to their variable sub- unit composition they come in many flavors, mediating control of voluntary muscles in the periphery and helping to regulate reward functions, cognition, and memory in the brain. This rich functionality leads the authors to describe models of neuromuscular junction development as well a global workspace model of cognitive function and its role in effortful learning. The nicotinic acetylcholine receptor was among the first ligand-gated ion channels to be sequenced and studied by patch-clamp methods. It has been the object of neurobiological research in England, France, Germany, Japan, and the United States, with contributions of equal weight being made by many teams of researchers over a number of decades, all carefully chronicled and explained by the authors. This book is to be highly recommended to young scientists who want to discover into how many fields a single protein molecule can take them—from snake venom action to myasthenia gravis, addiction, learning, and schiz-ophrenia—if they are willing patiently to learn new research techniques rather than specialize in a single method or instrument. To investigate the nicotinic acetylcholine receptor in all its aspects requires a Renaissance mind, and it is exactly this that Changeux and Edelstein have brought to bear on one of the most studied topics in neuroscience of the last century." TAMAS BARTFAI, Chair and Professor, Department of Neuropharmacology The Scripps Research Institute

The Good, the True, and the Beautiful Psychology Press

Will understanding our brains help us to know our minds? Or is there an unbridgeable distance between the work of neuroscience and the workings of human consciousness? In a remarkable exchange between neuroscientist Jean-Pierre Changeux and philosopher Paul Ricoeur, this book explores the vexed territory between these divergent approaches--and comes to a deeper, more complex perspective on human nature. Ranging across diverse traditions, from phrenology to PET scans and from Spinoza to Charles Taylor, What Makes Us Think? revolves around a central issue: the relation between the facts (or "what is") of science and the prescriptions (or "what ought to be") of ethics. Changeux and Ricoeur ask: Will neuroscientific knowledge influence our moral conduct? Is a naturally based ethics possible? Pursuing these questions, they attack key topics at the intersection of philosophy and neuroscience: What are the relations between brain states and psychological experience? Between language and truth? Memory and culture? Behavior and action? What is a mental representation? How does a sign relate to what it signifies? How might subjective experience be constructed rather than discovered? And can biological or cultural evolution be considered progressive? Throughout, Changeux and Ricoeur provide unprecedented insight into what neuroscience can--and cannot--tell us about the nature of human experience. Changeux and Ricoeur bring an unusual depth of engagement and breadth of knowledge to each other's subject. In doing so, they make two often hostile disciplines speak to one another in surprising and instructive ways--and speak with all the subtlety and passion of conversation at its very best.
Springer Science & Business Media
Cajal's Neuronal Forest: Science and Art continues the tradition set forth by its sister volume Cajal's Butterflies of the Soul (OUP, 2009). This new collection contains hundreds of beautiful rarely-seen-before figures produced throughout the nineteenth century and the beginning of the twentieth century by famed father-of-modern-neuroscience Santiago Ramón y Cajal (1852-1934) and his contemporaries. Cajal was captivated by the beautiful shapes of the cells of the nervous system. He and his fellow scientists saw neurons as trees and glial cells as bushes. Given their high density and arrangement, neurons and glial resembled a thick forest, a seemingly impenetrable terrain of interacting cells mediating cognition and behavior. In unraveling the mysteries of the brain, these researchers encountered an almost infinite number of cellular forms with an extraordinary beauty, which they could not help but put pen to paper, allowing them to discover a new artistic world- the neuronal forest- that gave free rein not only to their imagination, but to a new way of viewing the brain as well. This book has been divided into two parts. The first focuses on the scientific atmosphere in Cajal's times, on the history of the neuron, and the anatomical challenge posed in studying neuronal connections. It also delves into the artistic skills of Cajal and other important pioneers in neuroscience and how the neuronal forests have served as an unlimited source of artistic inspiration. The second consists of 275 original drawings by Cajal. All were published over the course of his scientific career and cover virtually all of his research fields of interest, including the spinal cord, the optic lobe and retina, cerebral cortex, and many other regions of the brain. Cajal's Neuronal Forest: Science and Art is a testament to the natural beauty found in science. Despite the common misconception that the drawings of Cajal and other scientists of the time are pieces of art, these drawings are in fact copies of histological preparations and contributed greatly to the discoveries made in the field of neuroscience. This book is a gem in any library, whether serving as a medical history or a gallery of stunning sketches.
