

The Ethics Of Deep Brain Stimulation Dbs Springer

Decoding **The Ethics Of Deep Brain Stimulation Dbs Springer**: Revealing the Captivating Potential of Verbal Expression

In a time characterized by interconnectedness and an insatiable thirst for knowledge, the captivating potential of verbal expression has emerged as a formidable force. Its power to evoke sentiments, stimulate introspection, and incite profound transformations is genuinely awe-inspiring. Within the pages of "**The Ethics Of Deep Brain Stimulation Dbs Springer**," a mesmerizing literary creation penned by a celebrated wordsmith, readers attempt an enlightening odyssey, unraveling the intricate significance of language and its enduring affect our lives. In this appraisal, we shall explore the book's central themes, evaluate its distinctive writing style, and gauge its pervasive influence on the hearts and minds of its readership.

Human ICT Implants: Technical, Legal and Ethical Considerations Mark N. Gasson 2012-06-16

Human information and communication technology (ICT) implants have developed for many years in a medical context. Such applications have become increasingly advanced, in some cases modifying fundamental brain function. Today, comparatively low-tech implants are being increasingly employed in non-therapeutic contexts, with applications ranging from the use of ICT implants for VIP entry into nightclubs, automated payments for goods, access to secure facilities and for those with a high risk of being kidnapped. Commercialisation and growing potential of human ICT implants have generated debate over the ethical, legal and social aspects of the technology, its products and application. Despite stakeholders calling for greater policy and legal certainty within this area, gaps have already begun to emerge between the commercial reality of human ICT implants and the current legal frameworks designed to regulate these products. This book focuses on the latest technological developments and on the legal, social and ethical implications of the use and further application of these technologies.

[Happiness—Concept, Measurement and Promotion](#) Yew-Kwang Ng 2021-12-03 This open access book defines happiness intuitively and

explores several common conceptual mistakes with regard to happiness. It then moves on to address topical issues including, but not limited to, whether money can buy you happiness, why happiness is ultimately the only thing of intrinsic value, and the various factors important for happiness. It also presents a more reliable and interpersonally comparable method for measuring happiness and discusses twelve factors, from A to L, that are crucial for individual happiness: attitude, balance, confidence, dignity, engagement, family/friends, gratitude, health, ideals, joyfulness, kindness and love. Further, it examines important public policy considerations, taking into account recent advances in economics, the environmental sciences, and happiness studies. Novel issues discussed include: an environmentally responsible happy nation index to supplement GDP, the East Asian happiness gap, a case for stimulating pleasure centres of the brain, and an argument for higher public spending.

Brain Stimulation Andres M. Lozano 2013-11-11 The field of brain stimulation is expanding rapidly, with techniques such as DBS, TMS, and tDCS moving from the research community into clinical diagnosis and treatment. Clinical applications include treating disorders such as Parkinson's disease, dystonia, and even depression. The chapters of Brain Stimulation are written by leading international researchers and clinical

specialists include coverage of techniques, modes of action and applications in physiology and therapeutics. The combination of research and clinical coverage will be of interest to neurologists, neurosurgeons, psychiatrists, neuroscientists, and health care workers. A comprehensive introduction and overview of deep brain stimulation (DBS) Coverage of DBS, transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS) Details the basic science and research utility of DBS and clinical application

Posthuman Cyberware Matthew E. Gladden

2017-08-20 You don't know how far you can trust what you see or feel or remember, because it could all just be a byproduct of your neural implant or illusions fabricated by a neurohacker. Self-evolving computer viruses and stray nanorobotic swarms have taken up residence in the components of your robotic prosthetic arm. Battles over access to neurocybernetic enhancement, life-extension biotech, and immersive VR paradises are fragmenting humanity into new strata of haves and have-nots. You can never tell whether the full-body cyborgs that you see in the street belong to military units, megacorps, or bands of hackers-for-hire... or maybe all three at once. Such near-future cyberdystopias provide the perfect setting for a hard-SF roleplaying game campaign. But how much reality lies beneath their surface? Could a human mind really learn how to operate a full cyborg body that has wheels or wings or dozens of robotic tentacles, or would it be too 'alien'? If relatively small changes in brain temperature can cause behavioral impacts (or even brain damage), is it advisable to implant a heat-spewing miniaturized supercomputer in someone's cranium? A neural jack that lets you instantly download new skills sounds great, but could such a thing actually work? And which of your cognitive functions could a hacker take control of by compromising such a device? If you've ever thought about any of these questions when designing or running an adventure, then Mnemoclave's *Posthuman Cyberware Sourcebook* series is meant for you. It's designed especially for GMs who want to give their campaigns a grittier

