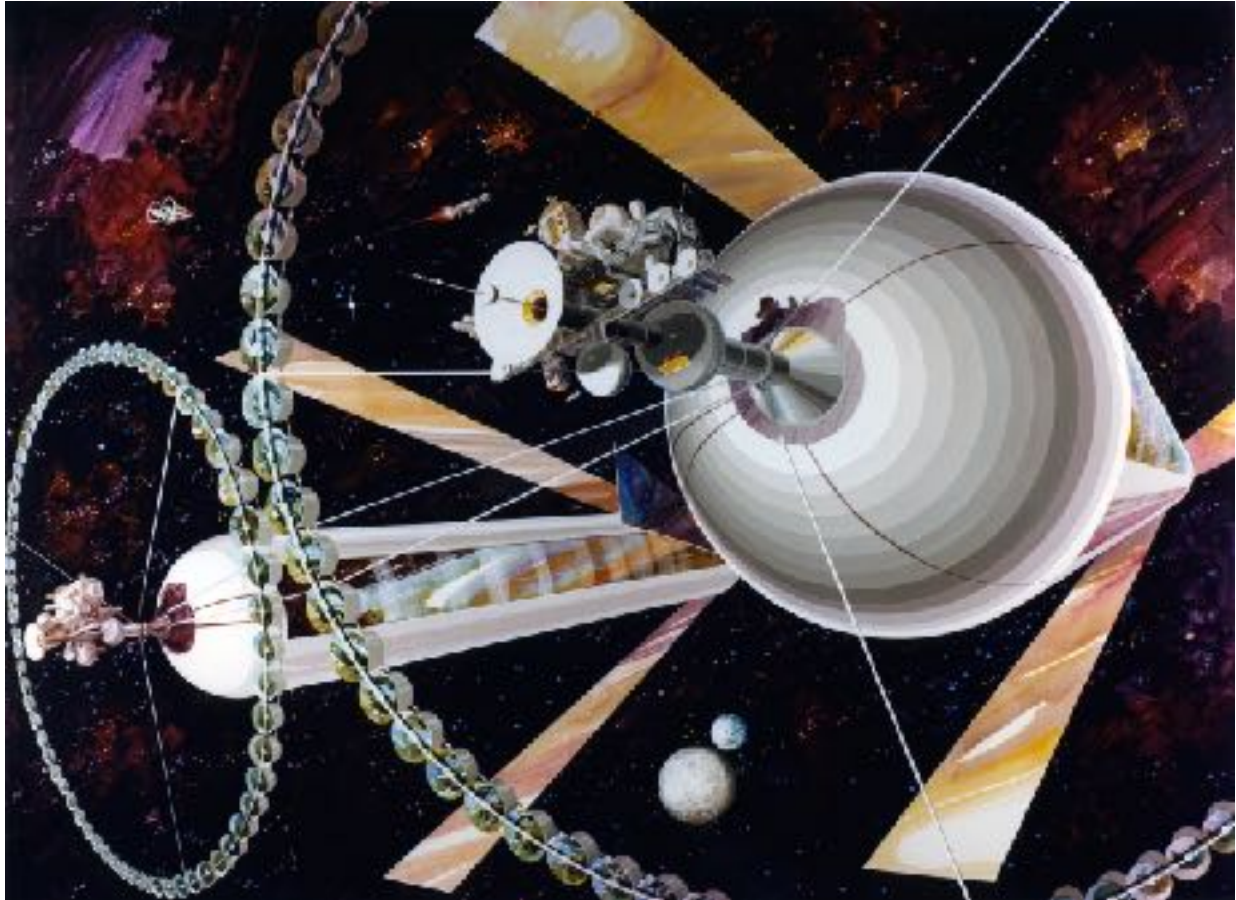


Instructor: Dan Zimmer (he/they), zimmerd@stanford.edu
Winter 2023: T/Th 12:00-1:20pm

Office Hours: Tues. 3:00-5:00pm
Encina Hall, 2nd Floor



“Earth, Space, Bits: Debating the Nature and Future of Humanity”

Are humans fundamentally symbiotic organisms who cannot exist apart from the rest of earthly life? Should humans try to alter their physiology in order to inhabit other planets? Or might the ultimate purpose of human existence be to leave organic biology behind entirely? This course explores a range of competing contemporary claims concerning the nature and future of humanity. It begins by reviewing the efforts of mid-20th century cybernetics to reconceive human beings as “complex information processing systems.” It then traces how this redefinition has led to the development of several competing camps: an ecological wing that views human beings as complex systems that must achieve environmental homeostasis; a posthumanist wing that stresses the radical plasticity and adaptability of human organisms; and a transhumanist wing that seeks to unleash the potential of human information processes on a cosmic scale. Participants will have the opportunity to survey the scientific foundations of each position and debate their ethical and political implications.

Learning Goals

To successfully complete this course, you will: (1) develop a taxonomy for better navigating what it means to belong to a species caught somewhere between technological transcendence and ecological collapse; (2) hone your ability to sustain constructive dialogue on emotionally fraught topics; and (3) develop your capacity to conduct independent research and synthesize your findings in an essay format.