Neural Networks and Qualitative Physics Springer Science & Business Media
First multi-year cumulation covers six years: 1965-70.
Science Fiction Pendragon Press
Though the subject of this work, "nominalism and contemporary nom inalism", is philosophical, it cannot be fully treated without relating it to data gathered from a great variety of domains, such as biology and more especially ethology, psychology, linguistics and neurobiology. The source of inspiration has been an academic work I wrote in order to obtain a postdoctoral degree, which is called in Belgium an "Aggregaat voor het Hoger Onderwijs" comparable to a "Habilitation" in Germany. I want to thank the National Fund of Scientific Research, which accorded me several grants and thereby enabled me to write the academic work in the first place and thereafter this book. I also want to thank Prof. SJ. Doorman (Technical University of Delft) and Prof. G. Nuchelmans (University of Leiden), who were members of the jury of the "Aggre gaatsthesis", presented to the Free University of Brussels in 1981 and who by their criticisms and suggestions encouraged me to write the present book, the core of which is constituted by the general ideas then formulated. I am further obliged to Mr. X, the referee who was asked by Jaakko Hintikka to read my work and who made a series of constructive remarks and recom mendations. My colleague Marc De Mey (University of Ghent) helped me greatly with the more formal aspects of my work and spent too much of his valuable time and energy to enable me to deliver a presentable copy. All remaining shortcomings are entirely my responsibility. I asked Prof.

Toward a World Literature Cambridge University Press
Comprendre les processus neurobiologiques nécessaires à la conscience est une étape décisive pour la compréhension de l'acquisition des connaissances. Ce qui paraît vrai à quelqu'un ne l'est pas forcément aux yeux de quelqu'un d'autre, en toute conscience. Celui qui ment le sait, pas nécessairement celui qui reçoit le message. Comment se fait-il que la capacité à dire le vrai soit un trait propre à l'espèce humaine ? Quelle est la relation qui peut exister entre des faits ou objets du monde extérieur et des objets de pensée, des états intérieurs, produits par notre cerveau ? Comment cet accord est-il possible ? Comment s'établit-il ? Comment est-il mis à l'épreuve ? Comment évolue-t-il ? Comment valider l'adéquation de nos connaissances à la réalité du monde sinon en les communiquant par le langage et en les soumettant à un débat critique ? N'est-ce pas là l'origine d'une activité spécialisée que nos sociétés ont développée dans leur quête de vérité : la science ? Telles sont les grandes questions auxquelles Jean-Pierre Changeux, à partir des données les plus récentes de la recherche sur le cerveau, apporte un éclairage nouveau dans cet Homme de vérité.
Early Child Development in the French Tradition Odile Jacob
Content Description #Includes bibliographical references and index.
La Beauté dans le cerveau Odile Jacob
Man has been pondering for centuries over the basis of his own ethical and aesthetic values. Until recent times, such issues were primarily fed by the thinking of philosophers, moralists and theologists, or by the findings of historians or sociologists relating to universality or variations in these values within various populations. Science has avoided this field of investigation within the confines of philosophy. Beyond the temptation to stay away from the field of knowledge science may also have felt itself unconcerned by the study of human values for a simple heuristic reason, namely the lack of tools allowing objective study. For the same reason, researchers tended to avoid the study of feelings or consciousness until, over the past two decades, this became a focus of interest for many neuroscientists. It is apparent that many questions linked to research in the field of neuroscience are now arising. The hope is that this book will help to formulate them more clearly rather than skirting them. The authors do not wish to launch a new moral philosophy, but simply to gather objective knowledge for reflection.
Science and Art Editions Publibook
In this work, renowned scholar George Slusser analyzes science fiction's history by focusing on important thinkers, overlooked by other critics, who made key contributions to the development of science fiction as a global literature.
What Makes Us Think? Odile Jacob
En 1983 paraissait L'Homme neuronal de Jean-Pierre Changeux. L'ouvrage eut un impact considérable, bien au-delà du monde scientifique. Il proposait un nouveau programme de recherche en neurobiologie, mais aussi une vision matérialiste des rapports entre le cerveau et la pensée. De ce fait, il suscita des réactions parfois violentes chez les philosophes et les psychanalystes. Plus de trente ans après, nous ouvrons de nouveau le débat entre Changeux, ses collègues scientifiques, les spécialistes des sciences humaines et les philosophes. Si l'échange a lieu dans un esprit d'écoute et dans une ambiance apaisée, cela ne signifie pas que les différences de point de vue aient disparu. Ce livre montre les progrès accomplis dans la connaissance du cerveau pendant ces dernières décennies et la manière dont le débat a évolué tout en conservant sa force et son actualité. L'ensemble constitue aussi une excellente introduction à l'oeuvre de Jean-Pierre Changeux.
