Personalist Neuroethics

Practical Neuroethics. Volume 2

James Beauregard

Rivier University

Philosophy of Personalism



Copyright © 2023 Vernon Press, an imprint of Vernon Art and Science Inc, on behalf of the author.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of Vernon Art and Science Inc.

www.vernonpress.com

In the Americas:In the rest of the world:Vernon PressVernon Press1000 N West Street, Suite 1200C/Sancti Espiritu 17,Wilmington, Delaware, 19801Malaga, 29006United StatesSpain

Philosophy of Personalism

Library of Congress Control Number: 2022946093

ISBN: 978-1-64889-532-6

Product and company names mentioned in this work are the trademarks of their respective owners. While every care has been taken in preparing this work, neither the authors nor Vernon Art and Science Inc. may be held responsible for any loss or damage caused or alleged to be caused directly or indirectly by the information contained in it.

Every effort has been made to trace all copyright holders, but if any have been inadvertently overlooked the publisher will be pleased to include any necessary credits in any subsequent reprint or edition.

 $Cover \ design \ by \ Vernon \ Press \ using \ elements \ designed \ by \ rawpixel.com \ / \ Freepik.$

For Beth Ann who, amazingly, teaches bioethics to teenagers every day.

The new volume by the author James Beauregard, "Personalist Neuroethics: Practical Neuroethics. Volume 2", is the essential complement to the first one "Philosophical Neuroethics: A Personalist Approach. Volume 1," on whose foundations of philosophical-anthropological construction the building of the practical application of Neuroethics can now be built, not only to knowledge but also to human praxis and behavior.

Thus, it responds to the true vocation of Bioethics, one of whose most urgent subspecialties is Neuroethics. The work systematically and clearly analyzes the neuroethical conflicts that arise at the beginning of life, in situations of vulnerability, at the end of life, and in the transhumanist and posthumanist processes that lead to human enhancement.

Without this bioethical analysis of the new possibilities that scientific progress opens up in the exploration, understanding and interaction with our neurological systems and our consciousness, scientific-technological progress can, in reality, represent a setback, due to its capacity to attack the dignity and integrity of the human being. However, Beauregard's precise notes help guide the potential of neuroscience towards personal construction, balance and the true progress that builds freedom.

Finally, the social derivative of the disciplines related to neuroethics deserve a detailed analysis in the second part of the book: "Social Neuroethics." The person, being in relationship, must deal in her existence in friction with others, and this scenario is the place where the conflict arises and, also, the need for ethical analysis. Situations related to the world of justice, the media, the academic context, war and social conflicts or religion, are the fertile ground for the neuroethical dilemma, to whose resolution Beauregard's essay successfully contributes.

Prof. Dr. Julio Tudela Cuenca

Director for Master's Degree in Bioethics Universidad Católica de Valencia San Vicente Mártir, Spain

The second volume of James Beauregard's "Personalist Neuroethics" is a timely and much-needed contribution to the current conversation on personhood, ethical decision-making, and neuroscience. Dr. Beauregard brings to this book a remarkable range of areas of expertise, which gives him the ability to bring together personalist philosophy, neuroscience, medical ethics, and an attention to media studies, military ethics, and the law. He offers us a vision of the person as unified, integrated wholes, a holistic vision with a clear place for scientific understanding of the brain and the principles of neuroethics, but without the reductionisms that often attend medical ethical thinking. His vision attends carefully to the deep dignity of persons, to personal responsibility, and to justice and the common good. The result is a deep and wide-ranging approach

to neuroethics that is at once philosophically rigorous and immediately practically applicable.

Prof. Dr. Mark K. Spencer

University of St. Thomas Assistant Editor, American Catholic Philosophical Quarterly Academic Advisor, The Hildebrand Project

Contemporary neuroscience urgently needs serious ethical reflection based on a sound philosophical method and a non-reductionist vision of human being. Beauregard's personalist neuroethics is singularly fitted to meet this demand as it is based on the rich personalist philosophical tradition and is inspired by von Hildebrand's phenomenological material value ethics.

Prof. Martin Cajthaml

Department of Philosophy and Patrology, Sts Cyril and Methodius Faculty of Theology Palacky University Olomouc, Czech Republic

"Personalist Neuroethics" is a fascinating exploration of the personalist philosophy with an emphasis on important practical implications. Thorough and comprehensive in its discussion, it is a major work in this field and essential reading for those who want to understand how the person relates to many facets of life and living.

Andrew Newberg,

MD best selling author of "How God Changes Your Brain."

Professor, Department of Integrative Medicine
and Nutritional Sciences
Professor, Department of Radiology
Research Director, Marcus Institute of Integrative Health
Thomas Jefferson University

Clear, coherent, and complete, "Personalist Neuroethics: Practical Neuroethics. Volume 2" offers a solid foundation for neuroscience in personalist philosophy. Particularly practical in its detailed presentation of issues where neuro- intersects with contemporary concerns, including the dialogue with faith.

Mary Clare Smith, SND, PhD

A much-needed book that bridges the gap between personalist philosophy and practical neuromedicine. Too often, conversations in bioethics begin from unexamined materialistic assumptions about the human person, leaving the dignity of the person something of a mystery. Beauregard's treatment, however, gives personal dignity firm philosophical grounding. He manages to do this, however, without drifting away from a concrete basis in contemporary science and medical practice.

Dr. D.T. ShefflerProfessor of Philosophy, Memoria College
Associated Scholar, The Hildebrand Project

Table of contents

	List of Figures and Tables	xi
	Acknowledgements	xiii
	Foreword	XV
	Introduction	xvii
Chapter 1	Personalism, In Brief	1
Chapter 2	Human Dignity and Neuroethics	43
	Part 1. Individual Neuroethics	69
	Introduction to Part 1	71
Chapter 3	Neuroethics and The Beginning of Persons	73
Chapter 4	Neuroethics and Injured Persons	109
Chapter 5	Neuroethics and The End of Persons	151
Chapter 6	Neuroethics and Enhanced Persons	171
	Part 2. Social Neuroethics	195
	Introduction to Part 2	197
Chapter 7	Neuroethics, Justice and Forensics	199
Chapter 8	Neuroethics and the Media, Neuroethics and the Academy	229
Chapter 9	Neuroscience, Neuroethics and War	239
Chapter 10	Neuroethics and Religion	251

Conclusion	261
Bibliography	269
Index	285

List of Figures and Tables

List of Figures

Figure 1.1	Integral Experience	12
Figure 1.2	Atom of web of knowledge diagram	13
Figure 1.3	Diagram of Person	15
Figure 2.1	Diagram of Person	49
Figure 3.1	Two Ways of Looking at Person	75
Figure 3.2	Diagram of Person	93
Figure 4.1	Diagram of Person	144
Figure 7.1	Diagram of Person	209
Figure 10.1	Diagram of Person	263
	List of Tables	
Table 1.1	12 Technomoral Virtues, and their Related Virtues	36
Table 3.1	Brain Development	81

Acknowledgements

I am indebted to, and give thanks to many individuals and institutions in the preparation of this book. First, I would like to thank my friend and colleague Juan Manuel Burgos, who has worked diligently and ceaselessly to bring personalist thought to an international audience. Many thanks also to Neil Messer, Professor of Theology at the University of Winchester, England for reading and commenting on an early draft of the manuscript. In the same vein, thanks to Anthony Giuliano for reading the initial drafts of many of the chapters in this book and providing his usual thoughtful and constructive feedback. I also owe much to Martha Farah and the University of Pennsylvania's Center for Neuroscience and Society, where I have spent some very fruitful times.

The personalist thought that I have learned over the years has, in an institutional setting, come to me through the International Conference on Personas, the Spanish Personalist Association, and the Hildebrand Project where John Crosby, John Henry Crosby, Chris Haley and Catherine Beigel have worked tirelessly in communicating personalist thought to a wide audience. Thanks to belong to the faculty and students at my own institution, Rivier University, who have over the years sharpened my thinking and kept me on my toes. A special word of thanks and admiration belong to Jwalant and Bhavna Vadalia at Generations Geriatric Mental Health, where I have learned much across many years about minds, brains, and most importantly, persons. Finally, I owe much to Beth Raymond, with whom I have had countless and helpful and thought-provoking conversations about neuroethics during the time this book was being written.

Foreword

Personalism and, in particular, Integral Personalism, is making notable advances in the 21st century thanks to works such as those of James Beauregard, who has undertaken extensive and in-depth research on neuroethics from this perspective. It is common for scientific advances to be extrapolated, leading to a reductionist scientism that, in the case of neurosciences, ends up transforming the person into a sophisticated neural machine. However, man is not a machine of any kind, but an irreducible who with a unique subjectivity and identity ontological consistency, which is maintained from birth to death and even after.

It belongs to the essence of personalism to strongly emphasize all these elements, and, therefore, prof. Beauregard uses it as the foundation and nucleus of all his research. This was already translated into a first volume in which the philosophical and ethical bases of neurosciences were addressed: Philosophical neuroethics. A personalist approach. Volume 1. Foundations (Vernon Press, 2019). And he continues and concludes in this second volume, in which his personal vision of neuroethics is applied to the numerous and decisive questions in which neurosciences are involved: disabled people, enhanced persons, forensics, the beginning and end of persons, National Security and Warfare issues, etc.

The personalist foundations come together with the great knowledge of the author and with his agile pen, giving rise to a splendid editorial novelty that illuminates problems, gives rise to orientations and proposes solutions to bioethical problems that decisively affect (or will affect) our existence.

