

FINAL DRAFT

Summer One Semester 2018

HCB 504

BIOTECHNOLOGY: Special Topics

Room 067

Mondays, Tuesday, Thursdays 6 – 8:30 pm

Instructor of Record: Migdal, Kobba, Post

Phyllis Migdal, MD MA phyllis.migdal@stonybrookmedicine.edu

Timothy Kobba MA timothy.kobba@stonybrook.edu

Stephen Post PhD stephen.post@stonybrookmedicine.edu

Course Description: Dignity and Biomedical Aspirations – Therapy, Enhancement & Transhumanism

The three “supers” of transhumanism are not just “science fiction.” Super-longevity, super-happiness, and super-intelligence, along with perfect babies, are works-in-progress at the interface of “old” evolved human nature as we have known it and technical progress toward the posthuman of our own creation. With the astonishing biotechnological powers that are increasingly reshaping nature and human nature, are we in a “transitional state” (transhumanism) en route to a redesigned posthuman future in which current limitations are overcome? Four centuries ago, Francis Bacon announced the biological utopia of the future in his *The New Atlantis*, replete with fountains of youth and chimeras. The term “transhumanism” was originally coined by the British biologist philosopher Julian Huxley in a 1957 essay to capture the ways in which social institutions could supplant evolution in refining and improving the species, as could technology. Sensory perception, emotive ability, cognitive capacity, health and life spans could all be augmented. The term was taken over in the 1990s by British philosopher Max More, who began defining the principles of transhumanism as a futurist philosophy that began in California and is now a huge worldwide movement. Now every summer hundreds of thousands of transhumanists gather in the Nevada desert at “Burning Man” to ritually celebrate the “posthuman” future by burning a huge wooden sculpture of the “old” human in the spirit of a “brave new world.” In the meanwhile, the National Institute on Aging is devoting 60% of its budget to the basic science of aging in the hope of life-span extension that will compress the chronic morbidities.

The transhumanist thesis is that human beings will eventually be able to transform themselves into different beings so greatly “expanded” beyond our current condition that the label “posthuman” can apply. This may sound entirely futuristic, but it is happening already.

Super-happiness. Take psychopharmacology. How about super-happiness, for instance? While deep-brain stimulation is a useful therapy for depression, why not perform this procedure on perfectly willing people who are not depressed but would still like to be more euphoric and upbeat as needed by the simple turn of a dial? What about having everyone take a “happiness pill” so that they do not experience anything but tranquility and delight? Aldous Huxley’s *Brave New World* provides a perfect bliss, as there is always “soma, delicious soma,” and everyone seems so good-natured and benevolent. The substance has no side-effects, and allows us to reside in bliss, oblivion, pure love and pure utopia. What about all the members of the Cleveland Orchestra who are already taking propranolol before a performance even though they do not have an “anxiety disorder” in any diagnosable sense? Francis Fukuyama argues that such usage is a leading edge of transhumanism.

Super-longevity. And what about anti-aging and “super-prolongevity”? The National Institute on Aging already devotes half its annual budget to the basic science of cellular aging with therapeutic goals in mind since old age

is the main predictive factor for most chronic illness. But then everyone will want to take the pill, and we will have fundamentally enlarged the human life span. Will we need to reproduce much at all? Will we become listless and bored like the elves in *The Lord of the Rings*? Or will we celebrate in the absence of children?

Super-cognition. How about “cognitive enhancement” and super-intelligence? Adderall was first introduced for ADD, but now it is widely used exam week by people who do not have ADD so they can do better. Have we not already made ourselves into virtual cyborgs by virtue of all those little white plastic Apple devices that we are hooked up to nonstop? What about connecting to AI? What do we mean by “intelligence” anyway? Will we get to a point where AI device and brain are linked? It’s all incremental as *Screenagers* rule the roost, wired and addicted into a new age. Will we ever be able to download our consciousness?

Super-babies: Ah, we are getting close to asexual reproduction. Reproductive cloning and genetic engineering move us closer to some image of “the perfect baby” as inevitably shaped by cultural biases and conformism. Are we headed for *Brave New World*?