Course Format

This is a seminar class that meets twice a week for 80 minutes. I will typically begin class with a short presentation that will frame the material, provide context, and/or raise problems for us to talk about. Our meetings will also involve significant amounts of in-class discussion. This means that it is important for you to keep up with the reading, to bring the texts with you to class, and to come prepared to think and talk together about the day's material.

Course Requirements

- **Weekly Responses:** You will be expected to write a short (200-300 word) reflection on an aspect of one of that week's readings or a connection or tension that you notice between readings. You will also be expected to comment on at least one other person's response. Responses and comments are due by 8:00am Thursdays.
- **Short Presentation:** On the first day of class, you will sign up to deliver a short (3-5 minute) presentation on the assigned readings that will help to open up that day's discussion. This affords each student the opportunity to practice synthesizing complex material while also steering our conversation towards areas of personal interest.
- **Seminar Participation:** You are expected to actively contribute to in class discussions, deepening and diversifying the range of perspectives while helping to foster an atmosphere in which all feel welcome to participate. You will not be graded on either the sheer volume of participation nor how sophisticated you sound, but on whether your comments contribute to advancing our shared project of better understanding the ideas under discussion.
- **Research Project:** You will be responsible for composing a medium length (3,000-5,000 word) final essay. Students are encouraged to range widely and be creative in their choice of topics. Proposals (300-500 words) will be due the fifth week of class. A near-complete draft (of at least 3,000 words) will be due by week eight and receive prompt feedback in time to revise and submit the final draft.

Grading

Assignments are letter-graded. These letter grades are then translated onto a 100-point scale, where A=95, B=85, etc., and pluses and minuses add and subtract 3.5 points respectively. Each of these values represents the midpoint in a "grade space" that ranges from 96.99 to 93 (for an A) 92.99 to 90 (for an A-minus), etc. Your letter grade for the course will be determined by the "grade space" into which the average of your numerical grades falls. (In other words: an A on an assignment is worth 95, but the minimum final grade for an A in the class is 93.) The course requirements contribute to your overall grade as follows:

Presentation:	10%
Weekly Responses:	20%
Participation:	20%
Term Paper:	50%

Guidelines for Written Work

Written work must be typed in 12-point standard font (e.g. Times New Roman) and double-spaced, with one-inch margins and numbered pages. All evidence must be cited in accordance with MLA or Chicago format using footnotes rather than endnotes. You will find a range of writing support services available at the [Hume Center](#), but I am also happy to provide pointers and feedback during office hours.

Course Policies

- **Attendance:** Students seeking credit for the course must commence attending sessions by the second week of class. After this, you may miss two class sessions with no questions asked (though advanced warning is appreciated where possible). From the third missed class onward, any additional unexecuted absences will lower your participation score by a letter grade.
- **Deadlines:** You may submit one assignment up to 48 hours late with no points deducted. Beyond this, assignments will lose one third of a letter grade (e.g. A- to B+) for every 24 hours they are late.
- **Honor Code:** You are expected to abide by [Stanford's Honor Code](#). Please review [these recommendations](#) from the Office of Community Standards and this refresher on [documentation and citation resources](#) from the Hume Center.
- **Academic Accommodations:** If you experience disability, please register with the Office of Accessible Education (OAE). Professional staff will evaluate your needs, support appropriate and reasonable accommodations, and prepare an Academic Accommodation Letter for faculty. To get started, or to re-initiate services, please visit oea.stanford.edu.

Credit Options

Each academic credit you earn requires 3 hours of work per week (including class time). Workload for this course is based on 4 credit hours, which means an average of 9-10 hours a week spent on reading and assignments. The 3 credit variant of this course exists to provide you with additional scheduling flexibility, but the workload remains the same for all students.

Required Books: None

Course Schedule

Week 1: Introduction to Course Themes

Jan. 9

Introduction

Jan. 11

Bill Joy, "[Why the Future Doesn't Need Us](#)" in *Wired Magazine* (April, 2000).

Marc Andreessen, "[The Techno-Optimist Manifesto](#)" (October, 2023).

Douglas Rushkoff, *Survival of the Richest: Escape Fantasies of the Tech Billionaires* (New York: W.W. Norton & Co., 2022), 1-35.

Week 2: The Future Before Cybernetics

Jan. 16

Francis Bacon, *The New Organon* (Cambridge: Cambridge University Press, 2000), pp. 2-3, 14-24.

Cecil Rhodes and William Thomas Stead, *The Last Will and Testament of Cecil John Rhodes* (London: Review of Reviews Office, 1902), 183-192

J.D. Bernal, [The World, the Flesh and the Devil: An Enquiry into the Future of the Three Enemies of the Rational Soul](#) [1929] (New York: Verso, 2018).

Chapters: "The Future," "The World," "The Flesh," and "The Devil"

Jan. 18

Asif Siddiqi, "Utopians, Mystics, and the Popular Culture of Spaceflight in Revolutionary Russia" in *Osiris*, Vol. 23 (2008), pp. 260-280.

