

The Ethical Brain Science Of Our Moral Dilemmas Michael S Gazzaniga

The Hidden Brain Human Neurogenetics Tales from Both Sides of the Brain Introduction to Brain and Behavior Brain-Computer-Interfaces in their ethical, social and cultural contexts Everybody Wants to Go to Heaven but Nobody Wants to Die: Bioethics and the Transformation of Health Care in America The Feeling of Life Itself The Scientific American Brave New Brain Brain Science under the Swastika Human Ethical Dimensions of Commercial and DIY Neurotechnologies The Myth of the Moral Brain Neuroethics The Ethical Brain How to Grow a Human Brain On Fire: My Month of Madness Electric Brain Rights Come to Mind Defining Right and Wrong in Brain Science The Future of the Brain The Brain in a Nutshell The Ethical Challenges of Emerging Medical Technologies The Altruistic Brain Sex, Lies, & Brain Scans Brain Science under the Swastika Who's in Charge? The Seven Sins of Memory A Century of Science and Other Essays Conscience: The Origins of Moral Intuition Neuromorphic and Brain-Based Robots The Moral Landscape Voracious Science and Vulnerable Animals Educational Neuroscience How God Changes Your Brain Braintrust The Idea of the Brain The Human Sciences after the Decade of the Brain The Idea of the Brain The Evolution of Morality

The Hidden Brain

The field of educational neuroscience uses new insights about the neural mechanisms of learning to improve educational practices and outcomes. The first volume to bring together the latest knowledge on the development of educational neuroscience from a life-span perspective, this important text offers state of the art, authoritative research findings in educational neuroscience before providing evidence-based recommendations for classroom practice. Thomas, Mareschal, Dumontheil, and the team of expert international contributors assembled in this volume thoroughly explore four main themes throughout the book. The first theme is individual differences, or what makes children perform better or worse in the classroom. The second theme is the nature of individual differences at different stages in development, from early years into adulthood. The third theme addresses cognitive enhancement, summarizing research that has investigated activities that might give general benefits to cognition. And the fourth theme considers the translation of research findings into classroom practices, discussing broader ethical issues raised by educational neuroscience, and what teachers need to know about neuroscience to enhance their day-to-day practice. Specific topics explored include neuropsychological perspectives on socioeconomic disparities in educational achievement, reading difficulties, phonological skills, executive function, and emotional development. Educational Neuroscience is essential reading for researchers and graduate students of educational psychology, developmental

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science, developmental psychology, and cognitive psychology, especially those specializing in emotion regulation.

Human

Two summers ago, scientists removed a tiny piece of flesh from Philip Ball's arm and turned it into a rudimentary "mini-brain." The skin cells, removed from his body, did not die but were instead transformed into nerve cells that independently arranged themselves into a dense network and communicated with each other, exchanging the raw signals of thought. This was life—but whose? In his most mind-bending book yet, Ball makes that disconcerting question the focus of a tour through what scientists can now do in cell biology and tissue culture. He shows how these technologies could lead to tailor-made replacement organs for when ours fail, to new medical advances for repairing damage and assisting conception, and to new ways of "growing a human." For example, it might prove possible to turn skin cells not into neurons but into eggs and sperm, or even to turn oneself into the constituent cells of embryos. Such methods would also create new options for gene editing, with all the attendant moral dilemmas. Ball argues that such advances can therefore never be about "just the science," because they come already surrounded by a host of social narratives, preconceptions, and prejudices. But beyond even that, these developments raise questions about identity and self, birth and death, and force us to ask how mutable the human body really is—and

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what forms it might take in years to come.

Neurogenetics

"The current book is a collection of essays, speech transcripts, and reprints that were written and compiled by John Fiske. This text, published in 1899, includes discussions on science, evolution, philosophy, and liberal thought." (PsycINFO Database Record (c) 2008 APA, all rights reserved).