Are we already transhuman, and already busy redesigning ourselves for the next stage of human development? Is the “natural human being” long gone anyway?

If this “progress” goes unchecked, will human “nature” and “dignity” be preserved? Will human “equality” be lost to the division between the “old” and the “new” humans? Are we headed for a utopian or a dystopian future? Should we allow ourselves to come to a stage where human beings as we now know them will be reshaped into new forms that make the old forms appear pointless? Are we so far down this road by virtue of enhancement medicine and boundless scientific research that there is no stopping?

There are many anti-transhumanists. They ask many questions such as:

1. Does transhumanism represent the kind of scientific endeavor humanity should embark on considering its many other urgent and demanding priorities?
2. Does science possess all of the necessary knowledge to attempt to alter the human body, nature’s masterpiece? Do the proper methods and technologies even exist? Or are we on a wild goose chase?
3. Human beings were once viewed as having been created in God’s image and as being the pinnacles of all creation. Can/should a masterpiece of nature, endowed with dignity and grace, be metamorphosed into a machine-made robot?
4. Are we really “shackled” by primitive Darwinian evolution and destined to be our own visionary creators, or does human nature as evolved have within it millennia of evolutionary wisdom that we have only begun to understand?
5. *Cui bonum?* Who will benefit from this? Will transhumanism bring any meaningful improvement to our daily lives?
6. Will we still be as nasty as we are kind? Or will the right artificial oxytocin complex make us empathic in a certain sense?
7. Will we forget what it means to fall in love, to walk down an aisle, take a vow, and have children and enjoy watching them grow?
8. Should we ever give “autonomous technology” carte blanche over our own human lives? Is Technology leading humanity into a robotic civilization before we even explore the natural wonders hidden within the Amazonian rainforest of our brains?
9. Shouldn’t we really take our values from nature, as in “natural law”?

The big questions are endless. What is human dignity and what does it have to say to the ever expanding powers of biotechnology to recreate an increasingly malleable human nature? What is “dignity” and how it has been used in debates over “enhancement” medicine and transhumanism? After an examination of enhancement, transhumanism, and “dignity” ethics, we will ask ourselves what limits human dignity should impose on the

biotechnical vision for the posthuman future, if any. (FYI, Sunday August 26 to Monday September 3 Burning Man is scheduled in the Black Rock Desert.)

SECTION ONE: What is transhumanism? What is Happiness? What is Super-Happiness?

June 4, 2018 (Migdal, Kobba, Post)

Introduction: What Is Transhumanism?

Two Videos in Class:

1. The “Three Supers”- Super-longevity, Super-happiness (the end of suffering and sadness), Super-intelligence <https://gizmodo.com/can-technology-ever-make-us-happy-1459351031>
2. The Transhumanist Declaration <https://www.dailymotion.com/video/xqyz78>

Readings:

1. Christopher Hook, “Transhumanism and Posthumanism,” in *The Encyclopedia of Bioethics, 3rd edition*, ed. SG Post (New York: Macmillan Reference, 2004), Vol. 5, pp. 2517-20. (pdf)
2. Max More, “The Philosophy of Transhumanism (pdf)
3. The Transhumanist Declaration (pdf)
4. SG Post, “Humanism, Posthumanism, and Compassionate Love,” *Technology in Society*, Vol. 31, No. 1, 2010, pp. 35-39.

June 5, 2018 (SGP)

The Wisdom of Francis Fukuyama

Are Brave New World and 1984 upon us?

Video in class:

<https://www.youtube.com/watch?v=1tBN1nDqoSs>

Reading:

Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (NY: Picador, 2002).

Please read this book in May before class begins on June 4. It is a great introduction that covers neuropharmacology, “super-well-being,” “super-longevity,” “super cognition,” genetic engineering, human nature, human dignity, and political control. It also does a great job with the distinction between medical therapy, enhancement, and transhumanism/posthumanism.