We must also congratulate ourselves on the appearance of a new book with a humanist perspective in a field dominated by a scientism that, beyond its intentions, reduces human spiritual capacities to complex flows of electricity. However, what future can a society have that takes these premises seriously? James Beauregard knows the answer, and that is why he offers us a different neuroethics, which takes into account the latest scientific advances, but which respects the irreducible originality of men and women.

Juan Manuel Burgos Universidad CEU-San Pablo, Spain

Introduction

This book comprises the second volume of a two-volume work on neuroethics. The first volume, *Personalist Neuroethics: Fundamental Neuroethics*, addressed the theoretical underpinnings and presuppositions of neuroethics as a discipline. It concluded with a framework for considering the numerous practical matters that arise in the discipline of neuroethics. That book took a particular philosophical perspective, the philosophy of personalism, and attempted to develop a vision that was broad and robust enough to provide the theoretical foundation for dealing with the current and future issues arising in the discipline of neuroethics.

This book moves from that same personalist perspective. It is divided into two parts, Individual Neuroethics and Social Neuroethics. To be clear, there is a sense in which I consider all neuroethics to be social neuroethics, that is to say, neuroethics whether theoretical or practical always occurs in a social context. My division into these two distinct aspects is a reflection of the focus of neuroethics in relation to particular topics. Here is an example: individual healthcare. Imagine you are going to see a neurologist because you have suddenly begun having migraine headaches. The focus of that visit will be individual, namely on you, the patient. This would place your visit within the domain of Individual Neuroethics. At the same time, when you walk into the neurologist's office (which will be in a building constructed neither by you nor the neurologist, but by carpenters, electricians, plumbers, etc., and which may be part of a larger healthcare entity such as a hospital or medical center) you are first greeted the receptionist who signs you in. That person checks your health insurance (provided by a health insurance company with many employees, and which will also involve the banking system in some way) and, assuming it passes muster, directs you to the waiting room. Typically you will first be seen by a nurse or licensed practical nurse who will check vital signs and update your medical history. When that is done, you will be seen by the neurologist or, neurologic nurse practitioner. The visit might include blood work, in which case you will sit down briefly with the phlebotomist, and the neurologist may recommend neuroimaging based on her examination, in which case you will be interacting with neuroradiology and a neuroradiologist. Thus, my "individual" visit is demonstrably social in nature, involving quite an extended social network and physically constructed network:

xviii Introduction

the physical structure in which the visit occurs – a doctor's
office, an outpatient clinic or healthcare practice, hospital
etc., and the larger system which governs that setting,

- my individual health insurance policy and the insurance company that provides it, with all its employees,
- healthcare law, both state and national (such as HIPPA),
- the healthcare institution you are visiting will have its own ethical regulations, created by the institution itself or drawn from a larger entity,
- government regulation of healthcare disciplines such as a boards of registration for medicine, nursing etc. and the individuals who staff them.
- the wider political climate in which healthcare law and government regulation are debated and legislated,
- the various educational institutions from which your providers graduated (colleges universities, medical schools and their faculty and staff),
- the entire process, from conception through production which resulted in the technologies and devices that will be used during your visit, the phlebotomist's needles and vials, the scale you stand on when they weigh you, the stethoscope and blood pressure cuff for your vital signs, and neuroimaging technology, including the computer science vital to it, and the communication technologies that will be used to inform me of lab results from the telephone to email to the postal system, and the electronic medical record you might access to see your records, created and managed by various IT staffs,
- you also drive myself to the doctor's office, or use some other form of transportation – add the auto industry and its workers to the process.

In seeking healthcare, then, we are never alone. Individual neurologic care always happens in a social context. Reflecting this reality, the two parts of this book acknowledge the necessary dual focus of neuroethics.

Part One is focused on what I have termed Individual Neuroethics, where the *focus* is primarily on the individual. Chapter 1 provides a brief overview of theoretical neuroethics as it was expressed in the previous volume. Chapter 2

Introduction xix

focuses on neuroethical issues that arise at the beginning of life. Chapter 3 gives attention to neuroethical issues that arise in cases of neurological or psychiatric difficulties. Chapter 4 looks at neuroethical issues in end-of-life care. Chapter 5 considers the issue of enhancement, as it focuses on different aspects of an individual's functioning in topic areas such as cognitive enhancement and moral enhancement.

The second part of the book focuses on the wider institutional issues that emerge in neuroethics. Chapter 6 focuses on neuroethics in relation to governmental structures. Chapter 7 addresses neuroethical issues in forensics, including the justice system. Chapter 8 considers the neuroethics in relation to the media and the academy. Chapter 9 considers the area of neuroscience and war. Chapter 10 will focus on a topic that has been little-discussed by neuroethicists - the interaction of neuroethics with the world's numerous faith-based bioethical traditions.

Chapter 1

Personalism, In Brief

Introduction

In this chapter, I will give a brief overview of the nature of neuroethics and then consider the philosophical perspective from which this book moves: Integral Personalism.

To begin, neuroethics is, first and foremost to be characterized primarily as a *philosophical* discipline, not a *neuroscientific* one. What does this mean? The term *neuroethics* has two components: *neuro*- referring to its content: the disciplines of neuroscience and neurotechnology, and *-ethics*, referring to the process of reflection on that content. Neuroethics, then, is reasoning about the contents of neuroscience and neurotechnology from an ethical perspective. Within the discipline of neuroethics, the content is well-established, in fact the majority of the contemporary neuroethical literature has been written by practicing neuroscientists. The *ethics* of neuroethics, however, is a distinct aspect of the discipline that stands on its own. It is philosophical reflection, not only on science and technology as it touches on the human brain, but on the whole human person.

Neuroscience and ethics are distinct; they draw upon different intellectual traditions and upon different world views, and they ground themselves in different presuppositions.¹

1. Neuroscience and Philosophy

The *neuro*- perspective of neuroethics will already be familiar to anyone who either works in or has studied neuroscience. Historically, neuroscience developed out of the early Scientific Revolution and its empirical perspective and methods at the beginning of the modern era. Methodologically, it traces its origins to the first great and influential scientists of that era, figures such as Copernicus, Galileo and Newton. Physics and astronomy stand at the foundations of modern science. In time, the empirical sciences of chemistry and biology developed, and neuroscience, which studies the human brain,

¹ For a detailed analysis of these presuppositions, see James Beauregard, *Philosophical Neuroethics: A Personalist Approach, vol. 1: Foundations* (Wilmington, DE: Vernon Press, 2019), especially Chapter 2, "Neuroethics Today: Theory and Practice," 45-61.

2 Chapter 1

falls within the broader biological domain. Common to all of these disciplines, neuroscience included, is the empirical method.

The *philosophical* perspective of neuroethics is another matter altogether. Philosophy ranges across many topics, most broadly metaphysics and ontology (the study of the nature of the universe, and its contents, that is, everything that exists), epistemology (what we can know and how we can know it), anthropology (in the sense of philosophical anthropology, namely, what we can discern from reason's reflection on the human person) and ethics (the field that asks what type of persons we *ought* to be and how we *ought* to act). Anthropology and ethics are distinct disciplines, but intimately related – who we are tells about much about what we *can* do, and also what we *ought* to do. And, as we will see in the following pages, making a sharp distinction between *is* and *ought*, as David Hume attempted to do, does not stand up under even casual scrutiny. Who we are is intimately connected with what we do, and the two mutually influence one another, as experience tells us every day.

Here, however, we run headlong into a problem. In addition to the scientific advances of the early modern era, neuroscience has in many cases also adopted the philosophical positions that developed in response to science. Historically, this means the work of the British empiricist philosophers, David Hume in particular. On close examination, though, we can see that Hume, and the tradition that he helped create, are far too reductionistic and utterly inadequate for a robust neuroethics. There are several reasons for this.

First, Hume fully embraced the empiricist world view of early science and made it his philosophical paradigm, arguing that the physical, material universe is all that exists, and that, consequently there is nothing beyond or outside it.² The foundational discipline of physics, in that era, moved from this physicalist position and, and equally important, from a model of measurable cause and effect. If everything in the universe is material, then everything that happened must be caused by some previous physical event, and so on back to the beginning.³ A materialist world view is necessarily a

² On Hume's empirical vision of the universe, and of knowledge being derived from the senses, see David Hume, *A Treatise of Human Nature*, ed. David Fate Norton and Mary J. Norton (Oxford: Oxford University Press, 2001).