Klostergut Jakobsberg, 20.–25. April 1986 Federal Republic of Germany Cambridge University Press
Through a series of original essays, this book unites an international team of renowned researchers and educators around the theme of knowledge dialogue. Spanning topics from natural complexity to neuroscience, from education theory to climate change, from immunology to archaelogy and human migrations, it allows for an atmosphere of constructive criticism and enables the ambition to build a new foundation for the transdisciplinary process.
Nominalism and Contemporary Nominalism MIT Press
The human brain occupies a unique position among the organs of the human body. With its 1010 nerve cells and the innumerable interconnections, it is the most complex living system we know. It is the prerequisite for all though~, feeling, and action and hence for the awareness of ourselves. In many religions and philosophies it was and is considered to be the seat of the immortal soul. For centuries some individuals looked upon the mentally ill with holy reverence, and others responded with shock and radical social ostracism. In the neurosciences, too, the brain is not just one organ among many. As with the genome, it is considered to be an information storage unit. But whereas the genetic information cannot be influenced by the individual carrier, the brain can learn; that is, it is capable of storing information from the life history of its carrier, and it can pass this information on. The neurosciences are an area of research that has cut across the boundaries of the classic disciplines and now includes a broad spectrum ranging from basic research to clinical medicine. These sciences have developed remarkable momentum since they have taken an interdisciplinary approach and made use of experimental techniques and concepts developed in the fields of physics, biochemistry, molecular biology, behavioral physiology, experimental psychology, and computer science.
The Cognitive Neurosciences Princeton University Press
Confronter un scientifique et un philosophe sur les neurosciences, leurs résultats, leurs projets, leur capacité à soutenir un débat sur la morale, sur les normes, sur la paix, tel est l'objet de ce livre. Le débat d'idées est trop rare en France. Affirmations péremptoires, critiques unilatérales, discussions incompréhensibles, dérisions faciles ne cessent d'encombrer le terrain sans souci pour des arguments qui, avant d'être convaincants,aspirent à être tenus pour plausibles, c'est-à -dire dignes d'être plaidés. Vivre un dialogue totalement libre et ouvert entre un scientifique et un philosophe constitue une expérience exceptionnelle pour l'un comme pour l'autre. " (P. R. et J. -P. C.). Paul Ricoeur est professeur honoraire à l'université Paris-X et professeur émérite à l'université de Chicago. Il est l'auteur de très nombreux ouvrages, notamment "La métaphore vive", "Temps et Récit", "Soi-même comme un autre". Jean-Pierre Changeux est professeur au Collége de France et à l'Institut Pasteur, membre de l'Académie des sciences. Il est notammentl'auteur de "L'Homme neuronal", "Matiére à pensée" (avec Alain Connes), et "Raison et Plaisir". "
Science, Law and European Courts Oxford University Press
Cognitive science is among the most fascinating intellectual achievements of the modern era. The quest to understand the mind is an ancient one. But modern science has offered new insights and techniques that have revolutionized this enquiry. Oxford University Press now presents a masterlyhistory of the field, told by one of its most eminent practitioners.Psychology is the thematic heart of cognitive science, which aims to understand human (and animal) minds. But its core theoretical ideas are drawn from cybernetics and artificial intelligence, and many cognitive scientists try to build functioning models of how the mind works. In that sense,Margaret Boden suggests, its key insight is that mind is a (very special) machine. Because the mind has many different aspects, the field is highly interdisciplinary. It integrates psychology not only with cybernetics/AI, but also with neuroscience and clinical neurology; with the philosophy ofmind, language, and logic; with linguistic work on grammar, semantics, and communication; with anthropological studies of cultures; and with biological (and A-Life) research on animal behaviour, evolution, and life itself. Each of these disciplines, in its own way, asks what the mind is, what itdoes, how it works, how it develops--and how it is even possible.Boden traces the key questions back to Descartes's revolutionary writings, and to the ideas of his followers--and his radical critics--through the eighteenth and nineteenth centuries. Her story shows how controversies in the development of experimental physiology, neurophysiology, psychology,evolutionary biology, embryology, and logic are still relevant today. Then she guides the reader through the complex interlinked paths along which the study of mind developed in the twentieth century. Cognitive science covers all mental phenomena: not just 'cognition' (knowledge), but also emotion,personality, psychopathology, social communication, religion, motor action, and consciousness. In each area, Boden introduces the key ideas and researchers and discusses those philosophical critics who see cognitive science as fundamentally misguided. And she sketches the waves of resistance andacceptance on the part of the media and general public, showing how these have affected the development of the field.No one else could tell this story as Boden can: she has been a member of the cognitive science community since the late-1950s, and has known many of its key figures personally. Her narrative is written in a lively, swift-moving style, enriched by the personal touch of someone who knows the story atfirst hand. Her history looks forward as well as back: besides asking how state-of-the-art research compares with the hopes of the early pioneers, she identifies the most promising current work. Mind as Machine will be a rich resource for anyone working on the mind, in any academic discipline, whowants to know how our understanding of mental capacities has advanced over the years.