June 7, 2018 (SGP with Adam Sepe)

Super-happiness, Psychopharmacology and Neuro-stimulation for All: On the Nature of Happiness [hedonic, flow, meaning] & the Loss of Sadness

Video in class:

“Generation Rx”

Readings:

1. Fukuyama
2. Allan V. Horwitz and Jerome C. Wakefield, “The Loss of Sadness” (pdf)
3. Adam Sepe, “The Argument for Technoexistentialism”

SECTION TWO: Life Extension, Super-longevity and the Perfect Baby

June 11, 2018 (Migdal)

Is Aging a Disease? Superlongevity and the Science of Life-extension

Video in Class:

Forever Young: The Documentary – BBC News

https://youtu.be/p_4UPdFqgIQ

Readings:

1. Juengst, E. T., Binstock, R. H., Mehlman, M., Post, S. G., & Whitehouse, P. (2003). “Biogerontology, Anti-Aging Medicine, and the Challenges of Human Enhancement,” *Hastings Center Report*, Vol. 33(4), July-August, 21-30.
2. Adams, M. B. (2004). “The Quest for Immortality: Visions and Presentiments in Science and Literature.” from SG Post & RH Binstock, eds., *The Fountain of Youth: Cultural, Scientific, and Ethical Perspectives on a Biomedical Goal*. New York: Oxford University Press.
3. Faragher, R. G. (2015). “Should We Treat Aging as a Disease? The Consequences and Dangers of Miscategorisation.” *Frontiers in Genetics*, 6, 171.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4500987/>
4. Gladyshev, T. V., & Gladyshev, V. N. (2017). “A Disease or Not a Disease? Aging as A Pathology.” *Trends in Molecular Medicine*, 22(12), 995-996.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5540438/>
5. Oliver Wendell Holmes. “The Deacon’s Masterpiece or, The Wonderful “One-Hoss Shay:” A Logical Story”
[Holmes - The One-Hoss Shay](#)
6. Tal, D. (2016). “Moving from Extreme Life Extension to Immortality: Future of Human Population, P6.” *Quantumrun.com*.
<http://www.quantumrun.com/prediction/moving-extreme-life-extension-immortality-future-human-population-p6>

June 12, 2018 (Migdal)

The Ethics of Life-Extension – come to class prepared to support/debate your view on this issue.

Video in class:

https://www.ted.com/talks/aubrey_de_grey_says_we_can_avoid_aging (Aubrey De Grey)

Readings:

1. Post, S. G. (2004). “Establishing an Appropriate Ethical Framework: The Moral Conversation Around the Goal of Prolongevity.” *Journal of Gerontology*, 59A(6), 534-539.
2. Pijnenburg, M. A., & Leget, C. (2007). “Who Wants to Live Forever? Three Arguments Against Extending the Human Lifespan?” *Journal of Medical Ethics*, 33(10), 585-587.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2652797/?report=classic>
3. Selections attached from SG Post & RH Binstock, eds., *The Fountain of Youth: Cultural, Scientific, and Ethical Perspectives on a Biomedical Goal* (New York: Oxford University Press, 2004), Chapters by Arthur L. Caplan, Leon R. Kass, Audrey R. Chapman, & Diogenes Allen.

June 14, 2018 (Migdal)

Genetic Engineering: Genetic Engineering, Designer Babies and the Perfect Child

Video in Class:

1. Design Your Own Baby: Patent Granted
<https://youtu.be/1sspJ3QNtcY>
2. Justice with Michael Sandel – CCCB: Bioethics: Designer children
<https://youtu.be/aFcfygmMM0I>

Readings:

1. Stephen L. Baird. (2007). “Designer Babies: Eugenics Repackaged or Consumer Options,” *The Technology Teacher*, 66(7), 12-16.
2. Nick Bostrom. (2003). “Human Genetic Enhancements: A Transhumanist Perspective,” *The Journal of Value Inquiry*, 3(7), 493-506.
3. Murray, T. H. (2014). “Stirring the Simmering “Designer Baby” Pot,” *Science*, 343, 1208-1210.
4. “Human Genome Editing Science, Ethics, and Governance.” (Report Summary 2017). The National Academies of Sciences, Engineering, and Medicine. Washington, D. C.
http://www.nationalacademies.org/cs/groups/genesite/documents/webpage/gene_177260.pdf
5. Reardon, S. (2017). “Baby’s DNA Mix Revealed.” *Nature*, 544, (17), 17-18.
https://www.nature.com/polopoly_fs/1.21761!/menu/main/topColumns/topLeftColumn/pdf/nature.2017.21761.pdf