Tales from Both Sides of the Brain

God is great—for your mental, physical, and spiritual health. Based on new evidence culled from brain-scan studies, a wide-reaching survey of people's religious and spiritual experiences, and the authors' analyses of adult drawings of God, neuroscientist Andrew Newberg and therapist Mark Robert Waldman offer the following breakthrough discoveries:

- Not only do prayer and spiritual practice reduce stress, but just twelve minutes of meditation per day may slow down the aging process.
- Contemplating a loving God rather than a punitive God reduces anxiety and depression and increases feelings of security, compassion, and love.
- Fundamentalism, in and of itself, can be personally beneficial, but the prejudice generated by extreme beliefs can permanently damage your brain.
- Intense

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prayer and meditation permanently change numerous structures and functions in the brain, altering your values and the way you perceive reality. Both a revelatory work of modern science and a practical guide for readers to enhance their physical and emotional health, *How God Changes Your Brain* is a first-of-a-kind book about faith that is as credible as it is inspiring.

Introduction to Brain and Behavior

Neuromorphic and brain-based robotics have enormous potential for furthering our understanding of the brain. By embodying models of the brain on robotic platforms, researchers can investigate the roots of biological intelligence and work towards the development of truly intelligent machines. This book provides a broad introduction to this groundbreaking area for researchers from a wide range of fields, from engineering to neuroscience. Case studies explore how robots are being used in current research, including a whisker system that allows a robot to sense its environment and neurally inspired navigation systems that show impressive mapping results. Looking to the future, several chapters consider the development of cognitive, or even conscious robots that display the adaptability and intelligence of biological organisms. Finally, the ethical implications of intelligent robots are explored, from morality and Asimov's three laws to the question of whether robots have rights.

Brain-Computer-Interfaces in their ethical, social and cultural contexts

A New York Times Notable Book: A psychologist's "gripping and thought-provoking" look at how and why our brains sometimes fail us (Steven Pinker, author of *How the Mind Works*). In this intriguing study, Harvard psychologist Daniel L. Schacter explores the memory miscues that occur in everyday life, placing them into seven categories: absent-mindedness, transience, blocking, misattribution, suggestibility, bias, and persistence. Illustrating these concepts with vivid examples—case studies, literary excerpts, experimental evidence, and accounts of highly visible news events such as the O. J. Simpson verdict, Bill Clinton's grand jury testimony, and the search for the Oklahoma City bomber—he also delves into striking new scientific research, giving us a glimpse of the fascinating neurology of memory and offering "insight into common malfunctions of the mind" (*USA Today*). "Though memory failure can amount to little more than a mild annoyance, the consequences of misattribution in eyewitness testimony can be devastating, as can the consequences of suggestibility among pre-school children and among adults with 'false memory syndrome' . . . Drawing upon recent neuroimaging research that allows a glimpse of the brain as it learns and remembers, Schacter guides his readers on a fascinating journey of the human mind." —*Library Journal* "Clear, entertaining and provocative . . . Encourages a new

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appreciation of the complexity and fragility of memory.” —The Seattle Times
“Should be required reading for police, lawyers, psychologists, and anyone else who wants to understand how memory can go terribly wrong.” —The Atlanta Journal-Constitution
“A fascinating journey through paths of memory, its open avenues and blind alleys . . . Lucid, engaging, and enjoyable.” —Jerome Groopman, MD
“Compelling in its science and its probing examination of everyday life, The Seven Sins of Memory is also a delightful book, lively and clear.” —Chicago Tribune
Winner of the William James Book Award

Everybody Wants to Go to Heaven but Nobody Wants to Die: Bioethics and the Transformation of Health Care in America

Calls for an end to religion's role in dictating morality, demonstrating how the scientific community's understandings about the human brain may enable the establishment of secular codes of behavior.

The Feeling of Life Itself

An argument that moral functioning is immeasurably complex, mediated by biology but not determined by it.

The Scientific American Brave New Brain

A prosthesis that can communicate with and be controlled by your brain. A microchip placed in the eye of a person previously blind that allows the patient to see again. A machine that can tell us what a person is thinking about. Drugs tailor made for a specific person to help them deal with emotional issues. The stuff of science fiction? No. It is reality. The human brain is not only our most complex organ, but also the most complex entity known to mankind. We are in an age of fantastic and prolific neurological research with advances occurring faster than in any other scientific field. This research promises to help us with our mental health, social adjustment, satisfaction with life, our ability to learn, and our ability to remember, (and forget). The brain contains approximately 90 billion neurons. We are beginning to understand their functions more and more each day. This three-pound organ the shape of a cauliflower has fascinated man for centuries. The study of the brain is now less philosophical and more scientific. As neurological research becomes more and more enlightening and practical, a general understanding of the brain and the major issues of neurological science become more important. It is not rocket science or brain surgery (pun intended) to have a basic understanding of the state of our knowledge of the brain today. This book will acquaint the reader with thirty of the most important and interesting topics in the study of the brain. The author will assume that the reader has limited knowledge of the brain and it's functions, and will present information in every day language with very limited use

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of scientific jargon. The brain is responsible for how we perceive our world and how we behave in it. Let us begin our journey of understanding it.

