

## Neuroethics Journal

While neuroscience has provided insights into the structure and function of nervous systems, hard questions remain about the nature of consciousness, mind, and self. Perhaps the most difficult questions involve the meaning of neuroscientific information, and how to pursue and utilize neuroscientific knowledge in ways that are consistent with some construal of social 'good'. Written for researchers and graduate students in neuroscience and bioethics, *Scientific and Philosophical Perspectives in Neuroethics* explores important developments in neuroscience and neurotechnology, and addresses the philosophical, ethical, and social issues and problems that such advancements generate. It examines three core questions. First, what is the scope and direction of neuroscientific inquiry? Second, how has progress to date affected scientific and philosophical ideas, and finally, what ethical issues and problems does this progress and knowledge incur, both now and in the future?

A landmark in the scientific literature, the *Oxford Handbook of Neuroethics* presents a pioneering review of a topic central to the biosciences. It breaks new ground in bringing together leading neuroscientists, philosophers, and lawyers to tackle some of the most significant ethical issues that face us now and will continue to do so.

A comprehensive introduction to using the tools and techniques of neuroscience to understand how consumers make decisions about purchasing goods and services. Contrary to the assumptions of economists, consumers are not always rational actors who make decisions in their own best interests. The new field of behavioral economics draws on the insights of psychology to study non-rational decision making. The newer field of consumer neuroscience draws on the findings, tools, and techniques of neuroscience to understand how consumers make judgments and decisions. This book is the first comprehensive treatment of consumer neuroscience, suitable for classroom use or as a reference for business and marketing practitioners. After an overview of the field, the text offers the background on the brain and physiological systems necessary for understanding how they work in the context of decision making and reviews the sensory and perceptual mechanisms that govern our perception and experience. Chapters by experts in the field investigate tools for studying the brain, including fMRI, EEG, eye-tracking, and biometrics, and their possible use in marketing. The book examines the relation of attention, memory, and emotion to consumer behavior; cognitive factors in decision making; and the brain's reward system. It describes how consumers develop implicit associations with a brand, perceptions of pricing, and how consumer neuroscience can encourage healthy behaviors. Finally, the book considers ethical issues raised by the application of neuroscience tools to marketing. Contributors Fabio Babiloni, Davide Baldo, David Brandt, Moran Cerf, Yuping Chen, Patrizia Cherubino, Kimberly Rose Clark, Maria Cordero-Merecuana, William A. Cunningham, Manuel Garcia-

Garcia, Ming Hsu, Ana Iorga, Philip Kotler, Carl Marci, Hans Melo, Kai-Markus Müller, Brendan Murray, Ingrid L. C. Nieuwenhuis, Graham Page, Hira Parikh, Dante M. Pirouz, Martin Reimann, Neal J. Roese, Irit Shapira-Lichter, Daniela Somarriba, Julia Trabulsi, Arianna Trettel, Giovanni Vecchiato, Thalia Vrantsidis, Sarah Walker

The first philosophical monograph on the ethics of memory manipulation (MM), "Forget Me Not: The Neuroethical Case Against Memory Manipulation" contends that any attempt to directly and intentionally erase episodic memories poses a grave threat to the human condition that cannot be justified within a normative moral calculus. Grounding its thesis in four evidential effects – namely, (i) MM disintegrates autobiographical memory, (ii) the disintegration of autobiographical memory degenerates emotional rationality, (iii) the degeneration of emotional rationality decays narrative identity, and (iv) the decay of narrative identity disables one to seek, identify, and act on the good – DePergola argues that MM cannot be justified as a morally licit practice insofar as it disables one to seek, identify, and act on the good. A landmark achievement in the field of neuroethics, this book is a welcome addition to both the scholarly and professional community in philosophical and clinical bioethics.

Over the last decade, there have been unparalleled advances in our understanding of brain sciences. But with the development of tools that can manipulate brain function, there are pressing ethical implications to this newfound knowledge of how the brain works. In *Neuroethics: Anticipating the Future*, a distinguished group of contributors tackle current and critical ethical questions and offer forward-looking insights. What new balances should be struck between diagnosis and prediction, or invasive and non-invasive interventions, given the rapid advances in neuroscience? Are new criteria needed for the clinical definition of death for those eligible for organ donation? As data from emerging technologies are made available on public databases, what frameworks will maximize benefits while ensuring privacy of health information? These challenging questions, along with numerous other neuroethical concerns, are discussed in depth. Written by eminent scholars from diverse disciplines including neurology and neuroscience, ethics and law, public health and philosophy, this new volume on neuroethics sets out the many necessary considerations for the future. It is essential reading for the field of neuroethics, neurosciences and psychology, and an invaluable resource for physicians in neurological medicine, academics in humanities and law, and health policy makers.