edge and loads of surprises that'll keep their players on their toes - and for serious gamers who want to map out the potential and limitations of their characters' cyberware from a new perspective. This first volume in the series offers an introduction to the use of neuroprostheses for sensory, cognitive, and motor enhancement and explores distinctions between posthuman and transhuman cyberware. It's not simply a tale of artificial eyes with telescopic night vision or combat-grade cyberlimbs but also a blueprint for the development of neuroprosthetically enhanced imagination, emotions, and conscience and the creation of human-synthetic hive minds. The volume considers neuroprosthetic devices' human hosts in their three roles as sapient minds, embodied organisms, and social and economic actors to explain how cyberware can be employed either as tools for personal empowerment and liberation or mechanisms of enslavement and zombification. The book serves as a resource for designing campaigns or one-off adventures set in worlds with a cyberpunk, postcyberpunk, or biopunk milieu in which posthumanizing cyberware exists and societies are tilting toward the dystopian. The text includes dozens of special inserts with plot hooks, character traits, equipment descriptions, and ideas regarding setting and atmosphere that help you incorporate the material directly into your game, regardless of which rule system you're running.

Autonomy, Rationality, and Contemporary

Bioethics Jonathan Pugh 2020 Personal autonomy is often lauded as a key value in contemporary Western bioethics, and the claim that there is an important relationship between autonomy and rationality is often treated as an uncontroversial claim in this sphere. Yet, there is also considerable disagreement about how we should cash out the relationship between rationality and autonomy. In particular, it is unclear whether a rationalist view of autonomy can be compatible with legal judgments that enshrine a patient's right to refuse medical treatment, regardless of whether ". . . the reasons for making the choice are rational, irrational, unknown or even non-existent". In this book, I bring recent philosophical work on the nature of

rationality to bear on the question of how we should understand autonomy in contemporary bioethics. In doing so, I develop a new framework for thinking about the concept, one that is grounded in an understanding of the different roles that rational beliefs and rational desires have to play in personal autonomy. Furthermore, the account outlined here allows for a deeper understanding of different form of controlling influence, and the relationship between our freedom to act, and our capacity to decide autonomously. I contrast my rationalist with other prominent accounts of autonomy in bioethics, and outline the revisionary implications it has for various practical questions in bioethics in which autonomy is a salient concern, including questions about the nature of informed consent and decision-making capacity.

Deep Brain Stimulation for Parkinson's Disease Gordon H. Baltuch 2007-03-19

Considered the largest breakthrough in the treatment of Parkinson's disease in the past 40 years, Deep Brain Stimulation (DBS) is a pioneering procedure of neurology and functional neurosurgery, forging enormous change and growth within the field. The first comprehensive text devoted to this surgical therapy, Deep Brain Stimulation for Parkinson's

Ethics in Neurosurgical Practice Stephen Honeybul 2020-05-31 Neurosurgical interventions have the potential to change a person's concept of self, as well as affect their neurological and cognitive function to an unacceptable level for both patient and family. In an increasingly complex and evolving field, the ethical implications of treatments and their eventual outcomes must be carefully balanced. Ethics in Neurosurgical Practice is a comprehensive and practical guide for managing the treatment of patients with debilitating neurosurgical conditions. Chapters address specific conditions, such as traumatic brain injuries, ischemic stroke and spinal surgery, and the ethical challenges that each of these pose. Detailed case studies present potential scenarios that readers might encounter, and their outcomes. Future developments of this fast-paced field are expanded upon, including televised live surgery and the ethical aspects of

innovation in neurosurgery. A broad variety of contributors in different fields, including neurosurgeons, intensivists and bioethicists, ensures comprehensive coverage from a range of views and experiences.