Brain Science under the Swastika

"Unlike any other study in its field, The Altruistic Brain synthesizes into one theory the most important research into how and why - by purely physical mechanisms - humans empathize with one another and respond altruistically."--Book jacket.

Human

Ethical Dimensions of Commercial and DIY Neurotechnologies Volume Three, the latest release in the Developments in Neuroethics and Bioethics series, highlights new advances in the field, with this new volume presenting interesting chapters on timely topics surrounding neuroethics and bioethics. 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 Developments in Neuroethics and Bioethics series Includes the latest information on the ethics of commercial and DIY neurotechnologies

Ethical Dimensions of Commercial and DIY Neurotechnologies

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NOW FEATURING A NEW AFTERWORD, "PANDEMIC ETHICS" From two eminent scholars comes a provocative examination of bioethics and our culture's obsession with having it all without paying the price. Shockingly, the United States has among the lowest life expectancies and highest infant mortality rates of any high-income nation, yet, as Amy Gutmann and Jonathan D. Moreno show, we spend twice as much per capita on medical care without insuring everyone. A "remarkable, highly readable journey" (Judy Woodruff) sure to become a classic on bioethics, *Everybody Wants to Go to Heaven but Nobody Wants to Die* explores the troubling contradictions between expanding medical research and neglecting human rights, from testing anthrax vaccines on children to using brain science for marketing campaigns. Providing "a clear and compassionate presentation" (Library Journal) of such complex topics as radical changes in doctor-patient relations, legal controversies over in vitro babies, experiments on humans, unaffordable new drugs, and limited access to hospice care, this urgent and incisive history is "required reading for anyone with a heartbeat" (Andrea Mitchell).

The Myth of the Moral Brain

What happened along the evolutionary trail that made humans so unique? In his accessible style, Michael Gazzaniga pinpoints the change that made us thinking, sentient humans different from our predecessors. He explores what makes human brains special, the importance of language and art in defining the human condition,

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the nature of human consciousness, and even artificial intelligence.

Neuroethics

Where is the line between instinct and free will in humans? How far can technology and medicine go to manipulate the brain? With every new discovery about the human mind, more and more questions emerge about the boundaries of consciousness, responsibility, and how far neuroscience research can go. The fledgling field of neuroethics has sought answers to these questions since the first formal neuroethics conference was held in 2002. This groundbreaking volume collects the expert and authoritative writings published since then that have laid the groundwork for this rapidly expanding debate. *Defining Right and Wrong in Brain Science* traverses the breadth of neuroethics, exploring six broad areas—including free will, moral responsibility, and legal responsibility; psychopharmacology; and brain injury and brain death—in thirty provocative articles. The scientific and ethical consequences of neuroscience research and technology are plumbed by leading thinkers and scientists, from Antonio Damasio's "The Neural Basics of Social Behavior: Ethical Implications" to "Monitoring and Manipulating Brain Function" by Martha J. Farah and Paul Root Wolpe. These and other in-depth chapters articulate the thought-provoking questions that emerge with every new scientific discovery and propose solutions that mediate between the freedom of scientific endeavor and the boundaries of

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ethical responsibility. As science races toward a future that is marked by startling new possibilities for our bodies and minds, *Defining Right and Wrong in Brain Science* is the definitive assessment of the ethical criteria guiding neuroscientists today.