*Neurotechnology in National Security and Defense: Practical Considerations, Neuroethical Concerns* is the second volume in the *Advances in Neurotechnology* series. It specifically addresses the neuroethical, legal, and social issues arising from the use of neurotechnology in national security and defense agendas and applications. Of particular concern are the use of various neurotechnologies in military and intelligence operations training, acquisition of

neurobiological and cognitive data for intelligence and security, military medical operations, warfighter performance augmentation, and weaponization of neuroscience and neurotechnology. The contributors discuss the neuroethical questions and problems that these applications generate as well as potential solutions that may be required and developed. The book examines how developments in neurotechnology in national security and defense agendas are impacted by and affect ethical values and constructs, legal considerations, and overall conduct of the social sphere. Presenting an integrative perspective, leading international experts lay the scientific groundwork and establish the premises necessary to appreciate the ethical aspects of neurotechnology in national security and defense. It is not a question of "if" neurotechnology will be used in such ways, but when, how, and to what extent. Therefore, it is imperative to foster a deeper understanding of neurotechnology, the problems and debates arising from its use in national security and defense, and how such issues can and should be addressed. In doing so, we can guide and govern the use of these innovative neurotechnologies in ways that uphold ethical accountability.

A survey of the emerging field of neuroethics that calls for a multidisciplinary, pragmatic approach for tackling key issues and improving patient care. Today the measurable health burden of neurological and mental health disorders matches or even surpasses any other cluster of health conditions. At the same time, the clinical applications of recent advances in neuroscience are hardly straightforward. In *Pragmatic Neuroethics*, Eric Racine argues that the emerging field of neuroethics offers a way to integrate such specialties as neurology, psychiatry, and neurosurgery with the humanities and social sciences, neuroscience research, and related healthcare professions, with the goal of tackling key ethical challenges and improving patient care. Racine provides a survey of the often diverging perspectives within neuroethics, offers a theoretical framework supported by empirical data, and discusses the neuroethical implications of such issues as media coverage of neuroscience innovation and the importance of public concerns and lay opinion; nonmedical use of pharmaceuticals for performance enhancement; and the discord between intuitive notions about consciousness and behavior and the scientific understanding of them. Racine proposes a pragmatic neuroethics that combines pluralistic approaches, bottom-up research perspectives, and a focus on practical issues (in contrast to other more theoretical and single-discipline approaches to the field). [He discusses ethical issues related to powerful neuroscience insights into the mechanisms underlying moral reasoning, cooperative behavior, and such emotional processes as empathy.] In addition, he outlines a pragmatic framework for neuroethics, based on the philosophy of emergentism, which identifies conditions for the meaningful contribution of neuroscience to ethics, and sketches new directions and strategies for meeting future challenges for neuroscience and society. Basic Bioethics series

The treatment of pain and scientific pursuits to understand the mechanisms

underlying pain raise many ethical, legal, and social issues. For the first time, this edited volume brings together content experts in the fields of pain, pediatrics, neuroscience, brain imaging, bioethics, health humanities, and the law to provide insight into the timely topic of pain neuroethics. This landmark volume of the state of the art exploration of pain neuroethics will be a must read for those interested in the ethical issues in pain research, treatment, and management. Provides the authority and expertise of leading contributors from an international board of authors Represents the first release in the Developments in Neuroethics and Bioethics series The content includes representatives from a diversity of disciplines

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 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.

Neuroscience has dramatically increased understanding of how mental states and processes are realized by the brain, thus opening doors for treating the multitude of ways in which minds become dysfunctional. This book explores questions such as when is it permissible to alter a person's memories, influence personality traits or read minds? What can neuroscience tell us about free will, self-control, self-deception and the foundations of morality? The view of neuroethics offered here argues that many of our new powers to read, alter and control minds are not entirely unparalleled with older ones. They have, however, expanded to include almost all our social, political and ethical decisions. Written primarily for graduate students, this book will appeal to anyone with an interest in the more philosophical and ethical aspects of the neurosciences.