³ This is typified in Newton's laws of motion. Every cause has a previous cause, physical in nature. Determinism is the necessary consequence of this view. There is a deep irony here in that when neuroscience and neuroethics looks back to David Hume as a philosopher of materialism, they fail to take into account the fact that Hume denied the existence of causality as something nonmaterial and non-observable. He accepted the notion of *conjunction*, of one thing happening and another happening close in time or space to it, but argued that the very notion of *causality*, one thing causing another, is

PAGES MISSING FROM THIS FREE SAMPLE

- Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death. "A Definition of Irreversible Coma." *JAMA* 205, no. 6 (August 5, 1968): 85-88.
- Adorno, Roberto. "The dual role of human dignity in bioethics." *Medicine Health Care and Philosophy* 16 (2013): 967-973.
- Aguirre, Geoffrey K. "Functional Neuroimaging: Technical, Logical and Social Perspectives." In *Interpreting Neuroimaging: An Introduction to the Technology and Its Limits*. Special report. Hastings Center Report 45, no. 2 (2014): S8-S18. doi:10.1002/hast.294.
- Alkhalaileh Duna, Sarah R. Hayford, Alison H. Norris, Maria F. Gallo. "Prevalence and attitudes on female genital mutilation/cutting in Egypt since criminalisation in 2008." *Culture, Health & Sexuality* 20, no. 2 (2018):173-182. doi:10.1080/13691058.2017.1337927.
- Alzheimer's Association. "2020 Facts and Figures." https://www.alz.org/alzheimers-dementia/facts-figures.
- Alzheimer's Association. "The Global Cost of Dementia." https://www.alz.org/blog/alz/october_2010/the_global_cost_of_dementia.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. Washington DC: American Psychiatric Publishing, 2013.
- American Psychological Association. "The Hoffman Report." https://www.apa.org/independent-review/revised-report.pdf.
- American Psychological Association. "Ethical Principles of Psychologists and Code of Conduct." https://www.apa.org/ethics/code.
- Aramesh, Kiarash. "Shiite Perspective on the Moral Status of the Early Embryo: A Critical Review." *Journal of Religion and Health* 57 (2018): 2182-2192. https://doi.org/10.1007/s10943-017-0518-6.
- Anscombe, Gertrude E. W. "Modern Moral Philosophy." *Philosophy* 33, no. 124 (1958): 1-19.
- Arms Control Association. "Timeline of Syrian Chemical Weapons Activity, 2012-2021." https://www.armscontrol.org/factsheets/Timeline-of-Syrian-Chemical-Weapons-Activity.
- Arms Control Association. "The Chemical Weapons Convention (CWC) at a Glance." https://www.armscontrol.org/factsheets/cwcglance.
- Asimov, Isaac. "Runaround." *Astound. Sci. Fiction* 29 (1942), 94–103, quoted in Christopher Salge and Daniel Polani, "Empowerment As Replacement for the Three Laws of Robotics," *Frontiers in Robotics and AI* (29 June 2017) https://doi.org/10.3389/frobt.2017.00025.
- Azizan, Baharuddin, Mohd Noor Musa, and Sm Saifuddeen Sm Salleh. "A Preliminary Insight into an Islamic Mechanism for Neuroethics." *Malaysian Journal of Medical Sci*ences 23, no. 1 (Jan-Feb 2016): 1-3.
- Bach, Johann S. *The Complete Cantatas*. Translated by Richard Stokes. Lanham, MD: The Scarecrow Press, 2004.

Badura-Lotter, Gisela, and Heiner Frangau. "Human-Animal Chimeras: Not Only Cell Origin Matters." *American Journal of Bioethics* 14, no. 2 (2014): 21-22.

- Bailey, Eric. "California and the West; Defense Probing Brain to Explain Yosemite Killings; Crime: Cary Stayner is among a Number of Defendants Whose Lawyers are Looking for Physical Explanations for Brutal Murders." *The Los Angeles Times*, Part A; Part 1; Page 3 (June 15, 2000). Quoted in President's Council on Bioethics Staff Working Paper. "An Overview of the Impact of Neuroscience Evidence in Criminal Law."
- Beauchamp, Tom L., and James F. Childress. *Principles of Biomedical Ethics*, 7th ed. Oxford: Oxford University Press, 2013.
- Beaumont, Elizabeth. "Rights of Military Personnel. The First Amendment Encyclopedia." https://www.mtsu.edu/first-amendment/article/1131/rights-of-military-personnel.
- Beauregard, James. *Philosophical Neuroethics: A Personalist Approach, vol 1: Foundations.* Wilmington, DE: Vernon Press, 2019.
- ——. "Neuroscientific Free Will: Insights From the Thought of Juan Manuel Burgos and John Macmurray." *Journal of Cognition and Neuroethics* 3, no. 1 (2015): 13-37.
- ——. "Dementia and the Regulation of Gerontechnology." In *Intelligent Assistive Technologies for Demenita: Clinical, Ethical, Social and Regulatory Implications*, edited by Farbice Jotterand, Marcello Ienca, Tenzin Wangmo and Bernice Elger, 265-293. Oxford: Oxford University Press, 2019.
- Berg, Rigmor C., Sølvi Taraldsen, Maryan A. Said, Ingvil K. Sørbye, and Siri Vangen. "Reasons for and Experiences With Surgical Interventions for Female Genital Mutilation/Cutting (FGM/C): A Systematic Review." *The Journal of Sexual Medicine*, 14, no. 8 (2017): 977-990.
- Beriain, Iñigo de Miguel. "Human dignity and gene editing." *EMBO Reports*, 19 (2018): 1-4.
- Bermeo Antury, Elías. *Aportes del Personalismo Ontolóico Moderno a la Bioética Personalista*. Tesis Doctoral, Facultad de Filosofía, Universidad Autónoma de Madrid. No date.
- Berry, Alexander L., and Thomas Foltynie. "Gene Therapy: A Viable Therapeutic Strategy for Parkinson's Disease?" *Journal of Neurology* 258 (2011): 1279-188.
- Bestmann, Sven. "The physiological basis of transcranial magnetic stimulation." *Trends in Cognitive Sciences* 12 (2008): 81–83. https://doi.org/10.1016/j.tics. 2007.12.002.
- Björklund, Anders, and Ulf Stenevi, eds. *Neural Grafting in the Mammalian CNS*. Amsterdam: Elsivier, 1985.
- Blumenfeld, Hal. *Neuroanatomy through Clinical Cases*, 2nd ed. Sunderland, MA: Sinauer Associates, 2010.
- Boer, George J. "Ethical Guidelines for the use of Human Embryonic Fetal tissue for Experimental and Clinical Neurotransplantation and Research." *Journal of Neurology* 242, no. 1 (1994): 1-13.
- Bostrum, Nick. "What is Transhumanism?" https://www.nickbostrom.com/ethics/values.html.

Bostrum, Nick. "Transhumanist Values." https://www.nickbostrom.com/ethics/values.html.

- "Brain Initiative Fact Sheet." April 2, 2013. https://obamawhitehouse.archives.gov/the-press-office/2013/04/02/fact-sheet-brain-initiative.
- Brüssow, Herald. "What is health?" *Microbial Biotechnol*ogy 6, no. 4 (2013): 341-348. doi:10.1111/1751-7915.12063.
- Buckner, Randy L., Jessica R. Andrews-Hanna, and Daniel L. Schacter. "The Brain's Default Network: Anatomy, Function, and Relevance to disease." *Annals of the New York Academy of Sciences* 1124 (2008): 1-38.
- Buford, Thomas O. "Personalism," *Internet Encyclopedia of Philosophy.* https://www.iep.utm.edu/personal/.
- Burgos, Juan Manuel. *Repensar la naturaleza humana*. Madrid: Ediciones Palabras. 2009.
- ——. Antropología: una guía para la existencia, 5a ed. Madrid: Ediciones Palabra, 2013a.
- ——. "A New Personalist Proposal: Modern Ontological Personalism." Paper presented at the 12th International Conference on Persons, Lund, Sweden, August 7, 2013b.
- ——. *La experiencia integral*. Madrid: Ediciones Palabra, 2015.
- ——. "Integral Experience: A New Proposal on the Beginning of Knowledge." Translated by James Beauregard. In *In the Sphere of the Personal: New Perspectives in the Philosophy of Persons*, ed. James Beauregard and Simon Smith. Wilmington DE: Vernon Press, 2016.
- ——. An Introduction to Personalism. Translated by Richard T. Allen. Washington DC: CUA Press, 2018.
- Burnette, Brandon R. "Comstock Act of 1873." *The First Amendment Encyclopedia*. https://www.mtsu.edu/first-amendment/article/1038/comstock-act-of-1873.
- Buyx, Alena. "Smart Drugs: Ethical Issues." In *Handbook of Neuroethics*, ed. Jens Claussen and Neil Levy, 1191-1206. Dordrecht: Springer, 2015.
- Bzdok, Danilo, Dominik Gros, and Simon B. Eickhoff. "The Neurobiology of Moral cognition: Relation to Theory of Mind, Empathy, and Mind-Wandering." In *Handbook of Neuroethics*, ed. Jens Clausen, and Neil Levy, 130-133. Dordrecht: Springer, 2015.
- Cajthaml, Martin, and Vlastimil Vohánka. *The Moral Philosophy of Dietrich von Hildebrand*. Washington, DC: Catholic University of America Press, 2019.
- Calhoun, David C. "Human Exceptionalism and the Imago Dei: The Tradition of Human Dignity." In *Human Dignity in Bioethics: From Worldviews to the Public Square*, ed. Stephen Dilley and Nathan J. Palpant. New York; Routledge, 2013.
- Capps, Benjamin, Rudd Ter Meulen, and Lisbeth Witthøfft Nielson. "Human Enhancement Technologies: Understanding Governance, Policies and Regulatory Structures in the Global Context." *Asian Bioethics Review* 4, no. 4 (2012): 251-258.
- Capps, Benjamin, Adrian Carter and Yvette van der Eijk. "Ethical Issues in the Treatment of Addiction," In *Handbook of Neuroethics*, ed. Jens Clausen, and Neil Levy (Dordrecht: Springer, 2015), 1048-1049.

Carhart-Harris, Robin L., and Guy M. Goodwin. "The Therapeutic Potential of Psychedelic Drugs: Past, Present and Future." *Neuropsychopharmacology* 42 (2017): 2105-2113.