The Ethical Brain

Including a chapter by 2014 Nobel laureates May-Britt Moser and Edvard Moser An unprecedented look at the quest to unravel the mysteries of the human brain, *The Future of the Brain* takes readers to the absolute frontiers of science. Original essays by leading researchers such as Christof Koch, George Church, Olaf Sporns, and May-Britt and Edvard Moser describe the spectacular technological advances that will enable us to map the more than eighty-five billion neurons in the brain, as well as the challenges that lie ahead in understanding the anticipated deluge of data and the prospects for building working simulations of the human brain. A must-read for anyone trying to understand ambitious new research programs such as the Obama administration's BRAIN Initiative and the European Union's Human Brain Project, *The Future of the Brain* sheds light on the breathtaking implications of brain science for medicine, psychiatry, and even human consciousness itself. Contributors include: Misha Ahrens, Ned Block, Matteo Carandini, George Church, John Donoghue, Chris Eliasmith, Simon Fisher, Mike Hawrylycz, Sean Hill, Christof Koch, Leah Krubitzer, Michel Maharbiz, Kevin Mitchell, Edvard Moser, May-Britt

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Moser, David Poeppel, Krishna Shenoy, Olaf Sporns, Anthony Zador.

How to Grow a Human

An Introduction to Brain and Behavior takes uninitiated students to the frontiers of contemporary physiological psychology more effectively than any other textbook. Renowned researchers and veteran teachers, Kolb and Whishaw help students connect nervous-system activity to human behavior, drawing on the latest research and revealing case studies.

Brain On Fire: My Month of Madness

What is as unique as your fingerprints and more revealing than your diary? Hint: Your body is emitting them right now and has been every single day of your life. Brainwaves. Analyzing brainwaves, the imperceptible waves of electricity surging across your scalp, has been possible for nearly a century. But only now are neuroscientists becoming aware of the wealth of information brainwaves hold about a person's life, thoughts, and future health. From the moment a reclusive German doctor discovered waves of electricity radiating from the heads of his patients in the 1920s, brainwaves have sparked astonishment and intrigue, yet the significance of the discovery and its momentous implications have been poorly

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understood. Now, it is clear that these silent broadcasts can actually reveal a stunning wealth of information about any one of us. In *Electric Brain*, world-renowned neuroscientist and author R. Douglas Fields takes us on an enthralling journey into the world of brainwaves, detailing how new brain science could fundamentally change society, separating fact from hyperbole along the way. In this eye-opening and in-depth look at the most recent findings in brain science, Fields explores groundbreaking research that shows brainwaves can: Reveal the type of brain you have—its strengths and weaknesses and your aptitude for learning different types of information Allow scientists to watch your brain learn, glean your intelligence, and even tell how adventurous you are Expose hidden dysfunctions—including signifiers of mental illness and neurological disorders Render your thoughts and transmit them to machines and back from machines into your brain Meld minds by telepathically transmitting information from one brain to another Enable individuals to rewire their own brains and improve cognitive performance Written by one of the neuroscientists on the cutting edge of brainwave research, *Electric Brain* tells a fascinating and obscure story of discovery, explains the latest science, and looks to the future—and the exciting possibilities in store for medicine, technology, and our understanding of ourselves.

Electric Brain

This collection of essays emphasizes society's increasingly responsible

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engagement with ethical challenges in emerging medical technology. Expansion of technological capacity and attention to patient safety have long been integral to improving healthcare delivery but only relatively recently have concepts like respect, distributive justice, privacy, and autonomy gained some power to shape the development, use, and refinement of medical tools and techniques. Medical ethics goes beyond making better medicine to thinking about how to make the field of medicine better. These essays showcase several ways in which modern ethical thinking is improving safety, efficacy and efficiency of medical technology, increasing access to medical care, and empowering patients to choose care that comports with their desires and beliefs. Included are complimentary ethical approaches as well as compelling counter-arguments. Together, the articles demonstrate how improving the quality of medical technology relies on every stakeholder -- not just medical researchers and scientists -- to assess each given technology's strengths and pitfalls. This collection also portends one of the next major issues in the ethics of medical technology: developing the requisite moral framework to accompany shifts toward patient-centred personalized healthcare.

Rights Come to Mind

This volume summarizes the ethical, social and cultural contexts of interfacing brains and computers. It is intended for the interdisciplinary community of BCI stakeholders. Insofar, engineers, neuroscientists, psychologists, physicians, care-

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givers and also users and their relatives are concerned. For about the last twenty years brain-computer-interfaces (BCIs) have been investigated with increasing intensity and have in principle shown their potential to be useful tools in diagnostics, rehabilitation and assistive technology. The central promise of BCI technology is enabling severely impaired people in mobility, grasping, communication, and entertainment. Successful applications are for instance communication devices enabling locked-in patients in staying in contact with their environment, or prostheses enabling paralysed people in reaching and grasping. In addition to this, it serves as an introduction to the whole field of BCI for any interested reader.