Neurosurgical Neuropsychology Caleb M. Pearson 2018-11-15 Neurosurgical Neuropsychology: The Practical Application of Neuropsychology in the Neurosurgical Practice comprehensively explains the use of neuropsychology in neurosurgical settings. The book covers various preoperative techniques that may benefit neurosurgeons, such as functional neuroimaging (fMRI, SPECT, MEG) for presurgical cognitive mapping, as well as more traditional methods to predict outcomes after surgery, including neurocognitive testing and the Wada procedure. The book's editors discuss why neuropsychologists add considerable value to the neurosurgical team. A wide range of patient populations are covered, ranging from Deep Brain Stimulation candidates for Parkinson's disease, to adult and pediatric epilepsy candidates and neuro-oncology cases. This book is ideal for neurosurgeons, neuropsychologists, neuro-oncologists, epileptologists, general neurologists, and others who want to know more about the use of neuropsychology as a tool in the presurgical and postoperative phases of neurosurgery. Comprehensively explains the use of neuropsychology in neurosurgical settings Written for researchers and clinical practitioners, focusing on neurosurgery, neuropsychology, clinical neuroscience and neurology Discusses various techniques that may be of benefit to neurosurgeons, including presurgical and postoperative choices like functional neuroimaging (fMRI, SPECT, MEG) for presurgical cognitive mapping, neurocognitive testing, and the Wada procedure Intervening in the Brain Reinhard Merkel 2007-07-28 The wealth of insights into the brain's functioning gained by neuroscience in recent years led to the development of new possibilities for intervening in the brain such as neurotransplantation, neural prostheses and brain stimulation techniques. Moreover, new and safer classes of psychopharmaceutical drugs lend

themselves to neuroenhancement applications, i.e. they could be used to enhance cognitive capacities or emotional well-being without therapeutic need. This book offers extensive state-of-the-art accounts for these novel kinds of intervention, indicates future developments, and discusses the relevant philosophical, ethical and legal issues.

Life and Death Dan W. Brock 1993-01-29 Dan Brock explores the moral issues raised by new ideals of shared decision making between physicians and patients.

Deep Brain Stimulation (DBS) Applications

Tipu Aziz 2018-03-23 This book is a printed edition of the Special Issue "Deep Brain Stimulation (DBS) Applications" that was published in Brain Sciences

Pediatric Neurology Editor's Pick 2021 Jo Madeleine Wilmschurst 2021-08-31

Ethical Issues in Behavioral Neuroscience Grace Lee 2015-02-09 Behavioral neuroscience encompasses the disciplines of neurobiology and psychology to study mechanisms of behavior. This volume provides a contemporary overview of the current state of how ethics informs behavioral neuroscience research. There is dual emphasis on ethical challenges in experimental animal approaches and in clinical and nonclinical research involving human participants.

Handbook of Neuroethics Jens Clausen 2014-10-28 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.

Neuroethics Judy Illes 2017 Over the last decade, there have been unparalleled advances in our understanding of brain sciences. In this volume on neuroethics, a distinguished group of contributors from a range of disciplines discuss the ethical implications of this newfound knowledge and set out the many necessary considerations for the future.

Closed Loop Neuroscience Ahmed El Hady 2016-09-08 Closed Loop Neuroscience addresses the technical aspects of closed loop neurophysiology, presenting the implementation of these approaches spanning several domains of neuroscience, from cellular and network neurophysiology, through sensory and motor systems, and then clinical therapeutic devices. Although closed-loop approaches have long been a part of the neuroscientific toolbox, these techniques are only now gaining popularity in research and clinical applications. As there is not yet a comprehensive methods book addressing the topic as a whole, this volume fills that gap, presenting state-of-the-art approaches and the technical advancements that enable their application to different scientific problems in neuroscience. Presents the first volume to offer researchers a comprehensive overview of the technical realities of employing closed loop techniques in their work Offers application to in-vitro, in-vivo, and hybrid systems Contains an emphasis on the actual techniques used rather than on specific results obtained Includes exhaustive protocols and descriptions of software and hardware, making it easy for readers to implement the proposed methodologies Encompasses the clinical/neuroprosthetic aspect and how these systems can also be used to contribute to our understanding of basic

neurophysiology Edited work with chapters authored by leaders in the field from around the globe - the broadest, most expert coverage available