- Carter, Adrian, and Wayne D. Hall. "What is addiction Neuroethics?" In *Handbook of Neuroethics*, ed. Jens Clausen and Neil Levy, 995-998. Dordrecht: Springer, 2015.
- Carmi, Lior, Aron Tendler, Alexander Bystritsky, Eric Hollander, Daniel M. Blumberger, Jeff Daskalakis, Herbert Ward, Kyle Lapidus, Wayne Goodman, Leah Casuto, et al. "Efficacy and Safety of Deep Transcranial Magnetic Stimulation for Obsessive-Compulsive Disorder: A Prospective Multicenter Randomized Double-Blind Placebo-Controlled Trial," *American Journal of Psychiatry* 176 (2019): 931–938. doi: 10.1176/appi.ajp.2019.18101180.
- Carey, Benedict. "Johns Hopkins Opens New Center for Psychedelic Research." *New York Times*, September 4, 2019. https://www.nytimes.com/2019/09/04/science/psychedelic-drugs-hopkins-depression.html.
- Center for Cognitive Liberty and Ethics. Homepage. https://www.cognitive liberty.org.
- Chaïma, Ahaddour, Stef Van den Branden, and Bert Broeckaert. "Between quality of life and hope. Attitudes and beliefs of Muslim women toward witholding and withdrawing life-sustqining treatments." *Medical Health Care and Philosophy* 21 (2018): 347-361.
- Chancellor, Bree, and Anjan Chatterjee. "Brain Branding: When Neuroscience and Commerce Collide." *AJOB Neuroscience* 2, no. 4 (2011): 18-27.
- Chandler, Jennifer A., Neil Harrell, and Tijana Potkonjak. "Neurolaw Today A Systematic Review of the Recent Law and Neuroscience Literature." *International Journal of Law and Psychiatry* 65 (2019): 1-13.
- Chatterjee, Anjan. "Brain Enhancement in Healthy Adults." In *Neuroethics in Practice: Medicine, Mind and Society*, ed. Anjan Chaterjee and Martha J. Farah. Oxford: Oxford University Press, 2013.
- Chaudhary, Ujwal, Niels Birbaumer, and Marco Rocha Curado. "Brain-Machine Interface (BMI) in paralysis." *Annals of Physical and Rehabilitation Medicine* 58 (2015): 9–13.
- Clausen, Jens. "Establishing regenerative medicine for the human brain: Ethical aspects of intracerebral stem cell transplantation." In *Implanted Minds: the neuroethics of intracerebral stem cell transplantation and deep brain stimulation*, ed. Heiner Fangerau, Jörg M. Fegert and Thorsten Trapp. Bielefeld: Transcript, 2011.
- ——. "Ethical Implications of Brain-Computer Interfacing." In *Handbook of Neuroethics*, ed. Jens Clausen, and Neil Levy, 699-704. Dordrecht: Springer, 2015.
- Colomer, Modesto Ferrer, and Luis Miguel Pastor. "The Preembryo's Short Lifetime. The History of a Word." *Cuadernos de Bioética* XXIII, 3 (2012): 677-694.
- Craig, Gordon A. *Germany 1866-1914*. New York: Oxford University Press, 1980.
- DARPA. "About Us." https://www.darpa.mil/about-us/about-darpa.

——. "DARPA Announces Researchers to Tackle Common Travelers' Issues that Impact Force Readiness. ADAPTER teams aim to develop a hybrid device, controlled by the warfighter, that boosts and extends performance during field forward missions." https://www.darpa.mil/news-events/2021-05-10.

- ——. "From Idea to Market in Eight Years, DARPA-Funded DEKA Arm System Earns FDA Approval." *DARPA's Revolutionizing Prosthetics program delivers on goal of providing advanced prosthetic upper limb with near-natural control mechanisms to amputees 5/9/14.* https://www.darpa.mil/news-events/2014-05-09.
- ——. "Restoring Active Memory." https://www.darpa.mil/program/restoring-active-memory.
- Deinsberger, Julia, David Reisinger, and Benedikt Weber. "Global trends in clinical trials involving pluripotent stem cells: a systematic multi-database analysis." *NPJ Regenerative Medicine* 5, 15 (2020). https://doi.org/10.1038/s4 1536-020-00100-4.
- Department of Health and Social Security, Great Britain. *Report of the Committee of inquiry into Human Fertilization and Embryology*, Dame Mary Warnock, Chair. London: Her Majesty's Stationary Office, 1984.
- de Jong, Irja Marije, Frank Kupper, Marlous Arentshorst and Jacqueline Broerse. "Responsible Reporting: Neuroimaging News in the Age of Responsible Research and Innovation." *Science and Engineering Ethics* 22 (2016): 1107–1130. doi:101007/s11948-015-9684-7.
- Dilley, Stephen, and Nathan J. Palpant, eds. *Human Dignity in Bioethics: From Worldviews to the Public Square*. New York: Routledge, 2013.
- Douglas, Thomas. "The Morality of Neuroenhancement." In *Handbook of Neuroethics*, ed. Jens Clausen and Neil Levy (Dordrecht: Springer, 2015): 1227-1249.
- Downs, Karen M. "The enigmatic primitive streak: prevailing notions and challenges concerning the body axis of mammals" *BioEssays: news and reviews in molecular, cellular and developmental biology* 31, no. 8 (2009): 892–902. https://doi.org/10.1002/bies.200900038.
- Driver, Julia. "The History of Utilitarianism." In "The History of Utilitarianism," *The Stanford Encyclopedia of Philosophy* (Winter 2014), ed. Edward N. Zalta. https://plato.stanford.edu/archives/win2014/entries/utilitarianism-history/.
- Earp, Brian D., Thomas Douglas, and Julian Savulescu. "Moral Neuroenhancement." In *The Routledge Handbook of Neuroethics*, ed. L. Syd M. Johnson and Karen S. Rommelfanger, 166-184. New York: Routledge, 2018.
- Eliot, Thomas S. *The Dry Salvages*. In *The Compete Poems and Plays, 1909-1950*, Thomas S. Eliot. New York: Harcourt Brace Jovanovich, 1971.
- Erler, Alexandre. "Discussions of DBS in Neuroethics: 'Can We Deflate the Bubble Without Deflating Ethics?'" *Neuroethics* (12 May 2019). https://doi.org/10.1007/s12152-019-09412-9.
- European Union. "The Principle of Subsidiarity." Last modified May 2020. https://www.europarl.europa.eu/factsheets/en/sheet/7/the-principle-of-subsidiarity

EUR-Lex. "Subsidiarity." https://eur-lex.europa.eu/summary/glossary/subsidiarity.html.

- Evers, Kathinka, and James J. Giordano. "The Utility- and Use–of Neurotechnology to Recover Consciousness: Technical and Neuroethical Considerations in Approaching the 'Hard Question' of Neuroscience." *Frontiers in Human Neuroscience* 11, (November 2017, Article 564): 1-3.
- Eun-Ah Chang, Sung-Won Jin, Myung-Hyun Nam, and Sang-De Kim. "Human Induced Pluripotent Stem Cells: Clinical Significance and Applications in Neurologic Diseases." *Journal of Korean Neurosurgical Society* 62, no. 5 (2019): 493-501. https://doi.org/10.3340/jkns.2018.0222.
- Farah, Martha. *Neuroethics: An Introduction with Readings*. Cambridge, MA: MIT Press, 2010.
- Farah, Martha J., M. Elizabeth Smith, Cyrena Gawuga, Dennis Lindsell, and Dean Foster. "Brain Imaging and Brain Privacy: A Realistic Concern?" *Journal of Cognitive Neuroscience* 21, no. 1 (2008): 119-127.
- Fisher, Carl Erik, Lisa Chin, and Robert Klitzman. "Defining Neuromarketing: Practices and Professional challenges." *Harvard Review of Psychiatry* 18, no. 4 (2010): 230-237.
- Foot, Philippa. Virtues and Vices. Oxford: Blackwell, 1978.
- Ford, John C. "The Morality of Obliteration Bombing." *Theological Studies* 5, no. 3 (1944): 261-309.
- Forlini, Cynthia, Brad Partridge, Jayne Lucke and Eric Racine. "Popular Media and Bioethics Schlarship: Sharing Responsibility for Portrayals of Cognitive enhancement with Prescriptin Medications." In *Handbook of Neuroethics*, ed. Jens Clausen and Neil Levy (Dordrecht: Springer, 2015): 1473-1486.
- Fukuyama, Francis. "Transhumanism." *Foreign Policy* 23, no. 144 (October 2004): 42-43. http://foreignpolicy.com/2009/10/23/transhumanism.
- Gaillard, Maxence. "Looking for Neuroethics in Japan." *Neuroethics* 11 (2018): 67-82. https://doi.org/10/1007/s12152-017-9348-1.
- Gao, Guodong, Xuelian Wang, Shiming He, Weixin Li, Qingfeng Wang, Qinchuan Liang, Yaqun Zhao, Fang Hou, Ling Chen, and Aining Li. "Clinical Study for Alleviating Opiate Drug Psychological Dependence by a Method of Ablating the Nucleus Accumbens with stereotactic Surgery. *Stereotactic and Functional Surgery* 81, no. 1-4 (2003): 96-104.
- Guardian. "Syrian regime blames for sarin gas attacks in landmark report." April 8, 2020. https://www.theguardian.com/world/2020/apr/08/syrian-reg ime-blamed-for-using-sarin-gas-in-landmark-opcw-report.
- Gazzaniga, Michael. *The Ethical Brain: the Science of Our Moral Dilemmas*. New York: Harper Collins, 2006.
- ———. "The Law and Neuroscience." *Neuron* 60 (November 6, 2008): 412-415.
- Gilbert, Frederic, John Noel M. Viaña, and Christian Ineichen. "Deflating the 'DBS Causes Personality Changes' Bubble." *Neuroethics* (19 June 2018). https://doi.org/10/1007/s12152-018-9373-8.
- Gilbert, Scott F. *Developmental Biology*. 6th ed. Sunderland, MA: Sinauer, 2000.
- Glannon, Walter. *Brain, Body and Mind: Neuroethics With a Human Face.* Oxford: Oxford University Press, 2011.