The *Routledge Handbook of Neuroethics* offers the reader an informed view of how the brain sciences are being used to approach, understand, and reinvigorate traditional philosophical questions, as well as how those questions, with the grounding influence of neuroscience, are being revisited beyond clinical and research domains. It also examines how contemporary neuroscience research might ultimately impact our

understanding of relationships, flourishing, and human nature. Written by 61 key scholars and fresh voices, the Handbook's easy-to-follow chapters appear here for the first time in print and represent the wide range of viewpoints in neuroethics. The volume spotlights new technologies and historical articulations of key problems, issues, and concepts and includes cross-referencing between chapters to highlight the complex interactions of concepts and ideas within neuroethics. These features enhance the Handbook's utility by providing readers with a contextual map for different approaches to issues and a guide to further avenues of interest.

An introduction to theories about language in attempts to understand and transform women's lives. This evolving body of work encompasses linguistics, anthropology, literary and cultural theory, psychoanalysis and postmodern philosophy.

Consent is a basic component of the ethics of human relations, making permissible a wide range of conduct that would otherwise be wrongful. Consent marks the difference between slavery and employment, permissible sexual relations and rape, borrowing or selling and theft, medical treatment and battery, participation in research and being a human guinea pig. This book assembles the contributions of a distinguished group of scholars concerning the ethics of consent in theory and practice. Part One addresses theoretical perspectives on the nature and moral force of consent, and its relationship to key ethical concepts, such as autonomy and paternalism. Part Two examines consent in a broad range of contexts, including sexual relations, contracts, selling organs, political legitimacy, medicine, and research.

This edited book provides an in-depth examination of the implications of neuroscience for the criminal justice system. It draws together experts from across law, neuroscience, medicine, psychology, criminology and ethics, and offers an important contribution to current debates at the intersection of these fields. The volume examines how neuroscience might contribute to fairer and more effective criminal justice systems, and how neuroscientific insights and information can be integrated into criminal law in a way that respects fundamental rights and moral values. The book's first part approaches these questions from a legal perspective, followed by ethical accounts in part two. The authors address a wide range of topics and approaches: some are more theoretical, like those regarding the foundations of punishment; others are more practical, like those concerning the use of brain scans in the courtroom. Together, they illustrate the thoroughly interdisciplinary nature of the debate, in which science, law and ethics are closely intertwined. This book will appeal in particular to students and scholars of law, neuroscience, criminology, socio-legal studies and philosophy. Chapter 8 is available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com). Sjors Ligthart is PhD candidate in Criminal Law at Tilburg University, the Netherlands. Dave van Toor is Assistant Professor of Criminal Law at Utrecht University, the Netherlands. Tijs Kooijmans is Professor of Criminal Law at Tilburg University, the Netherlands. Thomas Douglas is Professor of Applied Philosophy and Director of Research and Development at the Oxford Uehiro Centre of Practical Ethics, Faculty of Philosophy, and Senior Research Fellow at Jesus College, University of Oxford, UK. Gerben Meynen is Professor of Forensic Psychiatry at Utrecht University and Professor of Ethics and Psychiatry at Vrije Universiteit Amsterdam, the Netherlands.

New advances in neuroscience promise innovations in national security, especially in

the areas of law enforcement, intelligence collection, and armed conflict. But ethical questions emerge about how we can, and should, use these innovations. This book draws on the open literature to map the development of neuroscience, particularly through funding by the Defense Advanced Research Projects Agency, in certain areas like behavior prediction, behavior modification, and neuroenhancement, and its use in the creation of novel weapons. It shows how advances in neuroscience and new technologies raise ethical issues that challenge the norms of law enforcement, intelligence collection, and armed conflict, broadly grouped under the term "national security." Increasing technological sophistication without attention to ethics, this book argues, risks creating conditions for the development of "dual-use" technologies that may be prone to misuse, are grounded in an incomplete understanding of the brain, or are based on a limited view of the political contexts in which these technologies arise. A concluding section looks at policy and regulatory options that might promote the benefits of emerging neuroscience, while mitigating attendant risks. Key Features: First broad survey of the ethics of neuroscience as it applies to national security Innovative ethical analysis over a range of cross-cutting technologies including behavior prediction and modification tools, human enhancement, and novel lethal and nonlethal weapons Ethical analysis covering all stages from the development, testing, and use (or misuse) of these technologies; and decisions from the individual scientist to the nation state Strong policy focus at multiple levels, from self-governance to international regulation Combination of philosophical analysis with grounded, practical recommendations This book explores relevant questions within this multi-faceted and rapidly growing field, and will help to define and foster scholarship within the intersection of neuroethics and clinical neuroscience.