Psychiatric Neuroethics Walter Glannon 2019-01-10 Advances in psychiatric research and clinical psychiatry in the last 30 years have given rise to a host of new questions that lie at the intersection of psychiatry, neuroscience, philosophy and law. Such questions include: -Are psychiatric disorders diseases of the brain, caused by dysfunctional neural circuits and neurotransmitters? -What role do genes, neuro-endocrine, neuro-immune interactions and the environment play in the development of these disorders? -How do different explanations of the etiology and pathophysiology of mental illness influence diagnosis, prognosis and decisions about treatment? -Would it be rational for a person with a chronic treatment-resistant disorder to request euthanasia or assisted suicide to end their suffering? -Could psychiatric disorders be predicted and prevented? **Psychiatric Neuroethics** explores these questions in a comprehensive and systematic way, discussing the medical and philosophical implications of neuroscience and the Research Domain Criteria (RDoc) in the fields of psychiatry and mental health. It examines the extent to which circuit-based criteria can offer a satisfactory explanation of psychiatric disorders and how they compare with the symptom-based criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSMV). This book will be of interest to a multidisciplinary audience, including psychiatrists, neurologists, neurosurgeons, philosophers, psychologists and legal theorists. **Policy, Identity, and Neurotechnology** Veljko Dubljević 2023-04-26 In this volume the authors explore the landscape of thought on the ethical and policy implications of Brain Computer Interface (BCI) technology. BCI technology is a promising and rapidly advancing research area. Recent developments in the technology, based on animal and human studies, allow for the restoration and potential augmentation of faculties of perception and physical movement, and even the transfer of information between brains. Brain activity can be interpreted through

both invasive and non-invasive monitoring devices, allowing for novel, therapeutic solutions for individuals with disabilities and for other non-medical applications. However, a number of ethical and policy issues have been identified from the use of BCI technology, with the potential for near-future advancements in the technology to raise unique new ethical and policy questions that society has never grappled with before. The volume has three parts: 1) Past, Present and Future of BCI technology, 2) Ethical and Philosophical Issues and 3) Legal and Policy Implications. The rich and detailed picture of the field of BCI ethics with contributors from various fields and backgrounds, from academia and from the commercial sphere may serve as an introductory textbook into the neuroethics of BCI, or as a resource for neuroscientists, engineers, and medical practitioners to gain additional insight into the ethical and policy implications of their work.

Neurosurgical Treatments for Psychiatric Disorders Bomin Sun 2014-11-19 This book describes contemporary clinical practice in the application of neurosurgical methods to the treatment of psychiatric disorders. It covers diverse topics such as neuroimaging, ethics and a historical review, Gamma Knife and High Frequency Ultrasound ablation, deep brain electrical stimulation and preoperative evaluation and postoperative follow-up. Its application in Obsessive Compulsive Disorder, Major Depression, Tourette syndrome, Addiction, Anorexia, Aggression and Schizophrenia are discussed in separated chapters. This book presents concise information provided by clinical and academic practitioners and will facilitate the application of neurosurgical treatment techniques to patients.

Deep Brain Stimulation Peter Bain 2009-03-05 This handbook provides an overview of the use of deep brain stimulation (DBS) for the treatment of movement disorders as well as an introduction to the developing area of DBS for the management of psychiatric disease.

Machine Medical Ethics Simon Peter van Rysewyk 2014-09-05 The essays in this book, written by researchers from both humanities and science,

describe various theoretical and experimental approaches to adding medical ethics to a machine, what design features are necessary in order to achieve this, philosophical and practical questions concerning justice, rights, decision-making and responsibility in medical contexts, and accurately modeling essential physician-machine-patient relationships. In medical settings, machines are in close proximity with human beings: with patients who are in vulnerable states of health, who have disabilities of various kinds, with the very young or very old and with medical professionals. Machines in these contexts are undertaking important medical tasks that require emotional sensitivity, knowledge of medical codes, human dignity and privacy. As machine technology advances, ethical concerns become more urgent: should medical machines be programmed to follow a code of medical ethics? What theory or theories should constrain medical machine conduct? What design features are required? Should machines share responsibility with humans for the ethical consequences of medical actions? How ought clinical relationships involving machines to be modeled? Is a capacity for empathy and emotion detection necessary? What about consciousness? This collection is the first book that addresses these 21st-century concerns.