——. "Reflections on Neuroenhancement." In *Handbook of Neuroethics*, ed. Jens Clausen, and Neil Levy, 1251-1265. Dordrecht: Springer, 2015.

- Greely, Henry T. "Neuroscience-based Lie Detection: The Need for Regulation." In *Using Neuroimaging to Identify Deceit: Scientific and Ethical Questions*, ed. Emilio Bizzi, Steven E. Hyman, Marcus E. Raichle, Nancy Kanwisher, Elizabeth Anya Phelps, Stephen J. Morse, Walter Sinnott-Armstrong, Jed S. Rakoff, and Henry T. Greely. Cambridge, MA: American Academy Of Arts and Sciences January 2009. https://www.amacad.org/publication/using-imaging-identify-deceit-scientific-and-ethical-questions/section/8.
- Grinspoon, Lester, and James B. Bakalar. *Psychedelic Drugs Reconsidered*. New York: Basic Books, 1979.
- Grobstein, Clifford. "Human Development from Fertilization to Birth." In *Encyclopedia of Bioethics*, vol 2. Fetus I, ed. R. W. Thomas, 847-851. New York: McMillan, 1995.
- Guignon, Charles B. *On Being Authentic*. New York: Routledge, 2004. Cited in "Thinking Ahead on Deep Brain Stimulation: An Analysis of the Ethical Implications of a Developing Technology," Veronica Johnson, Martin Garwicz, Martin Kanje, Lena Halldenius and Jens Schouberg. *AJOB Neuroscience*, 5, no. 1 (2014): 24-33.
- Habermas, Jurgen. *The Future of Human Nature*. Cambridge: Polity Press, 2003. Hague, William. *William Wilberforce: The Life of the Great Anti-Slave Campaigner*. New York: Harcourt, 2007.
- Hallett, Mark. "Transcranial Magnetic Stimulation: A Primer." *Neuron* 55 (July 19, 2007): 187-199.
- Harrell, Eben. "Neuromarketing: What You Need to Know." *Harvard Business Review* (January 29, 2019). https://hbr.org/2019/01/neuromarketing-what-you-need-to-know.
- Helion, Chelsea, and David A. Pizarro. "Beyond Dual-Processes: the Interplay of Reason and Emotion in Moral Judgement." In *Handbook of Neuroethics*, ed. Jens Clausen and Neil Levy, 109-125. Dordrecht: Springer, 2015.
- Hershenov, David. "Self-ownership, relational dignity, and organ sales." *Bioethics* 32 (2018): 430-436.
- Hill, Mark. "Carnegie Stages." *Embryology: Carnegie Stages*. October 27, 2020.
 - $https://embryology.med.unsw.edu.au/embryology/index.php/Carnegie_Stages.$
- Hitchens, Christopher. Mortality. New York: Twelve/Hachette Book Group, 2012.
- Hopkins, Emily J., Deena Skolnick Weisberg, and Jordan C. V. Taylor. "The seductive allure is a reductive allure: People prefer scientific explanations that contain logically irrelevant reductive information." *Cognition* 155 (2016): 67-76.
- Hopkins, Patrick D., and Harvey L. Fiser. "'This Position Requires Some Alteration of Your Brain': On the Moral and Legal Issues of Using Neurotechnology to Modify Employees." *Journal of Business Ethics* 144 (2017): 783-797.

Hospice Foundation of America. Homepage. https://hospicefoundation.org.

- ——. "Palliative Care Defined." https://hospicefoundation.org/Hospice-Care/Palliative-Care-Defined.
- ——. "Hospice Services." https://hospicefoundation.org/Hospice-Care/Hospice-Services.
- Hug, Kristina, and Göran Hermerén. "Do We Still Need Human Embryonic Stem Cells for Stem Cell-Based Therapies? Epistemic and Ethical Aspects." *Stem Cell Reviews and Reports* 7 (2011): 761-74.
- Hume, David. *A Treatise of Human Nature*. Ed. David Fate Norton and Mary J. Norton. Oxford: Oxford University Press, 2001.
- ——. An Enquiry Concerning Human Understanding, 2nd ed. Indianapolis: Hackett, 1993.
- Ideguchi, Makoto, Theo D. Palmer, Lawrence D. Recht, and James M. Weimann. "Murine Embryonic Stem Cell-Derived Pyrimadal Neurons Integrate into the Cerebral Cortex and Appropriately Project Axons to Subcortical Targets." *The Journal of Neuroscience* 30, no. 3 (January 20, 2010): 894-904.
- Ison, Eric T. "Personal Identity." In *The Stanford Encyclopedia of Philosophy* (Fall 2019), ed. Edward N. Zalta. https://plato.stanford.edu/archives/fall2019/entries/identity-personal.
- Johansen, R. Elise. B., Mai Mahgoub Ziyada, Bettina Shell-Duncan, Adriana Marcusàn Kaplan, and Els Leye. "Health sector involvement in the management of female genital mutilation/cutting in 30 countries." *BMC Health Services Research*, 1 (2018). https://doi.org/10.1186/s12913-018-3033-x.
- Johnson, Matthew W., and Rooand R. Griffiths- "Potential Therapeutic Effects of Psilocybin." *Neurotherapeutics* 14 (2017): 734-740.
- Johnson, Mattew W., Peter S. Hendricks, Frederick S. Barrett and Roland R. Griffiths. "Classic Psychedelics: An Integrative Review of Epidemiology, therapeutics, mystical experience, and Brain Network Function." *Pharmacology and Therapeutics* 197 (2019): 83-102.
- Jotterand, Fabrice, and Veljko Dubljević. "Introduction." In *Cognitive Enhancement: Ethical and Policy Implications in International Perspectives*. Oxford: Oxford University Press, 2016.
- Jones, Howard, and C. Shrader. "And just What is a Preembryo?" *Fertility and Sterility* 52 (August 1989): 189-191.
- Jotterand, Fabrice. "Psychopathy, Neurotechnologies, and Neuroethics." *Theoretical Medicine and Bioethics* 35 (2014): 1–6
- Kabasencha, William Paul. "Moral Formation and Moral Enhancement." *AJOB Neuroscience* 7, no. 2 (April-June 2016): 130-131. doi: 10.1080/21507740.201 6.1189980.
- Kandel, Eric, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum, and A. J. Hudspeth. *Principles of Neural Science*, 5th ed. New York: McGraw Hill, 2013.
- Kant, Immanuel. *Critique of Pure Reason*. Trans. by Werner S. Pluhar. Indianapolis: Hackett, 1996.
- ——. Groundwork of the Metaphysics of Morals. Trans. by Mary Gregor and Jens Timmerman. Cambridge: Cambridge University Press, 2012.

Katz, Eric Andrew Light, and William Thompson, eds. *Controlling Technology*, 2nd ed. Amherst, NY: Prometheus Books, 2003.

- Kauppinen, Antti. "Moral Intuition in Philosophy and Psychology." In *Handbook of Neuroethics*, eds. Jens Clausen, and Neil Levy, 169-183. Dordrecht: Springer, 2015.
- Kelly, Evelyn B. Stem Cells. Westport, CT: Greenwood Press, 2007.
- Kerstein, Samuel. "Hastening death and respect for dignity: Kantianism at the end of life." *Bioethics* 33 (2019): 591-600.
- Klaming, Laura, and Pim Haselager. "Did My Brain Implant Make Me Do It? Questions Raised by DBS Regarding Psychological Continuity, Responsibility for Action and Mental Competence." *Neuroethics* 6 (2013): 527-540.
- Knoepfler, Paul. *Stem Cells: An Insider's Guide*. Hackensack, NJ: World Science, 2014.
- Kolers, Avery. "What Does Solidarity Do for Bioethics?" *Journal of Medical Ethics* 3 (July 2020). doi:10.1136/medethics-2019-106040.
- Konsta, Anna-Maria. "Is there a Right to Human dignity? The Example of the Right to Education of Refugees." *European Journal of Migration and Law* 21 (2019): 261-279.
- Kotzê, Marianne. "Human Genetic Engineering and Social Justice in South Africa: Moltmann and Human Dignity." *Acta Theologica* 36, no. 1 (2016): 70-84.
- Kramer, Peter D. Listening to Prozac. New York: Penguin Books, 1993.
- Kuhn, Thomas Kuhn. *The Structure of Scientific Revolution*, 4th ed. Chicago: The University of Chicago Press, 2012.
- Lau, Chi-ieong, Mu-N Liu, Kae-Chwen Chang, Anna Chang, Chyi-Huey Bai, Ching-Shiang Tseng, Vincent Walsh, and Han-Cheng Wang. "Effect of single-session transcranial direct current stimulation on cognition in Parkinson's disease." CNS Neuroscience and Therapeutics 25 (2019): 1237–1243.
- Laureys, Steven, Gastone G. Celesia, Francois Cohadon, Jan Lavrijsen, José León-Carrión, Walter G. Sannita, Leon Sazbon, Erich Schmutzhard, Klaus R. von Wild, Adam Zeman and Giiuliano Dolce, "Unresponsive wakefulness syndrome: a new name for the vegetative state or apallic syndrome, BMC Med. 8 2010 (Nov 1), 68. doi: 10.1186/1741-7015-8-68. PMID: 21040571; PMCID: PMC2987895.
- Lazar, Seth. "War." *The Stanford Encyclopedia of Philosophy* (Spring 2020 Edition), ed. Edward N. Zalta. https://plato.stanford.edu/archives/spr2020/entries/war/.
- Levin, Daniel. "A Racial Slur, A Viral Video, and a Reckoning." *The New York Times*. December 26, 2020, https://www.nytimes.com/2020/12/26/us/mimi-groves-jimmy-galligan-racial-slurs.html?searchResultPosition=1.
- Lewis, Ariane, James L. Bernat, Sandralee Blosser, Richard J. Bonnie, Leon G. Epstein, John Hutchins, Matthew P. Kirschen, Michael Rubin, James A. Russell, Justin A. Sattin, Eelco F. M. Wijdicks, David M. Greer. "An interdisciplinary response to contemporary concerns about brain death determination." *Neurology* 90, no. 9 (2018): 423-426. doi:10.1212/WNL.0000000000005033.

