

# Journal of Cognition and Neuroethics

*Review of Neuroethics in Practice: Medicine,  
Mind, and Society*

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# Review of *Neuroethics in Practice: Medicine, Mind, and Society*

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Chatterjee, Anjan, and Martha J Farah, eds. 2013. *Neuroethics in Practice: Medicine, Mind, and Society*. New York: Oxford University Press. 278 pages. \$63 hardcover. \$38.99 Kindle edition.

*Neuroethics in Practice: Medicine, Mind, and Society* brings together authors from several disciplines writing on contemporary issues at the intersection of neuroscience and bioethics. The book's editors, Anjan Chatterjee, Professor of Neurology and a member of the Center for Cognitive Neuroscience and the Center for Neuroscience at Society at the University of Pennsylvania, and Martha Farah, Walter H Annenberg professor of Natural Sciences at the University of Pennsylvania and director for the Center for Neuroscience and Society, (and the editor of the 2010 *Neuroethics: An Introduction with Readings*), know the territory and have published extensively in the field. The book highlights many of the strengths of the burgeoning field of Neuroethics as well as some noteworthy weaknesses.

*Neuroethics in Practice* is divided into five sections, each focusing on a major issue in contemporary neuroethical thinking. In the first section, "Brain Enhancement," Chatterjee addresses the issue of "cosmetic neurology," the practice of attempting to enhance aspects of functioning and healthy individuals, including anabolic steroids and autologous blood transfusions in professional athletes, the medications traditionally used for treatment of Attention Deficit Disorder, and a more recent use of cholinesterase inhibitors to attempt to improve memory in the healthy; and for improvement in mood, St. John's Wort and selective serotonin reuptake inhibitors. Chatterjee organizes his presentation around four ethical issues; safety, distributive justice, coercion and potential erosion of character, noting that the notion of weighing risks and benefits traditional to medicine cannot be applied in the same manner to healthy individuals seeking enhancement. He touches on notions of character and personhood and the "fundamental concern that chemically changing the brain threatens our notion of personhood" through diminishing the adversity that builds character, or, in his example, considering the manner in which dampening painful memories "change who we are, if we are to some degree the sum of our experiences" (8). Enhancement also raises obvious questions of distributive justice, in terms of who has

access to such enhancers, and who will pay for them. Lastly, he raises the ethical issue of potential coercion to use pharmacological enhancement both in higher education and the workplace.

Iliina Singh and Kelly Kelleher addressed the thornier issue of neuroenhancement in the young, asking if cognitive enhancement is warranted “where cognitive and/or behavioral functioning is not judged to be impaired” (17), discussing how our notion of impairment has become more fluid with the advent of potential for enhancement. There also raise the concern that there is little long-term data available about enhancement use when neurodevelopment is still in progress, and the related, clinically and legally complex question of the extent to which those under the age of 18 can consent to or dissent from neuroenhancement use. Accepting that neuroenhancement is here to stay, they recommend that the primary care physician be the gatekeeper for such interventions.

Cognitive enhancement in the military is addressed by Michael B Russo, Melba C. Stetz and Thomas A. Stetz, who note that caffeine and nicotine have long been used as enhancements in the context of military service. They raise issues of potential coercion and raise the potential of what they term “command–dictated preventative medicine” in high risk military situations, asking whether a determination might be made by the command structure that individual rights of soldiers might be superseded by the good of the whole if cognitive enhancers are deemed likely to enhance group survival in high risk situations.

Direct to Consumer Advertising (DTC) is addressed by Peter Conrad and Alan Horwitz, who note that concepts of illness, disease, and health have begun shift as pharmaceuticals have been marketed to the general public. In this connection, Breehan Chancellor and Anjan Chatterjee review the research on brain training programs (such as Lumosity) and the manner in which neuroscientific data can be manipulated in marketing strategies, noting that “commerce has moved ahead of its science” (61).

The book’s second section looks at issues of Competence and Responsibility, beginning with how both are understood in current clinical and legal contexts as they touch on issues of driving, voting and financial decision-making (Jason Karlawish), informed consent for treatment and research (Scott Y.H. Kim), and legal issues of responsibility in cases of addiction (Steven E. Hyman), noting the increasing importance of neurocognitive data in these decision-making processes.