Neuroscience and Law Antonio D'Aloia
2020-06-01 There have been extraordinary developments in the field of neuroscience in recent years, sparking a number of discussions within the legal field. This book studies the various interactions between neuroscience and the world of law, and explores how neuroscientific findings could affect some fundamental legal categories and how the law should be implemented in such cases. The book is divided into three main parts. Starting with a general overview of the convergence of neuroscience and law, the first part outlines the importance of their continuous interaction, the challenges that neuroscience poses for the concepts of free will and responsibility, and the peculiar characteristics of a "new" cognitive liberty. In turn, the second part addresses the phenomenon of cognitive and moral enhancement, as well as the uses of neurotechnology and their impacts on health, self-

determination and the concept of being human. The third and last part investigates the use of neuroscientific findings in both criminal and civil cases, and seeks to determine whether they can provide valuable evidence and facilitate the assessment of personal responsibility, helping to resolve cases. The book is the result of an interdisciplinary dialogue involving jurists, philosophers, neuroscientists, forensic medicine specialists, and scholars in the humanities; further, it is intended for a broad readership interested in understanding the impacts of scientific and technological developments on people's lives and on our social systems.

Stereotactic and Functional Neurosurgery

Nader Pouratian 2020-02-28 This text presents a comprehensive and state-of-the-art approach to stereotactic and functional neurosurgery.

Overarching sections include achieving stereotactic precision, defining trajectories and targets, the biophysics of stereotactic therapies, diseases and targets, and the future of functional neurosurgery. Each section is designed to be inclusive of all relevant topics, serving as an unbiased resource to new clinicians in this field or established clinicians that are aiming to better understand complementary methods. Importantly, each section and the associated chapters can be used by basic and translational scientists as well as engineers and industry to better understand and deliver innovation to the field. Chapters within each section methodically analyze traditional and recently emerging concepts and techniques; address underlying principles with examples drawn from specific diseases and applications; and cover patient selection, target selection, available stereotactic methods, nuanced surgical methods, and clinical evidence across treatment options. Written by experts in each area, *Stereotactic and Functional Neurosurgery* is a definitive guide to the latest developments in stereotactic targeting, electrode implantation, surgical treatment of neurological and psychiatric disorders, the renaissance of stereotactic lesions, and the frontier of restorative neurosurgery for a variety of disorders that have no other therapeutic options.

Oxford Handbook of Neuroethics Judy Illes

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2013-02-21 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.

Ethics and Clinical Neuroinnovation Laura Weiss Roberts 2023-01-31 New ways of understanding the brain - its nature, its capacities, its function, and its dysfunction - hold great promise for human wellbeing. Novel therapeutics spurred by this understanding have important roles addressing many clinical conditions, including Alzheimer Disease, depression, addiction, and obsessive-compulsive disorder. This unique title explores a wide range of groundbreaking sciences and clinical practices for brain-based conditions, including deep brain stimulation, optogenetics, technology-delivered therapies, predictive testing, and new clinical uses of ketamine, cannabis, and other psychoactive substances. An introduction to the imperative to develop new treatments for devastating brain disorders and the state of current therapeutics in psychiatry, addiction, and behavioral disorders is presented, and chapters from leading physician-scientists and neuroethicists outline the clinical and the ethical issues arising in innovation and in the creation of new therapeutics for brain diseases. Written by renowned thought leaders in their fields, the book presents tightly written contributions on novel qualitative and quantitative data from stakeholders in the field, including neuroscientist-clinicians, people living with mental illness and/or addictions, and oversight/policy stakeholders. Concise, anticipatory, and centered on the principles governing human biomedical research and innovation in developing novel therapeutics for brain disorders, *Ethics and Clinical Neuroinnovation* will be of great value to clinicians, researchers, and students from a vast array of backgrounds, including neuroethics, neuroscience, psychology, psychiatry, philosophy, entrepreneurship, and the law.

Deep Brain Stimulation Damiaan Denys
2012-09-14 Deep Brain Stimulation: A New

Frontier in Psychiatry provides an overview of current developments and the future possibilities of deep brain stimulation for patients with therapy-refractory psychiatric disorders. The side-by-side presentation of clinical applications and animal research provides a truly translational approach. Also included is a special chapter on the ethical issues involved in deep brain stimulation in psychiatry. Deep brain stimulation of selected brain areas has been shown to result in a substantial improvement of symptoms and quality of life in patients suffering from obsessive-compulsive disorder, major depressive disorder and drug addiction. Although it is still an experimental therapy and the number of psychiatric patients that are treated is low, its effectiveness and safety makes deep brain stimulation the most promising therapy for treating other serious and life-threatening psychiatric conditions.