Defining Right and Wrong in Brain Science

Eighty years ago the largest genocide ever occurred in Nazi Europe. This began with the mass extermination of patients with neurologic and psychiatric disorders that Hitler's regime considered "useless eaters". The neuropsychiatric profession was systematically "cleansed" beginning in 1933, but racism and eugenics had infiltrated the specialty long before that. With the installation of Nazi-principled neuroscientists, mass forced sterilization was enacted, which transitioned to patient murder by the start of World War II. But the murder of roughly 275,000 patients was not enough. The patients' brains were stored and used in scientific publications both during and long after the war. Also, patients themselves were

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used for unethical experiments. Relatively few neuroscientists resisted the Nazis, with some success in the occupied countries. Most neuroscientists involved in unethical actions continued their careers unscathed after the war. Few answered for their actions, and few repented. The legacy of such a depraved era in the history of neuroscience and medical ethics is that codes now exist to protect patients and research subjects. But this protection is possibly subject to political extremes and individual neuroscientists can only protect patients and colleagues if they understand the dangers of a utilitarian, unethical, and uncompassionate mindset. Brain Science under the Swastika is the only comprehensive and scholarly published work regarding the ethical and professional abuses of neuroscientists during the Nazi era. The author has crafted a scathing tour de force exploring the extremes of ethical abuse, but also ways that this can be resisted and hopefully prevented by future generations of neuroscientists and physicians

The Future of the Brain

This fascinating and highly accessible book presents fantastic but totally feasible projections of what your brain may be capable of in the near future. It shows how scientific breakthroughs and amazing research are turning science fiction into science fact. In this brave new book, you'll explore: How partnerships between biological sciences and technology are helping the deaf hear, the blind see, and the paralyzed communicate. How our brains can repair and improve themselves,

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erase traumatic memories How we can stay mentally alert longer—and how we may be able to halt or even reverse Alzheimers How we can control technology with brain waves, including prosthetic devices, machinery, computers—and even spaceships or clones. Insights into how science may cure fatal diseases, and improve our intellectual and physical productivity Judith Horstman presents a highly informative and entertaining look at the future of your brain, based on articles from Scientific American and Scientific American Mind magazines, and the work of today's visionary neuroscientists.

The Brain in a Nutshell

Shortlisted for the 2020 Baillie Gifford Prize This is the story of our quest to understand the most mysterious object in the universe: the human brain. Today we tend to picture it as a computer. Earlier scientists thought about it in their own technological terms: as a telephone switchboard, or a clock, or all manner of fantastic mechanical or hydraulic devices. Could the right metaphor unlock the its deepest secrets once and for all? Galloping through centuries of wild speculation and ingenious, sometimes macabre anatomical investigations, scientist and historian Matthew Cobb reveals how we came to our present state of knowledge. Our latest theories allow us to create artificial memories in the brain of a mouse, and to build AI programmes capable of extraordinary cognitive feats. A complete understanding seems within our grasp. But to make that final breakthrough, we

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may need a radical new approach. At every step of our quest, Cobb shows that it was new ideas that brought illumination. Where, he asks, might the next one come from? What will it be?

The Ethical Challenges of Emerging Medical Technologies

Michael S. Gazzaniga, one of the most important neuroscientists of the twentieth century, gives us an exciting behind-the-scenes look at his seminal work on that unlikely couple, the right and left brain. Foreword by Steven Pinker. In the mid-twentieth century, Michael S. Gazzaniga, “the father of cognitive neuroscience,” was part of a team of pioneering neuroscientists who developed the now foundational split-brain brain theory: the notion that the right and left hemispheres of the brain can act independently from one another and have different strengths. In *Tales from Both Sides of the Brain*, Gazzaniga tells the impassioned story of his life in science and his decades-long journey to understand how the separate spheres of our brains communicate and miscommunicate with their separate agendas. By turns humorous and moving, *Tales from Both Sides of the Brain* interweaves Gazzaniga’s scientific achievements with his reflections on the challenges and thrills of working as a scientist. In his engaging and accessible style, he paints a vivid portrait not only of his discovery of split-brain theory, but also of his comrades in arms—the many patients, friends, and family who have accompanied him on this wild ride of intellectual discovery.