6. Newson, A. J., Wilkinson, S., & Wrigley, A. (2016). "Ethical and Legal Issues in Mitochondrial Transfer," *EMBO Molecular Medicine*, 8, (6), 589-591.
<https://onlinelibrary.wiley.com/doi/epdf/10.15252/emmm.201606281>

SECTION THREE: INDEPENDENT READING AND WRITING

During this week you work independently. Read

Aldous Huxley, *Brave New World*
&
CS Lewis, *The Abolition of Man*

Write a one-page reflection on each of the above two books focusing on the big question each leaves you with.

Also, write a 5-page essay on one of the topics from the first two weeks of the course, due June 25.

Begin to think about your paper for the course, due July 5, on this question: Wherein Lies Human Dignity and What Does It Say to the Biotechnology of Enhancement and Transhumanism?

SECTION FOUR: Super-Cognition, Human Dignity and the Singularity

June 25, 2018 (Kobba)

Posthumanism and Singularity: The good, the bad, and the ugly

Videos in Class:

1. Our Post-Human Future | David Simpson | TEDx Santo Domingo
<https://www.youtube.com/watch?v=uAb-mSq615g>
2. Vernor Vinge on the Technological Singularity
<https://www.youtube.com/watch?v=5zMAiGcDHG8>
3. Ray Kurzweil: The Coming Singularity
<https://www.youtube.com/watch?v=1uIzS1uCOcE>
4. Paul Root Wolpe: Kurzweil's Singularity Prediction is Wrong
<https://www.youtube.com/watch?v=qRgMTjTMovc>

Readings:

1. Vinge, Vernor. (1993). "The coming technological singularity: How to survive in the post-human era." *NASA. Lewis Research Center, Vision 21: Interdisciplinary Science and Engineering in the Era of Cyberspace*, 11-22.
<https://ntrs.nasa.gov/search.jsp?R=19940022856>

2. Chundi, Kishore. "Becoming Post-Human: An Introduction to Transhumanism: The Movement, the Theory, the Dangers." *The Politic*, 3 Nov. 2017.
thepolitic.org/becoming-post-human/
3. Bostrom, Nick. (2008) "Why I want to be a Posthuman When I Grow Up." *Medical Enhancement and Posthumanity*, 107-137
4. Friedersdorf, Conor. "Immortal but Damned to Hell on Earth: The Danger of Uploading One's Consciousness to a Computer without a Suicide Switch." *The Atlantic*, Atlantic Media Company, 28 May 2015
www.theatlantic.com/technology/archive/2015/05/immortal-but-damned-to-hell-on-earth/394160/
5. Trimper, J.B., Wolpe, P.R., Rommelfanger, K.S. (2014). "When "I" becomes "We": ethical implications of emerging brain-to-brain interfacing technologies." *Frontiers in Neuroengineering*, Vol. 7, No. 4, February 2014.
6. Peter J. Whitehouse, Eric T. Joungst, Maxwell Mehlman, & Thomas H. Murray, "Enhancing Cognition in the Intellectually Intact," *Hastings Center Report*, Vol. 27, No. 3, May-June 1997, pp. 14-22.

June 26, 2018 (Kobba)
But what of our dignity?