Fundamentals and Clinics of Deep Brain

Stimulation Yasin Temel 2020-03-24 This book provides a state-of-the-art overview of our current understanding of deep brain stimulation (DBS) for the treatment of neurological and psychiatric disorders. With a broad multidisciplinary scope, it presents contributions from leading experts in the field from Europe and America, who share not only their knowledge, but their experience as well. The book focuses both on basic and theoretical aspects of DBS, as well as clinical and practical aspects. It follows an evidence-based approach, and where possible offers clinical recommendations based on published guidelines. It starts with a general section, which discusses basic principles and general considerations. This is followed a sections dedicated to neurological disorders, and psychiatric disorders, in which only accepted indications are discussed. All experimental indications are discussed in the final chapter. The text is supplemented with numerous illustrations. Intended for medical specialists and residents involved in the treatment of patients with DBS, it also appeals to other professionals working with DBS patients, such as psychologists, nurses, physiotherapists, as well as basic and clinical neuroscientists.

Functional Neurosurgery Ahmed Raslan

2019-11-28 "Series Editor's Preface Dear Reader, I am delighted to introduce this volume of *Neurosurgery by Example: Key Cases and Fundamental Principles*. Neurosurgical training and practice are based on managing a wide range of complex clinical cases with expert knowledge, sound judgment, and skilled technical execution. Our goal in this series is to present exemplary cases in the manner they are actually encountered in the neurosurgical clinic, hospital emergency department, and operating room. In this volume, Drs. Ahmed Raslan and Ashwin Viswanathan invited a broad range of expert contributors to share their extensive wisdom and experience in all major areas of functional neurosurgery. Each chapter contains a classic presentation of an important clinical entity, guiding readers through the assessment and planning, decision making, surgical procedure, after care, and complication management. 'Pivot points' illuminate the changes required to manage patients in alternate or atypical situations. Each chapter also presents lists of pearls for the accurate diagnosis, successful treatment, and effective complication management of each clinical problem. These three focus areas will be especially helpful to neurosurgeons preparing to sit for the American Board of Neurological Surgery oral examination, which bases scoring on these three topics. Finally, each chapter contains focused reviews of medical evidence and expected outcomes, helpful for counseling patients and setting accurate expectations. Rather than exhaustive reference lists, chapter authors provide focused lists of high priority additional reading recommended to deepen understanding. The resulting volume should provide you with a dynamic tour through the practice of functional neurosurgery, guided by some of the leading experts in North America. Additional volumes cover each subspecialty area of neurosurgery, using the same case-based approach and board review features. Nathan R. Selden, MD, PhD Campagna Professor and Chair Department of Neurological Surgery Oregon Health & Science University"--
Psychosurgery Marc Lévêque 2014-02-18 Psychosurgery, or the surgical treatment of mental disorders, has enjoyed a spectacular

revival over the past ten years as new brain stimulation techniques have become available. Neuromodulation offers new possibilities for the treatment of psychiatric disorders such as depression, obsessive-compulsive disorder (OCD), addiction, eating disorders and autism. This work presents the history of this unique specialty and investigates current techniques and ethical challenges. With a wealth of illustrations and detailed anatomical diagrams, it provides essential information for medical practitioners, as well as anyone else interested in the fascinating advances being made in neuroscience today. « I like the book as it provides a very nice overview of psychosurgery in general. It is easy to understand for any (para)medical practitioner, but even specialists in the field may learn new things. They may also enjoy looking the well-known and less-known figures which illustrate the book. » Professor Bart Nuttin « Reading this book is like reading an anthology, or rather an encyclopaedia of the field of psychiatric surgery, spanning more than a century. This is a work with an unprecedented degree of erudition and knowledge, and the subject is presented in a didactic, scholar, and scientific manner, and is extensively referenced and illustrated. If only one book is to be read by anybody interested in this field, regardless of specialty, this is The Book to read. » Professor Marwan Hariz