The Altruistic Brain

This book considers what the technique of fMRI entails, and what information it can give us, showing which applications are possible today, and which ones are science fiction. It also looks at the important ethical questions these techniques raise.

Sex, Lies, & Brain Scans

The Human Sciences after the Decade of the Brain brings together exciting new works that address today's key challenges for a mutual interaction between cognitive neuroscience and the social sciences and humanities. Taking up the methodological and conceptual problems of choosing a neuroscience approach to disciplines such as philosophy, history, ethics and education, the book deepens discussions on a range of epistemological, historical, and sociological questions about the "neuro-turn" in the new millennium. The book's three sections focus on (i) epistemological questions posed by neurobiologically informed approaches to philosophy and history, (ii) neuroscience's influence on explanations for social and moral behavior, and (iii) the consequences of the neuro-turn in diverse sectors of social life such as science, education, film, and human self-understanding. This book is an important resource both for students and scholars of cognitive neuroscience and biological psychology interested in the philosophical, ethical, and

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societal influences of—and on—their work as well as for students and scholars from the social sciences and humanities interested in neuroscience. Explores the recent influence of neuroscience on the humanities and social sciences and how they respond to these influences Offers in-depth analysis of the theoretical and practical influence of a brain-centered scientific view in diverse areas of the social sciences including economics, education, cultural studies, and philosophy Investigates contributions of the history of science to scrutinizing current neuroscience-based approaches to social and moral behavior

Brain Science under the Swastika

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

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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.

Who's in Charge?

Genetic methodologies are having a significant impact on the study of neurological and psychiatric disorders. Using genetic science, researchers have identified over 200 genes that cause or contribute to neurological disorders. Still an evolving field of study, defining the relationship between genes and neurological and psychiatric disorders is evolving rapidly and expected to grow in scope as more disorders are linked to specific genetic markers. Part I covers basic genetic concepts and recurring biological themes, and begins the discussion of movement disorders and neurodevelopmental disorders, leading the way for Part II to cover a combination of neurological, neuromuscular, cerebrovascular, and psychiatric disorders. This volume in the Handbook of Clinical Neurology will provide a comprehensive introduction and reference on neurogenetics for the clinical practitioner and the research neurologist. Presents a comprehensive coverage of neurogenetics Details the latest science and impact on our understanding of neurological psychiatric disorders Provides a focused reference for clinical practitioners and the neuroscience/neurogenetics research community

The Seven Sins of Memory

What happened along the evolutionary trail that made humans so unique? In his accessible style, Michael Gazzaniga pinpoints the change that made us thinking, sentient humans different from our predecessors. He explores what makes human brains special, the importance of language and art in defining the human condition, the nature of human consciousness, and even artificial intelligence.

A Century of Science and Other Essays

Eighty years ago the largest genocide ever occurred in Nazi Europe. This began with the mass extermination of patients with neurologic and psychiatric disorders that Hitler's regime considered "useless eaters". The neuropsychiatric profession was systematically "cleansed" beginning in 1933, but racism and eugenics had infiltrated the specialty long before that. With the installation of Nazi-principled neuroscientists, mass forced sterilization was enacted, which transitioned to patient murder by the start of World War II. But the murder of roughly 275,000 patients was not enough. The patients' brains were stored and used in scientific publications both during and long after the war. Also, patients themselves were used for unethical experiments. Relatively few neuroscientists resisted the Nazis, with some success in the occupied countries. Most neuroscientists involved in

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unethical actions continued their careers unscathed after the war. Few answered for their actions, and few repented. The legacy of such a depraved era in the history of neuroscience and medical ethics is that codes now exist to protect patients and research subjects. But this protection is possibly subject to political extremes and individual neuroscientists can only protect patients and colleagues if they understand the dangers of a utilitarian, unethical, and uncompassionate mindset. Brain Science under the Swastika is the only comprehensive and scholarly published work regarding the ethical and professional abuses of neuroscientists during the Nazi era. The author has crafted a scathing tour de force exploring the extremes of ethical abuse, but also ways that this can be resisted and hopefully prevented by future generations of neuroscientists and physicians