Neuroethics Anticipating the future Oxford University Press

Neil Messer brings together a range of theoretical and practical questions raised by current research on the human brain: questions about both the 'ethics of neuroscience' and the 'neuroscience of ethics'. While some of these are familiar to theologians, others have been more or less ignored hitherto, and the field of neuroethics as a whole has received little theological attention. Drawing on both theological ethics and the science-and-theology field, Messer discusses cognitive-scientific and neuroscientific studies of religion, arguing that they do not give grounds to dismiss theological perspectives on the human self. He examines a representative range of topics across the whole field of neuroethics, including consciousness, the self and the value of human life; the neuroscience of morality; determinism, freewill and moral responsibility; and the ethics of cognitive enhancement.

Calls for a "consilient" or "vertically integrated" approach to the study of human mind and culture have, for the most part, been received by scholars in the humanities with either indifference or hostility. One reason for this is that consilience has often been framed as bringing the study of humanistic issues into line with the study of non-human phenomena, rather than as something to which humanists and scientists contribute equally. The other major reason that consilience has yet to catch on in the humanities is a dearth of compelling

examples of the benefits of adopting a consilient approach. *Creating Consilience* is the product of a workshop that brought together internationally-renowned scholars from a variety of fields to address both of these issues. It includes representative pieces from workshop speakers and participants that examine how adopting such a consilient stance -- informed by cognitive science and grounded in evolutionary theory -- would concretely impact specific topics in the humanities, examining each topic in a manner that not only cuts across the humanities-natural science divide, but also across individual humanistic disciplines. By taking seriously the fact that science-humanities integration is a two-way exchange, this volume takes a new approach to bridging the cultures of science and the humanities. The editors and contributors formulate how to develop a new shared framework of consilience beyond mere interdisciplinarity, in a way that both sides can accept.

Explores the ethical, legal, and societal issues arising from brain imaging, psychopharmacology, and other new developments in neuroscience.

Neuroscience increasingly allows us to explain, predict, and even control aspects of human behavior. The ethical issues that arise from these developments extend beyond the boundaries of conventional bioethics into philosophy of mind, psychology, theology, public policy, and the law. This broader set of concerns is the subject matter of neuroethics. In this book, leading neuroscientist Martha Farah introduces the reader to the key issues of neuroethics, placing them in scientific and cultural context and presenting a carefully chosen set of essays, articles, and excerpts from longer works that explore specific problems in neuroethics from the perspectives of a diverse set of authors. Included are writings by such leading scientists, philosophers, and legal scholars as Carl Elliot, Joshua Greene, Steven Hyman, Peter Kramer, and Elizabeth Phelps. Topics include the ethical dilemmas of cognitive enhancement; issues of personality, memory and identity; the ability of brain imaging to both persuade and reveal; the legal implications of neuroscience; and the many ways in which neuroscience challenges our conception of what it means to be a person. Neuroethics is an essential guide to the most intellectually challenging and socially significant issues at the interface of neuroscience and society. Farah's clear writing and well-chosen readings will be appreciated by scientist and humanist alike, and the inclusion of questions for discussion in each section makes the book suitable for classroom use. Contributors Zenab Amin, Ofek Bar-Ilan, Richard G. Boire, Philip Campbell, Turhan Canli, Jonathan Cohen, Robert Cook-Degan, Lawrence H. Diller, Carl Elliott, Martha J. Farah, Rod Flower, Kenneth R. Foster, Howard Gardner, Michael Gazzaniga, Jeremy R. Gray, Henry Greely, Joshua Greene, John Harris, Andrea S. Heberlein, Steven E. Hyman, Judy Iles, Eric Kandel, Ronald C. Kessler, Patricia King, Adam J. Kolber, Peter D. Kramer, Daniel D. Langleben, Steven Laureys, Stephen J. Morse, Nancey Murphy, Eric Parens, Sidney Perkowitz, Elizabeth A. Phelps, President's Council on Bioethics, Eric Racine, Barbara Sahakian, Laura A. Thomas, Paul M. Thompson, Stacey A.

