**Neuroethics & the Extended Mind**

This course is being offered at Drexel University Spring quarter 2009. Email me at dr.ramey [at] mac.com if you would like to know more.

**PSY 480. Special Topics: Neuroethics and the Extended Mind.** This course is a survey of topics in (a) the relatively new discipline of neuroethics and (b) the hypothesis of the ‘extended mind’ in cognitive science. Critically, these two domains of inquiry have much to do with each other and exploring them both will help us understand when and where they intersect and why it is important to discuss these issues.

With new discoveries in the brain sciences comes a new appreciation of what it means to be a human being. Neuroethics is the field of inquiry that explores the two related topics: the ethics of neuroscience (e.g., proper conduct of neuroscientists and neuroscientific investigations) and the neuroscience of ethics (e.g., Is there a morality center in the brain?). Neuroethics forces us as scientists and as citizens to confront ourselves as moral beings in a community of other beings and as physical things in a universe obeying natural laws. What is the mind and what is the brain really? Is there free will and responsibility for our actions? Ought I to take a drug to ‘enhance’ my cognitive abilities or a pill to help me forget a painful memory? These are some of the exciting topics in neuroethics.

The analysis of the metaphors of cognitive scientific discourse (e.g., the mind is a computer, the mind is a blank slate) leads us to confront the very assumptions on which modern Western thought is based. Recent cognitive scientific research has focused on the mind being distributed or ‘extended’. That is, the mind is perhaps not an internal, intracranial computer-like container in which re-presentations of the external world are stored (as I imagine most people reading this think). Rather, the mind may extend out to include external resources on which one can rely. What are the consequences scientifically and socially for such radically different perspective of our psychology?

**Background and Introduction to Neuroethics**

Descartes, R. (1996). *Meditations on first philosophy: With selections from the Objections and Replies* (Rev. ed.). (J. Cottingham, Trans.). Cambridge, UK: Cambridge University Press. (Original work published 1641) [LibriVox audio recording available]

Le Fanu, J. (2009, February). How life has preserved its mystery. *Telegraph*.

Levy, N. (2007). *Neuroethics: Challenges for the 21st century* (pp. 1-29)*.* New York: Cambridge University Press.

**Identity I: Being a person and being a body, Integrity and authenticity**

Bayne, T., & Levy, N. (2005). Amputees by choice: Body integrity identity disorder and the ethics of amputation. *Journal of Applied Philosophy*, *22*, 75-86.

Damasio, H., Grabowski, T., Frank, R., Galaburda, A. M., & Damasio, A. R. (1994). The return of Phineas Gage: clues about the brain from the skull of a famous patient. *Science*, *264*, 1102-1105.

Farah, M. J., & Heberlein, A. S. (2007). Personhood and neuroscience: Naturalizing or nihilating? *The American Journal of Bioethics*, *7*(1), 37-48.

Levy, N. (2007). *Neuroethics: Challenges for the 21st century* (Chapters 2, 3)*.* New York: Cambridge University Press.

Optional:

El-Hai, J. (2001, February 4). The lobotomist. *The Washington Post*, W16.

Müller, S. (2009). Body integrity identity disorder (BIID): Is the amputation of healthy limbs ethically justified? *The American Journal of Bioethics*, *9*, 36-43.

**Neuroscience, ethics, and the public**

Friedrich, M. (2005). Neuroscience becomes image conscious as brain scans raise ethical issues. *Journal of the American Medical Association*, *294*, 781-783.

Schwitzer, G., Mudur, G., Henry, D., Wilson, A., Goozner, M., Simbra, M., Sweet, M., & Baverstock, K. A. (2005). What are the roles and responsibilities of the media in disseminating health information? *PLoS Medicine*, *2*(7) e215, 576-582.

Skolnick Weisberg, D., Keil, F. C., Goodstein, J., Rawson, E., & Gray, J. R. (2008). The seductive allure of neuroscience explanations. *Journal of Cognitive Neuroscience*, *20*, 470-477.