Conscience: The Origins of Moral Intuition

How do we determine right from wrong? Conscience illuminates the answer through science and philosophy. In her brilliant work *Touching a Nerve*, Patricia S. Churchland, the distinguished founder of neurophilosophy, drew from scientific research on the brain to understand its philosophical and ethical implications for identity, consciousness, free will, and memory. In *Conscience*, she explores how moral systems arise from our physical selves in combination with environmental demands. All social groups have ideals for behavior, even though ethics vary among different cultures and among individuals within each culture. In trying to

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understand why, Churchland brings together an understanding of the influences of nature and nurture. She looks to evolution to elucidate how, from birth, our brains are configured to form bonds, to cooperate, and to care. She shows how children grow up in society to learn, through repetition and rewards, the norms, values, and behavior that their parents embrace. Conscience delves into scientific studies, particularly the fascinating work on twins, to deepen our understanding of whether people have a predisposition to embrace specific ethical stands. Research on psychopaths illuminates the knowledge about those who abide by no moral system and the explanations science gives for these disturbing individuals. Churchland then turns to philosophy—that of Socrates, Aquinas, and contemporary thinkers like Owen Flanagan—to explore why morality is central to all societies, how it is transmitted through the generations, and why different cultures live by different morals. Her unparalleled ability to join ideas rarely put into dialogue brings light to a subject that speaks to the meaning of being human.

Neuromorphic and Brain-Based Robots

A provocative and fascinating look at new discoveries about the brain that challenge our ethics The rapid advance of scientific knowledge has raised ethical dilemmas that humankind has never before had to address. Questions about the moment when life technically begins and ends or about the morality of genetically designing babies are now relevant and timely. Our ever-increasing knowledge of

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the workings of the human brain can guide us in the formation of new moral principles in the twenty-first century. In *The Ethical Brain*, preeminent neuroscientist Michael S. Gazzaniga presents the emerging social and ethical issues arising out of modern-day brain science and challenges the way we look at them. Courageous and thought-provoking -- a work of enormous intelligence, insight, and importance -- this book explores the hitherto uncharted landscape where science and society intersect.

The Moral Landscape

The hidden brain is the voice in our ear when we make the most important decisions in our lives—but we're never aware of it. The hidden brain decides whom we fall in love with and whom we hate. It tells us to vote for the white candidate and convict the dark-skinned defendant, to hire the thin woman but pay her less than the man doing the same job. It can direct us to safety when disaster strikes and move us to extraordinary acts of altruism. But it can also be manipulated to turn an ordinary person into a suicide terrorist or a group of bystanders into a mob. In a series of compulsively readable narratives, Shankar Vedantam journeys through the latest discoveries in neuroscience, psychology, and behavioral science to uncover the darkest corner of our minds and its decisive impact on the choices we make as individuals and as a society. Filled with fascinating characters, dramatic storytelling, and cutting-edge science, this is an engrossing exploration of

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the secrets our brains keep from us—and how they are revealed.

Voracious Science and Vulnerable Animals

Through the sobering story of Maggie Worthen and her mother, Nancy, this book tells of one family's struggle with severe brain injury and how developments in neuroscience call for a reconsideration of what society owes patients at the edge of consciousness. Drawing upon over fifty in-depth family interviews, the history of severe brain injury from Quinlan to Schiavo, and his participation in landmark clinical trials, such as the first use of deep brain stimulation in the minimally conscious state, Joseph J. Fins captures the paradox of medical and societal neglect even as advances in neuroscience suggest new ways to mend the broken brain. Responding to the dire care provided to these marginalized patients, after heroically being saved, Fins places society's obligations to patients with severe injury within the historical legacy of the civil and disability rights movements, offering a stirring synthesis of public policy and physician advocacy.

Educational Neuroscience

Neuroethics : an overview -- Better brains -- Brain, self, and authenticity -- Brain reading -- Neuroscience and justice -- Brains and persons.

How God Changes Your Brain

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.

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Consciousness is about being.