Tovino, Paul Root Wolpe

Research increasingly suggests that addiction has a genetic and neurobiological basis, but efforts to translate research into effective clinical treatments and social policy needs to be informed by careful ethical analyses of the personal and social implications. Scientists and policy makers alike must consider possible unintended negative consequences of neuroscience research so that the promise of reducing the burden and incidence of addiction can be fully realized and new advances translated into clinically meaningful and effective treatments. This volume brings together leading addiction researchers and practitioners with neuroethicists and social scientists to specifically discuss the ethical, philosophical, legal and social implications of neuroscience research of addiction, as well as its translation into effective, economical and appropriate policy and treatments. Chapters explore the history of ideas about addiction, the neuroscience of drug use and addiction, prevention and treatment of addiction, the moral implications of addiction neuroscience, legal issues and human rights, research ethics, and public policy. Features outstanding and truly international scholarship, with chapters written by leading experts in neuroscience, addiction medicine, psychology and more Informs psychologists of related research in neuroscience and vice versa, giving researchers easy one-stop access to knowledge outside their area of specialty

Rehabilitation professionals need to be grounded in moral principles in order to meet the needs of patients and effectively collaborate in interprofessional healthcare teams. *Rehabilitation Ethics for Interprofessional Practice* introduces a common language and theory for interdisciplinary ethics education and practice while establishing a moral foundation and guiding readers in how to put ethical principles into action. The text begins by describing the moral commons, a framework for ethical deliberation characterized by mutual respect for personal and professional identity, common language, inclusion of relevant stakeholders, and the dialogic process. The authors then describe the Dialogic Engagement Model (DEM), gives professionals a structure and space for learning and understanding within their teams as they strive to provide ethical patient care. *Rehabilitation Ethics for Interprofessional Practice* is forward-looking, grounded in both theory and practice. A resource for faculty

Neuroethics is a theoretical and practical discipline that considers the many ethical issues that arise in neuroscience. From its inception, the field has sought to develop an ethical vision from within the confines of science, a task that is both misguided and, in the end, impossible. Providing a solid theoretical foundation for neuroethics means looking to other sources, most specifically to philosophy. In this groundbreaking work, the author examines the current underpinnings of neuroethical thinking and finds them inadequate to the task of neuroethics – to think ethically about persons, technology and society. Grounded in the physicalist and deterministic presuppositions of contemporary science, and drawing on utilitarian thought, neuroethics as currently conceived lacks the ability to develop

a robust and adequate notion of persons and of ethics. Philosophical Neuroethics examines the historical reasons for this state of affairs, for the purpose of proposing a more viable alternative – drawing on the tradition of personalism for a more adequate metaphysical, epistemological, anthropological and ethical vision of the human person and of ethics that can serve as a solid foundation for the theory and practice of neuroethical decision making as it touches on the neurologic and psychiatric care of individuals, our philosophy of technology and the social implications of neuroscience that touch on public policy, neurotechnology, the justice system and the military. Drawing on the personalist philosophical tradition that emerged in the twentieth century in the works of Mounier, Maritain, Guardini, Wojtyla, and the Modern Ontological Personalism of Juan Manuel Burgos, Philosophical Neuroethics brings to light the limitations of contemporary neuroethical thinking and sets forth a comprehensive vision of the human person capable of interacting with the contemporary questions raised by neuroscience and technology.

With the conclusion of the Decade of the Brain and Decade of the Mind, neuroscience has advanced well beyond single neuron functions, and begun to investigate global properties that emerge from central nervous system operation. Core ethical issues for neural intervention, in consequence, now touch on concerns over how the individual as a whole may be affected. Central to these concerns is the fundamental value of the human being, which lends normative weight to questions, interventions, and practices influencing him or her. Yet, despite wide recognition of the crucial relevance of human value, the derivation of metaethical principles that underwrite this value is by no means uniformly agreed to. Why and how the human being is normatively privileged, accordingly, emerge as core questions that frame issues of ethical praxis. This book tackles this dissonance, and exposes the philosophical foundations that are rooting contemporary divisions in ethical approaches to intervention in the nervous system.