Video in Class:

1. The Case against Perfection: Michael Sandel
http://library.fora.tv/2008/07/17/The_Case_Against_Perfection_Michael_Sandel

Readings:

1. Shulman, Adam. "Chapter 1: Bioethics and the Question of Human Dignity." *Human Dignity and Bioethics: Essays Commissioned by the Presidents Council on Bioethics*. University of Notre Dame Press, 2008.
2. Gilbert Meilaender, "Human Dignity: Exploring and Explicating the Council's Vision," in *Human Dignity and Bioethics: Essays Commissioned by the President's Council on Bioethics* (Washington DC: www.bioethics.gov, pp.253-277).
3. Jotterand, Fabrice. "Human Dignity and Transhumanism: Do Anthro-Technological Devices Have Moral Status?" *American Journal of Bioethics*, Vol 10, No. 7, 45-52, July 2010.
4. Kass, Leon R. "Defending Human Dignity." *Commentary*, Vol. 124, No. 5, 53-61, December 2007
5. Bostrom, Nick. "In Defense of Posthuman Dignity." *Bioethics*, Vol. 19, No. 3, 202-214, June 2005
6. Pellegrino, Edmund D. "Chapter 20: The Lived Experience of Human Dignity." *Human Dignity and Bioethics: Essays Commissioned by the Presidents Council on Bioethics*. University of Notre Dame Press, 2008.

7. Charles Rubin, "Human Dignity and the Future of Man," in *Human Dignity and Bioethics: Essays Commissioned by the President's Council on Bioethics* (Washington DC: www.bioethics.gov), pp.157 – 172).

June 27, 2018 (Kobba)

Video out of class

Transcendence (2014 film), 1h 59m, (available on HBO)

June 28, 2018 (Kobba)

The Great Debate: Enhancement, Transhumanism, Posthumanism, Dignity, and what it means to be human

Videos in Class:

1. Fukuyama & Sandberg: The Posthuman Condition
<https://vimeo.com/56630885>
2. Raymond Kurzweil – What is the Far Far Future of Humans in the Universe? (4:08 – 9:27)
<https://www.youtube.com/watch?v=FePeytAqZu4>

Readings

1. Kass, Leon. "Chapter 10: The Permanent Limitations of Biology." *Life, Liberty, and the Defense of Dignity: the Challenge for Bioethics, Nature and Purposes of Biology*. Encounter Books, 2002
2. Miah, Andy. "Justifying Human Enhancement: The accumulation of Biocultural Capital." Max More & Natasha Vita-More, eds., *The Transhumanist Reader: Classical and Contemporary Essays on Science, Technology, and Philosophy of the Human Future*. Part VII, Ch 29, 292-301. New York: Wiley-Blackwell, 2013
3. Hopkins, Patrick D. "Is Enhancement Worthy of Being a Right?." Max More & Natasha Vita-More, eds., *The Transhumanist Reader: Classical and Contemporary Essays on Science, Technology, and Philosophy of the Human Future*. Part VII, Ch 33, 345-354. New York: Wiley-Blackwell, 2013
4. Sententia, Wrye. "Freedom by Design: Transhumanist Values and Cognitive Liberty." Max More & Natasha Vita-More, eds., *The Transhumanist Reader: Classical and Contemporary Essays on Science, Technology, and Philosophy of the Human Future*. Part VII, Ch 34, 356-360. New York: Wiley-Blackwell, 2013
5. Lawrence, David R. "The Edge of Human? The Problem with the Posthuman as the 'Beyond'." *Bioethics*, Vol. 31, No. 3, 171-179, March 2017.
6. Trujillo Jr. G. "From Taqueria to Medical School: Juan Carlos, Aristotle, Cognitive Enhancements, and a Good Life." *Techné: Research in Philosophy & Technology*, Vol. 22, No. 1, 1-27, January 2018

Deliverables and Grading

Write a one-page reflection on Huxley and a one-page reflection on Lewis focusing on the big question each leaves you with. (5%)

Write a 5-page essay on one of the topics from the first two weeks of the course, due June 25. (25%)

Paper for the course, 7 pages, due July 5, on this question: Wherein Lies Human Dignity and What Does It Say to the Biotechnology of Enhancement and Transhumanism? (60%)

Attendance and lively participation 10%

From Official Stony Brook University Policy:

Statements required to appear in all syllabi on the Stony Brook campus:

Americans with Disabilities Act:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate.

Academic Integrity:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report and suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (Schools of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and School of Medicine are required to follow their school-specific procedures.