Braintrust

“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 Idea of the Brain

'My first serious blackout marked the line between sanity and insanity. Though I

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would have moments of lucidity over the coming days and weeks, I would never again be the same person ' Susannah Cahalan was a happy, clever, healthy twenty-four-year old. Then one day she woke up in hospital, with no memory of what had happened or how she had got there. Within weeks, she would be transformed into someone unrecognizable, descending into a state of acute psychosis, undergoing rages and convulsions, hallucinating that her father had murdered his wife; that she could control time with her mind. Everything she had taken for granted about her life, and who she was, was wiped out. Brain on Fire is Susannah's story of her terrifying descent into madness and the desperate hunt for a diagnosis, as, after dozens of tests and scans, baffled doctors concluded she should be confined in a psychiatric ward. It is also the story of how one brilliant man, Syria-born Dr Najjar, finally proved - using a simple pen and paper - that Susannah's psychotic behaviour was caused by a rare autoimmune disease attacking her brain. His diagnosis of this little-known condition, thought to have been the real cause of devil-possession through history, saved her life, and possibly the lives of many others. Cahalan takes readers inside this newly-discovered disease through the progress of her own harrowing journey, piecing it together using memories, journals, hospital videos and records. Written with passionate honesty and intelligence, Brain on Fire is a searingly personal yet universal book, which asks what happens when your identity is suddenly destroyed, and how you get it back. 'With eagle-eye precision and brutal honesty, Susannah Cahalan turns her journalistic gaze on herself as she bravely looks back on one of the most harrowing

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and unimaginable experiences one could ever face: the loss of mind, body and self. Brain on Fire is a mesmerizing story' -Mira Bartók, New York Times bestselling author of The Memory Palace Susannah Cahalan is a reporter on the New York Post, and the recipient of the 2010 Silurian Award of Excellence in Journalism for Feature Writing. Her writing has also appeared in the New York Times, and is frequently picked up by the Daily Mail, Gawker, Gothamist, AOL and Yahoo among other news aggregator sites.

The Human Sciences after the Decade of the Brain

What is morality? Where does it come from? And why do most of us heed its call most of the time? In Braintrust, neurophilosophy pioneer Patricia Churchland argues that morality originates in the biology of the brain. She describes the "neurobiological platform of bonding" that, modified by evolutionary pressures and cultural values, has led to human styles of moral behavior. The result is a provocative genealogy of morals that asks us to reevaluate the priority given to religion, absolute rules, and pure reason in accounting for the basis of morality. Moral values, Churchland argues, are rooted in a behavior common to all mammals--the caring for offspring. The evolved structure, processes, and chemistry of the brain incline humans to strive not only for self-preservation but for the well-being of allied selves--first offspring, then mates, kin, and so on, in wider and wider "caring" circles. Separation and exclusion cause pain, and the company

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of loved ones causes pleasure; responding to feelings of social pain and pleasure, brains adjust their circuitry to local customs. In this way, caring is apportioned, conscience molded, and moral intuitions instilled. A key part of the story is oxytocin, an ancient body-and-brain molecule that, by decreasing the stress response, allows humans to develop the trust in one another necessary for the development of close-knit ties, social institutions, and morality. A major new account of what really makes us moral, Braintrust challenges us to reconsider the origins of some of our most cherished values.

The Idea of the Brain

Moral thinking pervades our practical lives, but where did this way of thinking come from, and what purpose does it serve? Is it to be explained by environmental pressures on our ancestors a million years ago, or is it a cultural invention of more recent origin? In *The Evolution of Morality*, Richard Joyce takes up these controversial questions, finding that the evidence supports an innate basis to human morality. As a moral philosopher, Joyce is interested in whether any implications follow from this hypothesis. Might the fact that the human brain has been biologically prepared by natural selection to engage in moral judgment serve in some sense to vindicate this way of thinking—staving off the threat of moral skepticism, or even undergirding some version of moral realism? Or if morality has an adaptive explanation in genetic terms—if it is, as Joyce writes, "just something

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that helped our ancestors make more babies"—might such an explanation actually undermine morality's central role in our lives? He carefully examines both the evolutionary "vindication of morality" and the evolutionary "debunking of morality," considering the skeptical view more seriously than have others who have treated the subject. Interdisciplinary and combining the latest results from the empirical sciences with philosophical discussion, *The Evolution of Morality* is one of the few books in this area written from the perspective of moral philosophy. Concise and without technical jargon, the arguments are rigorous but accessible to readers from different academic backgrounds. Joyce discusses complex issues in plain language while advocating subtle and sometimes radical views. *The Evolution of Morality* lays the philosophical foundations for further research into the biological understanding of human morality.

The Evolution of Morality

Presents an account of how the author, trained as a behavioral scientist in the 1960s, came to grapple with the uncomfortable justifications offered for the use of primates in research labs, and became one of the scientists at the forefront of the movement to end research experiments on primates.

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