Libet, Benjamin, Elwood W. Wright Jr., Bertram Feinstein, and Dennis K. Pearl. "Subjective Referral of the timing for a conscious Sensory Experience: A Functional Role for the Somatosensory Specific Projection System in Man." *Brain* 102 (1979): 193-224.

- Libet, Benjamin. "Do We Have Free Will?" *Journal of Consciousness Studies* 6, nos. 8-9, (1999): 47-57.
- ——. "The Timing of Mental Events: Libet's Experimental Findings and Their Implications." *Consciousness and Cognition* 11 (2002): 291-299.
- Lipsman, Nir, and Walter Glannon. "Brain, Mind and Machine: What are the Implications of Deep Brain Stimulation for Perceptions of Personal Identity, Agency and Free Will?" *Bioethics* 27, no. 9 (2013): 465-470.
- Lopez, Javier, Ruben Rios, Feng Bao, and Guilin Wang. "Evolving Privacy: From Sensors to the Internet of Things." *Future Generation Computer Systems* 75 (2017): 46-57.
- Luate, Jacques, Dominique Morlet, and Jérémie Mattout. "BCI in patients with disorders of consciousness: Clinical perspectives." *Annals of Physical and Rehabilitation Medicine* 58 (2015): 29–34.
- Macklin, Ruth. "Dignity is a useless concept: it means nothing more than respect for persons and their autonomy." *BMJ* 327 (December, 2003): 1419-1420.
- Macmurray, John. *The Self as Agent*. Atlantic Highlands, NJ: Humanities Press, 1991.
- ———. *Interpreting the Universe*. Amherst, NY: Humanity Books, 1996.
- -----. Persons in Relation. Atlantic Highlands, NJ: 1991b.
- -----. Reason and Emotion. Amherst, NY: Humanity Books, 1992.
- Mahar, Christopher M. "Neurology, Neuroethics and the Vegetative State: Science Confirms Catholic Concerns." *National Catholic Bioethics Quarterly* 12, no. 3 (Autumn 2012), 477-488.
- Maritain, Jacques. *The Person and the Common Good.* Trans. by John J. Fitzgerald. Notre Dame: University of Notre Dame Press, 1966.
- ——. *Man and the State*. Washington: Catholic University of America Press, 1998.
- Martin, Ulrich. "Therapeutic Application of Pluripotent Stem Cells: Challenges and Risks," *Front Med (Lausanne)* 4, (Dec 14 2017, Article 229): 1-8. doi:10. 3389/fmed.2017.00229.
- Mayo Clinic. "Transcranial Magnetic Stimulation." https://www.mayoclinic.org/tests-procedures/transcranial-magnetic-stimulation/about/pac-20384625? p=1.
- McLaren, Anne. Letter to *Nature*. "Embryo Research." *Nature* 321 (1986): 570
- McManus, Matthew. "A critical legal conception of human dignity." *Journal of Human Rights* 18, no. 1 (2019): 57-75.
- McNeilly, Kathryn. "Are Rights Out of Time? International Human Rights Law, Temporality, and Radical Social Change." Soc*ial and Legal Studies* 28, no. 6 (2019): 817-838.
- Merz.com, "Neurotoxins." https://www.merz.com/neurotoxins/.
- Messer, Neil. Respecting Life: Theology and Bioethics. London: SCM, 2011.

——. Theological Neuroethics: Christian Ethics Meets the Science of the Human Brain. London: Bloomsbury, 2017.

- MGH Stroke Protocol. https://stopstroke.massgeneral.org/protocolBrainDeath.aspx.
- Mitchell, James E., and Bill Harlow. *Enhanced Interrogation: Inside the Minds and Motives of the Islamic Terrorists Trying to Destroy America*. New York: Crown Forum, 2016.
- Mollaret, Pierre, and Maurice Goulon. "Le coma dépassé." *Revue Neurologique* 101, no. 3, (1959). Cited in Ropper, *Principles of Neurology*.
- Mollinedo Figueroa, Karla Patricia. *El diagrama de la persona según Burgos y su aplicación psicoterapeutica*. Guatemala City, Guatemala: Instituto de Ciencias de al Familia, Universidad Galileo, 2007.
- Moreno, Jonathan D. *Mind Wars: Brain Science and the Military in the 21st Century* New York: Bellevue Literary Press, 2012.
- Morse, Stephen J. "Brain Overclaim Syndrome and Criminal Responsibility: A Diagnostic Note." In *Neuroethics: An Introduction with Reading*, ed. Martha J. Farah, 268-280. Cambridge, MA: MIT Press, 2010.
- ——. "New Therapies, Old Problems, or, A Plea for Neuromodesty." *AJOB Neuroscience* 3, no. 1 (2012): 60-64.
- ——. "Brain Overclaim Syndrome and Criminal Responsibility: A Diagnostic Note." Retrieved from http://repository.upenn.edu/neuroethics_pubs/28.
- ——. "Criminal Law and Common Sense: An Essay on the Perils and Promise of Neuroscience." *Public Law and Legal Theory Research Paper Series* Research Paper nos. 15-38. http://ssrn.com.abstract=2705038.
- Nabaneh, Satang, and Adamson S. Muula. "Female genital mutilation/cutting in Africa: A complex legal and ethical landscape." *International Journal of Gynecology & Obstetrics* 145, no. 2 (May 2019): 253-257.
- National Conference of Catholic Bishops. Ethical and Religious directives, 2018 edition. https://www.usccb.org/about/doctrine/ethical-and-religious-directives/upload/ethical-religious-directives-catholic-health-service-sixth-edition-2016-06.pdf.
- National Institute of Drug Abuse. "How Does Cocaine Produce its Effects?" https://www.drugabuse.gov/publications/research-reports/cocaine/how-does-cocaine-produce-its-effects.
- Negoro, Takaharu, Hanayuki Okura, and Akifumi Matsuyama. "Induced Pluripotent Stem Cells: Global Research Trends." *BioResearch Open Access* 6, no. 1 (2017): 63-73.
- NeoRhythm website. https://omnipemf.com/?gclid=EAIaIQobChMI4-_f75ab7 QIVFopaBR1zOQySEAAYAiAAEgKug_D_BwE.
- NESD Program. https://www.darpa.mil/news-events/2017-07-10.
- New Hampshire Durable Power of Attorney for Healthcare. https://eforms.com/images/2016/02/Healthy-NH-Advance-Directive.pdf.
- NIH Revitalization Act (1993)., P.L. No. 103-43, U.S.C. sec 289a et seq.
- Nitsche, Michael A., Leonardo G. Cohen, Eric M. Wassermann, Alberto Priori, NicolasLang, AndreaAntal, WalterPaulus, Friedhelm Hummel, Paulo S. Boggio, Felipe Fregni, and Alvaro Pascual-Leone. "Transcranial direct current

stimulation: State of the art 2008." *Brain Stimulation* 1, no. 3, (2008): 206-223. https://doi.org/10.1016/j.brs.2008.06.004

- Nitsche, Michael A., and Walter Paulus, "Transcranial direct current stimulation update 2011." *Restorative Neurology and Neuroscience* 29 (2011): 463–492. doi 10.3233/RNN-2011-0618.
- Noonan, John T. *A Church that Can and Cannot Change*. Notre Dame, IN: University of Notre Dame Press, 2019.
- Ohler, Norman. *Blitzed: Drugs in the Third Reich*. Translated by Shaun Whiteside. Boston: Houghton Mifflin Harcourt, 2018.
- Oltenau, Monica Diana Bercea. "Neuroethics and Responsibility in Conductiong Neuromarketing Research." *Neuroethics* 8 (2015): 191-202.
- O'Mara, Shane. *Why Torture Doesn't Work: The Neuroscience of Interrogation*. Cambridge, MA: Harvard University Press, 2015.
- Osmond, Humphrey. "A Review of the Clinical Effects of Psychomimetic Agents." *Annals of the New York Academy of Science* 66 (1957): 418-434. doi https://doi.org/10.1111/j.1749-6632.1957.tb40738.x.
- Oxford Center for Neuroethics. https://www.practicalethics.ox.ac.uk/oxford-centre-for-neuroethics.
- Pacholczyk, Tadeusz, and Stephen Hannon. "Challenges to the Determination of Death by Neurological Criteria." *National Catholic Bioethics Quarterly* 19, no. 4 (Winter 2019): 583-599.
- Parikh, Simy K., Stephen D. Silberstein. "Preventive Treatment for Episodic Migraine." *Neurol Clin* 37 (2019): 753–770.
- Parisa, Goodarzi, Khadijeh Falahadeh, Hamidrezza Aghayan et al. "Therapeutic abortion and ectopic pregnancy: alternative sources for fetal stem cell research and therapy in Iran as an Islamic country" *Cell Tissue Bank* 20 (2019): 11-24. doi: https://doi.org/10.1007/s10561-018-9741-y.
- Perrson, Ingmar, and Julian Savulescu. *Unfit for the Future: The Need for Moral Enhancement* (Oxford: Oxford University Press, 2012).
- ——. "Moral Hardwiring and Moral Enhancement." *Bioethics* 31, no. 4 (2017): 286-295.
- Pew Research. Conrad Hacket, and David McClendon. "Christians remain world's largest religious group, but they are declining Europe." April 5, 2017. https://www.pewresearch.org/fact-tank/2017/04/05/christians-remain-worlds-largest-religious-group-but-they-are-declining-in-europe/.
- ——. Michael Lipka, and David McClendon. "Why people with no religion are projected to decline as a share of the world's population." April 5, 2017. https://www.pewresearch.org/fact-tank/2017/04/07/why-people-with-no-religion-are-projected-to-decline-as-a-share-of-the-worlds-population/.
- Philip, Noah S., Jennifer Barredo, Emily Aiken, Victoria Larson, Richard N. Jones, M. Tracie Shea, Benjamin D. Greenberg, Mascha van't Wout-Frank. "Theta-Burst Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder." *American Journal of Psychiatry* 176, no. 11 (November 2019): 939-948.
- Pius XII. "The Prolongation of Life." The Pope Speaks 4 (1958): 933-398.
- Pletcher, Kenneth. "Tokyo Subway Attack of 1995." Britannica.com. https://www.britannica.com/event/Tokyo-subway-attack-of-1995.