Based on the study of neuroscientific developments and innovations, examined from different angles, this Handbook provides a comprehensive overview of the international neuroethical debate, and offers unprecedented insights into the impact of neuroscientific research, diagnosis, and therapy. Neuroethics – as a multi-disciplinary and inter-disciplinary endeavor – examines the implications of the neurosciences for human beings in general and for their self-understanding and their social interactions in particular. The range of approaches adopted in neuroethics and thus in this handbook includes but is not limited to historical, anthropological, ethical, philosophical, theological, sociological and legal approaches. The Handbook deals with a plethora of topics, divided into in three parts: the first part contains discussions of theories of neuroethics and how neuroscience impacts on our understanding of personal identity, free will, and other philosophical concepts. The second part is dedicated to issues involved in current and future clinical applications of neurosciences, such as brain

stimulation, brain imaging, prosthetics, addiction, and psychiatric ethics. The final part deals with neuroethics and society and includes chapters on neurolaw, neurotheology, neuromarketing, and enhancement.

This book springs from a multidisciplinary, multi-organizational, and multi-sector conversation about the privacy and ethical implications of research in human affairs using big data. The need to cultivate and enlist the public's trust in the abilities of particular scientists and scientific institutions constitutes one of this book's major themes. The advent of the Internet, the mass digitization of research information, and social media brought about, among many other things, the ability to harvest – sometimes implicitly – a wealth of human genomic, biological, behavioral, economic, political, and social data for the purposes of scientific research as well as commerce, government affairs, and social interaction. What type of ethical dilemmas did such changes generate? How should scientists collect, manipulate, and disseminate this information? The effects of this revolution and its ethical implications are wide-ranging. This book includes the opinions of myriad investigators, practitioners, and stakeholders in big data on human beings who also routinely reflect on the privacy and ethical issues of this phenomenon. Dedicated to the practice of ethical reasoning and reflection in action, the book offers a range of observations, lessons learned, reasoning tools, and suggestions for institutional practice to promote responsible big data research on human affairs. It caters to a broad audience of educators, researchers, and practitioners. Educators can use the volume in courses related to big data handling and processing. Researchers can use it for designing new methods of collecting, processing, and disseminating big data, whether in raw form or as analysis results. Lastly, practitioners can use it to steer future tools or procedures for handling big data. As this topic represents an area of great interest that still remains largely undeveloped, this book is sure to attract significant interest by filling an obvious gap in currently available literature.

The neurosciences are more than a collection of scientific practices - they offer up various ways of thinking about mind, body and society. This title casts light on the place, role and impact of neuroscience. It reflects on the insights the neurosciences have to offer sociology.

Since the 1980s, MRI scanners have told us much about brain function and played an important role in the clinical diagnosis of a number of conditions - both in the brain and the rest of the body. Their routine use has made the diagnosis of brain tumours and brain damage both quicker and more accurate. However, some neuroscientific advances, in particular those that relate specifically to the mind have provoked excitement and discussion in a number of disciplines. One of the most thought provoking developments in recent neuroscience has been the progress made with 'mind-reading'. There seems nothing more private than one's thoughts, some of which we might choose to share with others, and some not. Yet, until now, little has been published on the particular issue of privacy in relation to 'brain' or 'mind' reading. I know what you're thinking provides a

fascinating, interdisciplinary account of the neuroscientific evidence on 'mind reading', as well as a thorough analysis of both legal and moral accounts of privacy. It brings together leading academics from the fields of psychology, neuroscience, philosophy, and law. The book considers such issues as the use of imaging to detect awareness in those considered to be in a vegetative state. It looks at issues of mental imaging and national security, the neurobiology of violence, and issues regarding diminished responsibility in criminals, and thus reduced punishment. It also considers how the use of neuroimaging can and should be regulated. Providing a ground breaking exploration of how brain imaging technologies can throw light on our mental capacities, states, and acts, this is an important new book for psychologists, neuroscientists, bioethicists, philosophers, and lawyers.