**Enhancement I: Pill-poppers pro and con**

Farah, M., Illes, J., Cook-Deegan, R., Gardner, H., Kandel, E., King, P., Parens, E., Sahakian, B., & Wolpe, P. R. (2004): Neurocognitive enhancement: What can we do and what should we do? *Nature Reviews Neuroscience*, *5*, 421-425.

Greely, H., Sahakian, B., Gazzaniga, M., Campbell, P., & Farah, M. J. (2008) Towards responsible use of cognitive-enhancing drugs by the healthy. *Nature*, 456, 702-705.

Manninen, B. A. (2006). Medicating the mind: A Kantian analysis of overprescribing psychoactive drugs. *Journal of Medical Ethics*, *32*, 100-105.

Riis, J., Simmons, J. P., & Goodwin, G. P. (2008). Preferences for enhancement pharmaceuticals: The reluctance to enhance fundamental traits. *Journal of Consumer Research*, *35*, 495-508.

Optional

Chatterjee, A. (2004): Cosmetic neurology: The controversy over enhancing movement, mentation, and mood. *Neurology*, *63*, 968-974.

Coyle, J. T. (2000). Psychotropic drug use in very young children. *Journal of the American Medical Association*, *283*, 1059-1060.

Required viewing

Gaviria, M. (Writer, Director, Producer). (2008, January 8). The medicated child [Television series episode]. In *Frontline*. United States:WGBH Educational Foundation. Retrieved from http://www.pbs.org/wgbh/pages/frontline/medicatedchild/

**Mind control and memory**

Han, J.-H., Kushner, S. A., Yiu, A. P., Hsiang, H.-L., Buch, T., Waisman, A., Bontempi, B., Neve, R. L. Frankland, P. W., & Josselyn, S. A. (2009). Selective erasure of a fear memory. *Science*, *323*, 1492-1496.

Levy, N. (2007). *Neuroethics: Challenges for the 21st century* (Chapters 4, 5)*.* New York: Cambridge University Press.

Osmundsen, J. A. (1965, May 17). ‘Matador’ with a radio stops wired bull. *New York Times*, p. 1.

Optional

Greely, H. T., & Illes, J. (2007). Neuroscience-based lie detection: The urgent need for regulation. *American Journal of Law & Medicine*, *33*, 377-431.

Kolber, A. J. (2006). Therapeutic forgetting: The legal and ethical implications of memory dampening. *Vanderbilt Law Review*, 59, 1561-1626.

Required viewing

Golin, S., & Bregman, A. (Producers), & Gondry, M. (Director). (2004). *Eternal sunshine of the spotless mind* [Motion picture]. United States: Universal Studios.

Mason, A. (Producer), & Proyas, A. (Producer, Director, Writer). (1998). *Dark city* [Motion picture]. United States: New Line Cinema.

**The self and free will**

Levy, N. (2007). *Neuroethics: Challenges for the 21st century* (Chapters 6, 7)*.* New York: Cambridge University Press.

Libet, B. (1999). Do we have free will? *Journal of Consciousness Studies*, *8-9*, 45-57.

Glannon, W. (2008). Moral responsibility and the psychopath. *Neuroethics*, *1*, 158-166.

**The ‘extended’ self, extended morality, & Neuroethics conclusion**

Bach-y-Rita, P., & Kercel, S. W. (2003). Sensory substitution and the human-machine interface. *Trends in Cognitive Sciences*, *7*, 541-546.

Haidt, J. (2007). The new synthesis in moral psychology. *Science*, *316*, 998-1002.

Levy, N. (2007). *Neuroethics: Challenges for the 21st century* (Extended mind: pp. 29-68, 308-316; brain: Chapter 9). New York: Cambridge University Press.

Ramey, C. H. (2007-2008). Culture as extended mind and body. *Journal of Theoretical and Philosophical Psychology*, *27*(2)-*28*(1), 146-169.

Young, S. N. (2006). A rant against jargon and neologisms. *Journal of Psychiatry & Neuroscience*, *31*, 155-156.