L'homme de vérité MIT Press
Two distinguished linguists on language, the history of science, misplaced euphoria, surprising facts, and potentially permanent mysteries. In The Secrets of Words, influential linguist Noam Chomsky and his longtime colleague Andrea Moro have a wide-ranging conversation, touching on such topics as language and linguistics, the history of science, and the relation between language and the brain. Moro draws Chomsky out on today’s misplaced euphoria about artificial intelligence (Chomsky sees “lots of hype and propaganda” coming from Silicon Valley), the study of the brain (Chomsky points out that findings from brain studies in the 1950s never made it into that era’s psychology), and language acquisition by children. Chomsky in turn invites Moro to describe his own experiments, which proved that there exist impossible languages for the brain, languages that show surprising properties and reveal unexpected secrets of the human mind. Chomsky once said, “It is important to learn to be surprised by simple facts”—“an expression of yours that has represented a fundamental turning point in my own personal life,” says

Moro—and this is something of a theme in their conversation. Another theme is that not everything can be known; there may be permanent mysteries, about language and other matters. Not all words will give up their secrets.
Contributions From Current Research Edinburgh University Press
The third edition of a work that defines the field of cognitive neuroscience, withextensive new material including new chapters and new contributors.
Memory in Literature Cambridge University Press
This landmark publication offers a unique comparative and interdisciplinary study of criminal insanity and neuroscience. Criminal law theories and ideologies which underpin the regulation of criminal insanity have always been the subject of controversy. The history of criminal insanity is characterised by conceptual and empirical tension between two disciplinary realms: the law and the mind sciences. The authors in this anthology explore in depth the state of the art of legal insanity and the numerous intricate, fascinating, pioneering and sophisticated questions raised by the integration of different criminal law and behaviour theories, diverse disciplines and methodologies, in a genuinely interdisciplinary perspective. This volume will serve as a practical guide for the comparative legal scholar and the judge, as well as stimulating scholarly reading for the neuroscientist, the social scientist and the philosopher with interdisciplinary scientific interests.
Brain and Mind Elsevier
It was not long ago when the consciousness was not considered a problem for science. However, this has now changed and the problem of consciousness is considered the greatest challenge to science. In the last decade, a great number of books and articles have been published in the field, but very few have focused on the how consciousness evolves and develops, and what characterizes the transitions between different conscious states, in animals and humans. This book addresses these questions. Renowned researchers from different fields of science (including neurobiology, evolutionary biology, ethology, cognitive science, computational neuroscience and philosophy) contribute with their results and theories in this book, making it a unique collection of the state-of-the-art of this young field of consciousness studies. First book on the topic Focus on different levels of consciousness, including: Evolutionary, developmental, and functional Highly interdisciplinary
Evolutionary Ethics and Contemporary Biology Rowman & Littlefield
"Wallin's discourse encompasses: 1) the musical consequences of cerebral functional asymmetry; 2) the hierarchic and selective organization of perceptual-cognitive auditory processes; 3) reticular-limbic responses to musical stimuli interpreted as synapse-modifying mechanisms for long-term motivation and learning, as well as for phylogenetical "learning"; 4) the question of remnants or retentions with roots in the sound-gestures of other vertebrates of a higher order (and not solely the non-human primates) being active in the innermost structure of music; 5) vocalization techniques, e.g., the "kolning" technique of the late Paleolithic herding culture of Europe, as paleobiological retention; 6) the epistemological perspective of models of life-processes as discussed in recent scientific research."--BOOK JACKET.