Brain Imaging is reviewed in the book’s third section, beginning with medical/legal issues in the use of neuroimaging data (Stacey Tovino), who notes that neuroimaging, which might initially be seen as a straightforward clinical process, has entered into criminal, civil and administrative law. She traces lawsuits that are filed for negligent

neuroimaging (filed by patients or families who are been injured or killed in the course of MRI scanning that falls below standards of practice), and the use of neuroimaging data in assessing disorders of consciousness. John Detyre and Tamara Bockow address the ethical issues around what should be done with incidental findings in MRI research, noting that highly specific research studies often do not meet the clinical standards for neuroimaging and that clinical significance of neuroimaging data is not always clear, two important factors in determining when or how finding should be disclosed to subjects in research studies. Martha Farah and Seth J. Gillihan write a fascinating chapter on the uses of neuroimaging in clinical psychiatry, noting its potential to be used diagnostically though such utility at this point in time has a limited scientific foundation. They present the case of the Amen Clinics founded by psychiatrist Daniel Amen (<http://www.amenclinics.com>), which claims to offer SPECT scanning for reliable psychiatric diagnosis, reviewing the research on neuroimaging, and concluding that this is a problematic and at best unproven technology for the psychiatric realm in need of further study before real diagnostic utility can be achieved. Not mentioned in this book, but equally concerning, is the use of neuroimaging data in forensic settings, typified by *No Lie MRI* (<http://www.noliemri.com>), which claims better lie detection via neuroimaging technology for use in forensic settings.

The book's fourth section touches on the issue familiar to readers who delve into bioethics, severe brain damage, examining current neurologic criteria for brain death (Steven Laureys), vegetative state and minimally conscious state (Joseph Fins and Nicholas D. Schiff), who also examine the ways in which neuroimaging data has exerted a role in improving diagnostic clarity, and wonder if this technology might one day "provide a mechanism for communication" for injured individuals unable to communicate through normal channels.

Martha Farah provides the book's only sustained reflection on our notions of personhood, and notes means by which neuroscience data can demonstrate "preserved capacity for cognition, consciousness and interpersonal communication" in brain-damaged individuals (185).

The final section, titled "New Treatments, New Challenges" is excellent overview of cutting-edge technology in the treatment of neurologic illness including Deep Brain Stimulation (Matthis Synofzik), Transcranial Magnetic Stimulation (Horath, Perez, Farrow, Frengi and Pascual-Leone), Implanted Neural Interfaces, "devices which interface directly with the nervous system for the monitoring and modulation of neural tissue," including deep brain stimulators, spinal cord stimulators and epilepsy monitoring and

suppression systems; they also address issues of informed consent in neurologically impaired individuals.

The book concludes with a brief chapter titled “Biologics in the Human Brain” in which Jonathan Kimmelman views the sciences of gene transfer, cell transplantation and neurotrophic factors for treating neurologic injury and disease both in research and clinical practice.

*Neuroethics In Practice* and shares the strengths and weaknesses of many contemporary works in the field. Such works are typically long on the neurologic and technical aspects but short on the philosophical/bioethical dimension of contemporary neuroscience. This shortfall often manifests itself in two ways. First, Neuroethics is not gone very far in developing comprehensive, nuanced visions of person and personhood. The attempts that are made typically move from a reductionist scientific perspective, equating person with function, typically expressed in the context of severe brain damage, with its profound practical implications around determination of death and organ transplantation. Second, despite the vast technological advances that have occurred in neuroscience, the field lacks any developed philosophy of technology despite extensive reflection in this area by thinkers as varied as Martin Heidegger, Herbert Simon, Michael Polanyi, Peter-Paul Verbeek, Hans Jonas and many others.

With these limitations in mind, *Neuroethics In Practice* is an excellent introduction to the clinical and technological advances made possible by neuroscience, providing a solid foundation for those who wish to enter into conversation about the ethical questions these new technologies raise.