Artificial Intelligence in Brain and Mental Health: Philosophical, Ethical & Policy Issues Fabrice Jotterand 2022-02-11 This volume provides an interdisciplinary collection of essays from leaders in various fields addressing the current and future challenges arising from the implementation of AI in brain and mental health. Artificial Intelligence (AI) has the potential to transform health care and improve biomedical research. While the potential of AI in brain and mental health is tremendous, its ethical, regulatory and social impacts have not been assessed in a comprehensive and systemic way. The volume is structured according to three main sections, each of them focusing on different types of AI technologies. Part 1, Big Data and Automated Learning: Scientific and Ethical Considerations, specifically addresses issues arising from the use of AI software, especially

machine learning, in the clinical context or for therapeutic applications. Part 2, AI for Digital Mental Health and Assistive Robotics: Philosophical and Regulatory Challenges, examines philosophical, ethical and regulatory issues arising from the use of an array of technologies beyond the clinical context. In the final section of the volume, Part 3 entitled AI in Neuroscience and Neurotechnology: Ethical, Social and Policy Issues, contributions examine some of the implications of AI in neuroscience and neurotechnology and the regulatory gaps or ambiguities that could potentially hamper the responsible development and implementation of AI solutions in brain and mental health. In light of its comprehensiveness and multi-disciplinary character, this book marks an important milestone in the public understanding of the ethics of AI in brain and mental health and provides a useful resource for any future investigation in this crucial and rapidly evolving area of AI application. The book is of interest to a wide audience in neuroethics, robotics, computer science, neuroscience, psychiatry and mental health. *Neuroethics in Practice* Anjan Chatterjee 2013 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.

Brain Stimulation Emily Bell 2013-11-11 The consideration of ethical and social issues related to current uses of deep brain stimulation (DBS) as well as investigational uses should now be an integral part of contemporary DBS practice. Scholarship, interdisciplinary work groups, and peer processes have helped articulate standards that need to be respected and implemented in current DBS practice. Integrating new knowledge and interdisciplinary ethical perspectives could be considered a sign of the maturity and rigor of a DBS program. Still, investigational uses of DBS carry tremendous hope but also touch on sensitive and thorny ethical questions. These questions can benefit from the ethical wisdom generated for standard uses of DBS but also challenge current practices and professional conduct. Realizing this, interdisciplinary expert groups have been

convened to identify and flesh out ethical guideposts for cutting-edge research in DBS. By implementing these ethical frameworks, DBS is an opportunity to develop promising treatments for a set of vulnerable and sometimes underserved patients while keeping their best interests in sight.

Parental Responsibility in the Context of Neuroscience and Genetics Kristien Hens 2017-01-09 Should parents aim to make their children as normal as possible to increase their chances to “fit in”? Are neurological and mental health conditions a part of children’s identity and if so, should parents aim to remove or treat these? Should they aim to instill self-control in their children? Should prospective parents take steps to insure that, of all the children they could have, they choose the ones with the best likely start in life? This volume explores all of these questions and more. Against the background of recent findings and expected advances in neuroscience and genetics, the extent and limits of parental responsibility are increasingly unclear. Awareness of the effects of parental choices on children’s wellbeing, as well as evolving norms about the moral status of children, have further increased expectations from (prospective) parents to take up and act on their changing responsibilities. The contributors discuss conceptual issues such as the meaning and sources of moral responsibility, normality, treatment, and identity. They also explore more practical issues such as how responsibility for children is practiced in Yoruba culture in Nigeria or how parents and health professionals in Belgium perceive the dilemmas generated by prenatal diagnosis.

In Vivo Atlas of Deep Brain Structures S. Lucerna 2002-01-29 This 'in vivo' atlas contains more than 50 magnetic resonance (MR) images of the brain. Each structure is represented in the axial, coronal and sagittal plane, magnified in colour schemes and reconstructed in 3D images with a useful millimetric scale. The atlas offers the reader a practical and simple tool for surgical planning and for diagnostic and anatomical studies. The high level of anatomical definition of the in vivo MR images means that there is no loss in precision as a result of post-mortem changes. No doubt, this

book is an excellent teaching instrument for all students of the neurosciences, regardless of the individual level of training and expertise.