Postigo Solana, Elena. "Bioethics and Transhumanism from the Perspective of Human Nature." *Arbor* 195 (April-June 2019), 1-10. doi: heeps://doi.org/10. 3989/arbor.2019.792n2008.

- Prainsack, Barbaraand Alena Buyx. *Solidarity: Reflections On An Emerging Concept in Bioethics*. Wiltshire, UK: Nuffield Council on Bioethics (NCoB), 2011. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.473.889&rep=rep1&type=pdf.
- President's Council on Bioethics Staff Working Paper. "An Overview of the Impact of Neuroscience Evidence in Criminal Law." https://bioethicsarchive.georgetown.edu/pcbe/background/neuroscience_evidence.html
- Racine, Eric. *Pragmatic Neuroethics: Improving Treatment and Understanding of the Mind-Brain.* Cambridge, MA: MIT Press, 2010.
- Ramger, Benjamin C., Kimberly A. Bader, Samantha P. Davies, David A. Stewart, Leila S. Ledbetter, Corey B. Simon, Jody A. Feld. "Effects of Non-Invasive Brain Stimulation on Clinical Pain Intensity and Experimental Pain Sensitivity Among Individuals with Central Post-Stroke Pain: A Systematic Review". *J Pain Res.* 12 (2019):3319-3329. https://doi.org/10.2147/JPR.S2160 81.
- Ricoeur, Paul. *The Rule of Metaphor*. Trans. by Robert Czerny, Kathleen McLaughlin and John Costello. New York: Routledge, 1978.
- Rippon, Gina, and Carl Senior. "Neuroscience Has No Role in National Security." *AJOB Neuroscience* 1, no. 2 (2010): 37-38.
- Robertson, Charles. "A Thomistic Analysis of Embryo Adoption." *National Catholic Bioethics Quarterly* 14, no. 4 (Winter 2014): 673-695.
- Ropper, Allan H., Martin A. Samuels, and Joshua P. Klein. *Adams and Victor's Principles of Neurology*, 10th ed. New York: McGraw Hill Education, 2014.
- Rosert, Elvira, and Frank Sauer. "Prohibiting Autonomous Weapons: Put Human dignity first." *Global Policy* 10, no. 3 (September 2019): 370-375.
- Rossini, Paolo M., David Burke, Robert Chen, Leonardo G. Cohen et al. "Non-invasive electrical and magnetic stimulation of the brain, spinal cord, roots and peripheral nerves: basic principles and procedures for routine clinical and research application. An updated report from an IFCN Committee." *Clinical Neurophysiology* 126, no. 6 (2015). https://doi.org/10.1016/j.clinph. 2015.02.001.
- Rowling, J. K. Harry Potter and the Goblet of Fire. New York: Scholastic, 2000.
- Rucker, James J. H., Jonathan Iliff, and David J. Nutt. "Psychiatry and the Psychedelic Drugs. Past, Present and Future." *Neuropharmacology* 142 (2018): 200-218.
- Russell, James A., Leon G. Epstein, David M. Greer, Matthew Kirschen, Michael A. Rubin, and Ariane Lewis. "Brain death, the determination of brain death, and member guidance for brain death accommodation requests: AAN position statement." *Neurology* 92, no. (Jan 2019), 228-232; doi:10.1212/WNL. 0000000000006750.
- Ryberg, Jesper. "Neuroethics and Brain Privacy: Setting the Stage." *Res Publica*, 23 (2017): 153-158.
- Saigle, Victoria, Veljko Dubljevic, and Eric Racine. "The Impact of a Landmark Neuroscience Study on Free Will: A Qualitative Analysis of Articles Using

Libet and Colleagues' Methods." *AJOB Neuroscience* 9, no. 1, (2018): 39. 29-41. doi: https://doi.org/10/1080/21507740.2018.1425756.

- Samson, Kurt. "Top Hospitals Routinely Disregard Brain Death Guidelines, Study Finds." *Neurology Today* 7, no. 21 (November 2007): 13–14.
- Sandel, Michael. *The Case against Perfection: Ethics in the Age of Genetic Engineering* Cambridge, MA: Belknap Press: 2009.
- Schantz, Edward J., Eric A. Johnson. "Properties and use of botulinum toxin and other microbial neurotoxins in medicine." *Microbiol Rev.* 56, no. 1 (March 1992): 80-99. doi: 10.1128/mr.56.1.80-99.1992. PMID: 1579114; PMCID: PMC 372855.
- Schleim, Stephan. "Moral Cognition: Introduction." In *Handbook of Neuroethics*, ed. Jens Clausen, and Neil Levy, 97-107. Dordrecht: Springer, 2015.
- Schüpbach, M. Gargiulo, M. L. Welter et al. "Neurosurgery in Parkinson's disease: A Distressed Mind in a Repaired Body?" *Neurology* 66, no. 12: (June 2006): 1811-1816.
- Schmahmann, Jeremy D. "The Differential Diagnosis of Rapidly Progressive and Rare Dementias." In *Dementia: Comprehensive Principles and Practice*, ed. Bradford C. Dickerson and Alireza Atri, 291-359. Oxford: Oxford University Press, 2014.
- Sgreccia, Elio. *Personalist Bioethics: Foundations and Applications*. Trans. by John A. DiCamillo and Michael J. Miller. Philadelphia: The National Catholic Bioethics Center, 2012.
- Shea, William R., and Mariano Artigas. *Galileo in Rome: The Rise and Fall of a Troublesome Genius*. Oxford: Oxford University Press, 2003.
- Singer, Peter. *Practical Ethics*, 3rd ed. Cambridge: Cambridge University Press, 2011.
- Sinnott-Armstrong, Walter. "Consequentialism." In *The Stanford Encyclopedia of Philosophy* (Summer 2019), ed. Edward N. Zalta. https://plato.stanford. edu/archives/sum2019/entries/consequentialism.
- Small, Scott A., and David J. Heeger. "Functional Imaging of Cognition." In *Principles of Neural Science*, 5th ed., eds. Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum and A. J. Hudspeth, 426-442. New York: McGraw Hill, 2013.
- Smith, M. Elzabeth, and Martha J. Farah. "Are Prescription Stimulants 'Smart Pills'"? *Psychology Bulletin* 137, no. 5 (September 2011): 717-741. doi:10.10 37/a0023825.
- Society for Neurosicence. Homepage. https://www.sfn.org.
- Spaemann, Robert. "Is Brain Death the Death of a Human Person?" In *Love and the Dignity of Human Life*. Grand Rapids Michigan: William B. Eerdmans, 2012.
- ——. *Persons: The Difference Between 'Someone' and 'Something.'* Oxford: Oxford University Press, 2017.
- Spagnolo, Primavera A., Chiara Montemitro, Mauro Pettorruso, Giovanni Martinotti, and Massimo Di Giannantonio. "Better Together? Coupling Pharmacotherapies and Cognitive Interventions With Non-invasive Brain Stimulation for the Treatment of Addictive Disorders," Front. Neurosci. 13 (2020): 1385. doi: 10.3389/fnins.2019.01385.