This book focuses on neuroethics in higher education in the United States. After introducing readers to the philosophical and policy foundations of the neuroethics of higher education, this book explores essential conundrums in the neuroethical practice of higher education in modern democracies. Focusing on neuroethics from the perspective of universally designed learning and policy design sets this project apart from other work in the field. Advances in neuroscience and changes in attitudes towards disability have identified mechanisms by which higher education infrastructures interact with both individuals considered neurotypical and those with identified disabilities to diminish students' capacity to enter, persist, and complete higher education. Policy to date has focused on identified disabilities as a requirement for accommodations. This strategy both underestimates the effect of ill-fitting infrastructures on those considered neurologically typical and serves to stratify the student body. As a result, neuroethical gaps abound in higher education.

Marketing research in modern business has developed to include more than just data analytics. Today, an emerging interest within scientific marketing researches is the movement away from consumer research toward the use of direct neuroscientific approaches called neuromarketing. For companies to be profitable, they need to utilize the neuromarketing approach to understand how consumers view products and react to marketing, both consciously and unconsciously. *Analyzing the Strategic Role of Neuromarketing and Consumer Neuroscience* is a key reference source that provides relevant theoretical frameworks and the latest empirical research findings in the neuromarketing field. While highlighting topics such as advertising technologies, consumer behavior, and digital marketing, this publication explores cognitive practices and the methods of engaging customers on a neurological level. This book is ideally designed for marketers, advertisers, product developers, brand managers, consumer behavior analysts, consumer psychologists, managers, executives, behaviorists, business professionals, neuroscientists, academicians, and students.

Understanding and improving how organizations work and are managed is the

object of management research and practice, and this topic is of longstanding interest in the academia and in society at large. More recently, the contribution that the study of the brain could make to, notably, our understanding of decisions, emotional reactions, and behaviors has led to the emergence of the field of “organizational neuroscience”. Within the field of management, organizational neuroscience seeks to explore linkages between neuroscience research, theories, and methods and management research. Its primary goal is to incorporate findings on the cognitive processes underlying the thoughts, behaviors and attitudes of organizational actors in order to better inform management theories, and to assist in understanding, predicting and improving these behaviors in the workplace. As a result, we have seen in the last decade a flurry of research projects and publications in organizational neuroscience, as well as novel or rejuvenated innovations around neuromarketing, neuroleadership, and cognitive enhancement in the work place, to name a few. However, research and practical applications in organizational neuroscience pose profound ethical challenges about, for example, organizational responsibility in the responsible use of scientific innovation. Drawing on recent debates in the field, and in response to upcoming ethical challenges of organization neuroscience, this book introduces “organizational neuroethics” as an emerging interdisciplinary field that addresses the ethics of organizational neuroscience research and applications, as well as the neuroscience of organizational ethics. The first part focuses on the ethics of organizational neuroscience and several chapters tackle the ethics of neuromarketing or neuroleadership and discuss the ethical issues associated with neuroenhancement practice in the workplace. The second part of the book addresses cutting-edge topics in the neuroscience of organizational ethics. Written by international experts in the fields of management, neuroscience, ethics, and social science, this book will be of prime interest to practitioners, researchers and students in the various fields concerned with improving management research and practices, as well as organizational ethics.

This book is focused on the examination of the particular relationship between developments in neuroscience and commonsense concepts, such as free will, personal identity, privacy, etc., which feature prominently in moral discourse. In the book common sense is recast as an ever-shifting repository of theories from many domains, including science. Utilizing this alternative characterization of common sense, the book reexamines the impact of neuroscience on commonsense moral conceptions. Neuroethics is one of the newest, developing branches of Bioethics. Topics often raised include issues of free will, personal identity and the self; the possible ethical implication of memory manipulation; brain imaging and mind-reading; brain stimulation/enhancement and its impacts on personal identity; and brain death.