Neuroethics Judy Illes 2017-07-14 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.

Identity, Personhood and the Law Charles Foster 2017-03-14 This book is an examination of how the law understands human identity and the whole notion of 'human being'. On these two notions the law, usually unconsciously, builds the superstructure of 'human rights'. It explores how the law understands the concept of a human being, and hence a person who is entitled to human rights. This involves a discussion of the legal treatment of those of so-called "marginal personhood" (e.g. high functioning non-human animals; humans of limited intellectual capacity, and fetuses). It also considers how we understand our identity as people, and hence how we fall into different legal categories: such as gender, religion

and so on. The law makes a number of huge assumptions about some fundamental issues of human identity and authenticity - for instance that we can talk meaningfully about the entity that we call 'our self'. Until now it has rarely, if ever, identified those assumptions, let alone interrogated them. This failure has led to the law being philosophically dubious and sometimes demonstrably unfit for purpose. Its failure is increasingly hard to cover up. What should happen legally, for instance, when a disease such as dementia eliminates or radically transforms all the characteristics that most people regard as foundational to the 'self'? This book seeks to plug these gaps in the literature.

The Pleasure Shock Lone Frank 2018-03-20 The electrifying, forgotten history of Robert Heath's brain pacemaker, investigating the origins and ethics of one of today's most promising medical breakthroughs: deep brain stimulation The technology invented by psychiatrist Robert G. Heath in the 1950s and '60s has been described as among the most controversial experiments in US history. His work was alleged at the time to be part of MKUltra, the CIA's notorious "mind control" project. His research subjects included incarcerated convicts and gay men who wished to be "cured" of their sexual preference. Yet his cutting-edge research and legacy were quickly buried deep in Tulane University's archives. Investigative science journalist Lone Frank now tells the complete story of this passionate, determined doctor and his groundbreaking neuroscience. More than fifty years after Heath's experiments, this very same treatment is becoming mainstream practice in modern psychiatry for everything from schizophrenia, anorexia, and compulsive behavior to depression, Parkinson's, and even substance addiction. Lone Frank uncovered lost documents and accounts of Heath's trailblazing work. She tracked down surviving colleagues and patients, and she delved into the current support for deep brain stimulation by scientists and patients alike. What has changed? Why do we today unquestioningly embrace this technology as a cure? How do we decide what is a disease of the brain to be cured and what should be allowed to remain unrobed

and unprodded? And how do we weigh the decades of criticism against the promise of treatment that could be offered to millions of patients? Elegantly written and deeply fascinating, *The Pleasure Shock* weaves together biography, scientific history, and medical ethics. It is an adventure into our ever-shifting views of the mind and the fateful power we wield when we tinker with the self.

The Clinical and Ethical Practice of Neuromodulation - Deep Brain Stimulation and Beyond Markus Christen 2018-01-15

Neuromodulation is among the fastest-growing areas of medicine, involving many diverse specialties and affecting hundreds of thousands of patients with numerous disorders worldwide. It can briefly be described as the science of how electrical, chemical, and mechanical interventions can modulate the nervous system function. A prominent example of neuromodulation is deep brain stimulation (DBS), an intervention that reflects a fundamental shift in the understanding of neurological and psychiatric diseases: namely as resulting from a dysfunctional activity pattern in a defined neuronal network that can be normalized by targeted stimulation. The application of DBS has grown remarkably and more than 130,000 patients worldwide have obtained a DBS intervention in the past 30 years—most of them for treating movement disorders. This *Frontiers Research Topics* provides an overview on the current discussion beyond basic research in DBS and other brain stimulation technologies. Researchers from various disciplines, who are working on broader clinical, ethical and social issues related to DBS and related neuromodulation technologies, have

contributed to this research topic.

The Routledge Handbook of Neuroethics L. Syd M Johnson 2017-07-20 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.

[Biomedical Diagnostics and Clinical Technologies: Applying High-Performance Cluster and Grid Computing](#) Pereira, Manuela 2010-09-30

Biomedical Diagnostics and Clinical Technologies: Applying High-Performance Cluster and Grid Computing disseminates knowledge regarding high performance computing for medical applications and bioinformatics. This critical reference source contains a valuable collection of cutting-edge research chapters for those working in the broad field of medical informatics and bioinformatics.