- Sporns, Olaf. Networks of the Brain. Cambridge, MA: MIT Press, 2011.
- Stahnisch, Frank W. "Nonrestraint, Shock Therapies, and Brain Stimulation Approaches: Patient Autonomy and the Emergence of Modern Neuropsychiatry." In *Handbook of Neuroethics*, eds. Jens Clausen and Neil Levy, 519-550. Dordrecht: Springer, 2015.
- Sugiyama, Aya, Toshihiko Matsuoka, Kazuaki Sakamune, Tomoyuki Akita, Ryosuke Makita, Shinsuke Kimura, Yukio Kuroiwa, Masataka Nagao, and Junko Tanaka. "The Tokyo subway sarin attack has long-term effects on survivors: A 10-year study started 5 years after the terrorist incident." *Plos One*, June 23, 2021. https://journals.plos.org/plosone/article/authors?id=10. 1371/journal.pone.0234967.
- Synaptic Transmission. https://web.williams.edu/imput/introduction_main. html.
- Synofzik, Matthis. "Ethical Implications of Brain Stimulation." In *Handbook of Neuroethics*, edited by Jens Clausen and Neil Levy, 553-560. Dordrecht: Springer, 2015.
- Tang, Xiaorong, Peidong Huang, Yitong Li, Juanchao Lan, Zhonghua Yan, Mindong Xu, Wei Yi, Liming Lu, Lin Wang, and Nenggui Xu. "Age-Related Changes in the Plasticity of Neural Networks Assessed by Transcranial Magnetic Stimulation With Electromyography: A Systematic Review and Meta-Analysis." *Frontiers in Cellular Neuroscience* 13, Article 469 (1 October, 2019): 1-13.
- Tobia, Kevin Patrick. "Personal Identity, Direction of Change, and Neuroethics." *Neuroethics* 9 (2016): 37-43.
- Trancik, Emily K. "Enhancement versus Therapy in Catholic Neuroethics." *National Catholic Bioethics Quarterly* 15, no. 1 (Spring 2015): 63-72.
- Tunick, Mark. "Brain Privacy and the Case of the Cannibal Cop." *Res Publica* 23 (2017): 179-196. doi 10.1007/s11158-017-9352-7.
- United Nations. "Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment." https://www.ohchr.org/en/professio nalinterest/pages/cat.aspx. The Convention was adopted by the United Nations in December 19874 and came into force on June 26, 1987.
- ——. "The Universal Declaration of Human Rights." https://www.un.org/en/universal-declaration-human-rights/.
- United States Anti-Doping Agency. "Report on Proceedings Under the World Anti-Doping Code and the USADA Protocol, United States Anti-Doping Agency v. Lance Armstrong." https://www.espn.com/photo/preview/!pdfs/121010/espn_reasoned_decision.pdf.
- United States Conference of Catholic Bishops. "General Introduction." *Ethical and Religious Directives for Catholic Health Care Services, Sixth Edition.* Washington, DC: United States Conference of Catholic Bishops, 2018.
- UPENN. RAM http://memory.psych.upenn.edu/RAM.
- U.S. Government Fact Sheet on Female Genital Mutilation or Cutting. https://travel.state.gov/content/travel/en/us-visas/visa-information-resources/fact-sheet-on-female-genital-mutilation-or-cutting.html.
- Vallor, Shannon. *Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting.* New York: Oxford University Press, 2016.

Vásquez Del Aguila, Jorge Walker, and Elena Postigo Solana. "Transhumanismo, neuroética y persona humana." *Revista de Bioética* 23, no. 3 (23015): 505-512. http://dx.doi.org/10.1590/1983-8042201533087.

- von Hildebrand, Dietrich. *Graven Images: Substitutes for True Morality*. Steubenville, OH: Hildebrand Press, 2019.
- -----. Ethics. Steubenville, OH: Hildebrand Press, 2020.
- . "What is Philosophy?" Steubenville, OH: Hildebrand Press, 2021.
- Wallace, R. Jay. "Practical Reason." In *The Stanford Encyclopedia of Philosophy* (Spring 2020), ed. Edward N. Zalta, https://plato.stanford.edu/archives/spr 2020/entries/practical-reason.
- White, Kathryn A. Becker-Blease, and Kathleen Grace-Bishop. "Stimulant Medication Use, Misuse, and Abuse in an Undergraduate and Graduate Sample." *Journal of American College Health* 54, no. 5 (2006): 261-268.
- Wijdicks, Eelco F. M. "Brain Death Worldwide: Accepted Fact But No Global Consensus in Diagnostic Criteria." *Neurology* 58, no. 1 (8 January 2002), 20-25.
- Williams, Thomas D. Williams, and Jan Olof Bengtsson. "Personalism." In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Spring 2020), https://plato.stanford.edu/entries/personalism/.
- Wolbring, Gregor, and Lucy Depp. "Cognitive/Neuroenhancement Through an Ability Studies Lens." In *Cognitive Enhancement: Ethical and Policy Implications in International Perspectives*, ed. Fabrice Jotterand and Viljko Dubljević (Oxford: Oxford University Press, 2016): 57-75.
- Wolf, Susan M. "Neurolaw: The Big Question." *The American Journal of Bioethics* 8, no. 1 (2008): 21-36.
- Wolpe, Paul Root, Kenneth R. Foster and Daniel D. Langleben. "Emerging Neurotechnologies for Lie Detection: Promises and Perils. In *Neuroethics: An Introduction with Readings*, ed. Martha J. Farah, 165-182. Cambridge, MA: MIT Press, 2010.
- Woopen, Christiane, K. Amande M. Pauls, Anne Koy, Elena Moro, and Lars Timmermann. "Early Application of Deep Brain Stimulation: Clinical and Ethical Aspects." *Progress in Neurobiology* 110 (2013): 74-88.
- World Health Organization. "Alcohol Drugs and Addictive Behaviours Unit." https://www.who.int/teams/mental-health-and-substance-use/alcohol-drugs-and-addictive-behaviours.
- ——. "Female Genital Mutilation." January 31, 2018. https://www.who.int/news-room/fact-sheets/detail/female-genital-mutilation.
- ——. "Preamble to the Constitution of WHO as adopted by the International Health Conference." New York, 19 June 22 July 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of WHO, no. 2, p. 100) and entered into force on 7 April 1948.
- Wu, He-Ming, Xue-Lian Wang, Chong-Wang Chang, Nan Li, Li Gao, Ning Geng, Jiu-Hong Ma, Wei Zhao, and Guo-Dong Gao. "Preliminary findings in Ablating the Nucleus Accumbens Using Stereotactic Surgery for Alleviating Psychological Dependence on Alcohol," *Neuroscience Letters*, 473, no. 2 (2010): 7.

Index

Α

Affectivity, 18 Alzheimer's, 153 Asimov, 110 autonomy, 134

В

BCI, 113, 114, 115, 278 Beauchamp and Childress, 31 Bostrum, 184 Brain Death, 160 Burgos, 204

\mathbf{C}

Cognitive Enhancement, 175 Cognitive Liberty, 212 common good, 33, 37, 41, 112, 113, 183, 216, 259, 264 consciousness, 131 consequentialism, 75, 76, 181, 219, 282

D

DARPA, 240

DBS, 116

Dementia, 151

dignity, 35, 38, 40, 41, 43, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 58, 60, 62, 63, 64, 65, 67, 100, 133, 135, 158, 183, 185, 264, 265, 269, 270, 275, 277, 278, 281

E

embryo, 73, 77, 78, 80, 88, 89, 90, 91, 92, 94, 95, 96, 102, 103, 104, 107, 157, 254, 255
Enhanced Interrogation, 217 enhancement, 171

F

Female Genital Mutilation, 23 Field of the Personal, 205 Forensics, 199 Free Will, 200 functional neuroimaging, 139 Functionalism, 86

G

Gazzaniga, 79 gradualism, 83

Н

Health Care Proxy, 156

human nature, 189

Hume, 2, 3, 4, 8, 9, 14, 21, 22, 23,

76, 90, 94, 120, 189, 206, 235, 276

I

Integral Personalism, 1, 5, 6, 9, 10, 14, 21, 22, 92

J

just war theory, 247 Justice, 199 286 Index

K

Kandel, 102, 138, 276, 282 Kant, 9, 10, 15, 46, 47, 57, 58, 60, 62, 86, 100, 181, 191, 219, 265, 276 knowledge, 2, 3, 4, 5, 9, 10, 11, 12, 13, 20, 21, 22, 35, 53, 57, 65, 80, 92, 98, 111, 112, 130, 144, 145, 148, 181, 182, 190, 191, 204, 221, 222, 223, 228, 229, 234, 235, 236, 255, 256, 257, 258, 259, 262, 266

L

Libet, 200 Lie Detection, 223

Kramer, 140

M

Macklin, 43, 44, 45, 47, 48, 53, 57, 63, 64, 264, 278
Macmurray, 204, 208
Media, 230
Messer, 255
Mill, 76
Moral Enhancement, 178
moral judgements, 179
Moreno, 241
MRI, 138

Ν

Neurocognitive Disorder, 152 Neuroethics and Religion, 254 Neuroimaging, 137 Neurologic Criteria for Brain Death, 162 Neuromarketing, 232 Neuroscience and Religion, 254 neurostimulants, 244 Neuroweapons, 246

P

Palliative Care, 154 personalism, xvii, 5, 6, 7, 16, 41, 264, 284 personhood, 17, 26, 28, 50, 51, 57, 73, 75, 76, 78, 79, 80, 83, 84, 85, 86, 87, 91, 93, 94, 95, 97, 100, 102, 103, 104, 106, 107, 109, 112, 140, 141, 143, 144, 145, 147, 148, 157, 158, 168, 176, 182, 191, 192, 204, 212, 229, 256, 258, 266 Pervitin, 240 posthuman, 188 Privacy, 212 Prozac, 140 psychedelics, 124, 125, 126, 127, 128, 129

R

Racine, 230 relativism, 23, 29, 30

S

Sgreccia, 31 Singer, 76, 77, 78, 84, 86, 88, 91, 103, 157, 168, 282 Stem Cell Research, 101

T

Technology, 36, 283 Theological Neuroethics, 255 TMS, 121 *Torture*, 219 Transhumanism, 184

U

utilitarianism, 75, 76, 78, 180, 273

Index 287

 \mathbf{V}

Von Hildebrand's, 59

vegetative state, 132 Virtue, 34, 35, 66, 181, 182, 184, 191, 204, 237

 \mathbf{Z}

zygote, 73