Establishing the parameters and goals of the new field of mind, brain, and education science. A groundbreaking work, *Mind, Brain, and Education Science* explains the new transdisciplinary

academic field that has grown out of the intersection of neuroscience, education, and psychology. The trend in “brain-based teaching” has been growing for the past twenty years and has exploded in the past five to become the most authoritative pedagogy for best learning results. Aimed at teachers, teacher trainers and policy makers, and anyone interested in the future of education in America and beyond, *Mind, Brain, and Education Science* responds to the clamor for help in identifying what information could and should apply in classrooms with confidence, and what information is simply commercial hype. Combining an exhaustive review of the literature, as well as interviews with over twenty thought leaders in the field from six different countries, this book describes the birth and future of this new and groundbreaking discipline. *Mind, Brain, and Education Science* looks at the foundations, standards, and history of the field, outlining the ways that new information should be judged. Well-established information is elegantly separated from “neuromyths” to help teachers split the wheat from the chaff in classroom planning, instruction and teaching methodology.

Recent advances in the brain sciences have dramatically improved our understanding of brain function. As we find out more and more about what makes us tick, we must stop and consider the ethical implications of this new found knowledge. Will having a new biology of the brain through imaging make us less responsible for our behavior and lose our free will? Should certain brain scan studies be disallowed on the basis of moral grounds? Why is the media so interested in reporting results of brain imaging studies? What ethical lessons from the past can best inform the future of brain imaging? These compelling questions and many more are tackled by a distinguished group of contributors to this, the first-ever volume on neuroethics. The wide range of disciplinary backgrounds that the authors represent, from neuroscience, bioethics and philosophy, to law, social and health care policy, education, religion and film, allow for profoundly insightful and provocative answers to these questions, and open up the door to a host of new ones. The contributions highlight the timeliness of modern neuroethics today, and assure the longevity and importance of neuroethics for generations to come. The Corona pandemic kills people, endangers families, friends, communities, companies, institutions, societies, economies and global networks. It brings about triage, unemployment, social distancing, and home schooling. Countries respond differently, often set aside civil and basic human rights. Families and friends cannot get together, visiting the sick, nor attending funerals. This pestilence is clearly a cultural, economic and political disease. 40 leaders in medical and sociological research, in politics, religion, and consulting from 24 countries offer diverse, sometimes controversial answers, collected by Martin Woesler and Hans-Martin Sass

This important volume is the first to address the use of neuroimaging in civil and criminal forensic contexts and to include discussion of prior precedents and court decisions. Equally useful for practicing psychiatrists and psychologists, it reviews both the legal and ethical considerations of neuroimaging.

*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

The *Oxford Handbook of Philosophy and Neuroscience* is a state-of-the-art collection of interdisciplinary research spanning philosophy (of science, mind, and ethics) and current neuroscience. Containing chapters written by some of the most prominent philosophers working in this area, and in some cases co-authored with neuroscientists, this volume reflects both the breadth and depth of current work in this exciting field. Topics include the nature of

explanation in neuroscience; whether and how current neuroscience is reductionistic; consequences of current research on the neurobiology of learning and memory, perception and sensation, neurocomputational modeling, and neuroanatomy; the burgeoning field of neuroethics and the neurobiology of motivation that increasingly informs it; implications from neurology and clinical neuropsychology, especially in light of some bizarre symptoms involving misrepresentations of self; the extent and consequences of multiple realization in actual neuroscience; the new field of neuroeudamonia; and the neurophilosophy of subjectivity. This volume will interest philosophers working in numerous fields who wish to see how current neuroscience is being brought to bear directly on philosophical issues. It will also be of interest to neuroscientists who wish to learn how the research programs of some of their colleagues are being enriched by interaction with philosophers, and finally to those working in any interdisciplinary field who wish to see how two seemingly disparate disciplines--one traditional and humanistic, the other new and scientific--are being brought together to both disciplines' mutual benefit.

Addiction is a significant health and social problem and one of the largest preventable causes of disease globally. Neuroscience promises to revolutionise our ability to treat addiction, lead to recognition of addiction as a 'real' disorder in need of medical treatment and thereby reduce stigma and discrimination. However, neuroscience raises numerous social and ethical challenges: • If addicted individuals are suffering from a brain disease that drives them to drug use, should we mandate treatment? • Does addiction impair an individual's ability to consent to research or treatment? • How will neuroscience affect social policies towards drug use? Addiction Neuroethics addresses these challenges by examining ethical implications of emerging neurobiological treatments, including: novel psychopharmacology, neurosurgery, drug vaccines to prevent relapse, and genetic screening to identify individuals who are vulnerable to addiction. Essential reading for academics, clinicians, researchers and policy-makers in the fields of addiction, mental health and public policy.

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