Bernal, *The World, the Flesh and the Devil*, Chapters: "Synthesis" and "Possibility"

Olaf Stapledon, "Interplanetary Man" in *Journal of the British Interplanetary Society*, Vol. 7, No. 6 (November, 1948), pp. 213-233.

Teilhard de Chardin, *Man's Place in Nature* (1949), Trans. René Hague (New York: Harper & Row, Inc., 1956), pp. 17-33, 109-111.

Week 3: Cybernetics, Information, and Life as Negative Entropy

Jan. 23

James Beniger, *The Control Revolution* (Cambridge, MA: Harvard University Press, 1986), pp. 1-27, 54-60.

Ronald Kline, *The Cybernetics Moment: Or Why We Call Our Age the Information Age* (Baltimore: Johns Hopkins University Press, 2015), pp. 1-26.

Erwin Schrödinger, *What Is Life?* [Feb. 1943] (Cambridge: Cambridge University Press, 1992), 62-77.

Arturo Rosenblueth, Norbert Wiener, and Julian Bigelow, "Behavior, Purpose, and Teleology" in *Philosophy of Science*, Vol. 10., No. 1 (Jan. 1943), pp. 18-24.

Jan. 25

Charles Dechert, "The Development of Cybernetics" in *The Social Impact of Cybernetics* (New York: Simon & Schuster, 1966) 11-36.

Norbert Wiener, *The Human Use of Human Beings* (Boston: Houghton Mifflin Co, 1954), pp. 7-27, 95-104.

W. Ross Ashby, *An Introduction to Cybernetics* (London: Chapman & Hall, 1956), pp. 1-5.

Stafford Beer, *Cybernetics and Management* (London: The English Universities Press Ltd., 1959), pp. xi-xv, 7-48, 128-141.

Week 4: Rethinking the Human as a Complex System**Jan. 30**

Russell Ackoff, "[From Mechanistic to Systems Thinking](#)" (November 1993).

Fred Turner, *From Counterculture to Cyberculture* (Chicago: University of Chicago Press, 2006), pp. 11-38.

Ludwig von Bertalanffy, *General Systems Theory: Foundations, Development, Applications* (New York: George Braziller Inc., 1969), pp. 3-29.

Gregory Bateson, "Conscious Purpose Versus Nature" [1968] in *Steps To an Ecology of Mind* (Chicago: University of Chicago Press, 1972), 432-445.

Feb. 1

Peder Anker, "Buckminster Fuller as the Captain of Spaceship Earth" in *Minerva*, Vol. 45 (Oct., 2007), pp. 417-434.

Ervin Laszlo, *The Systems View of the World: The Natural Philosophy of the New Developments in the Sciences* (New York: George Braziller, 1972), pp. 3-27, 79-120.

O.W. Markley and Willis W. Harman, Eds., *Changing Images of Man* [1974] (Oxford: Pergamon Press, 1982), 17-40, 67-80, 99-121.

Week 5: The Place of the Human in the Earth System**RESEARCH PAPER PROPOSAL DUE****Feb. 6**

Arne Næss, "The Deep Ecological Movement: Some Philosophical Aspects" [1986] in *Deep Ecology for the 21st Century*, Ed. George Sessions (Boston: Shambhala Publications Inc., 1995), pp. 64-84.

Edgar Morin, *Homeland Earth: A Manifesto for the New Millennium* (Cresskill, NJ: Hampton Press, Inc, 1999), pp. 114-122, 143-149.

Stuart Kaufmann, *At Home in the Universe* (Oxford: Oxford University Press, 1995), pp. 3-33, 270-271, 296-304.

Douglas Rushkoff, *Survival of the Richest: Escape Fantasies of the Tech Billionaires* (New York: W.W. Norton & Co., 2022), 156-189.

Feb. 8

Lynn Margulis, *The Symbiotic Planet* (London: Orion Books, 1998), pp. 4-12, 141-161.

Donna Haraway, *Staying with the Trouble* (Durham, NC: Duke University Press, 2016), pp. 58-98.

Bruno Latour and Nikolaj Schultz, *On the Emergence of an Ecological Class* (New York: Polity, 2022), pp. 1-54.

Week 6: Rethinking the Human as an Information Process**Feb. 13**

Vannevar Bush, "[As We May Think](#)" in *LIFE* (September 10, 1945), pp.112-124.

Julian Huxley, "Transhumanism" [1957] in *Knowledge, Morality, and Destiny* (New York: Mentor Books, 1960), pp. 1-16.

Manfred Clynes and Nathan Kline, "Cyborgs and Space" in *Astronautics* (Sept., 1960), pp. 26, 74-76.

F.M. Esfandiary, *Up-Wingers* (New York: The John Day Company, 1973), pp. 1-17, 129-142.

Feb. 15

Jeremy Rifkin, *Algeny* (New York: Penguin Books, 1984), pp. 206-255.

Evelyn Fox Keller, "The Body of a New Machine: Situating the Organism Between Telegraphs and Computers" in *Refiguring Life* (New York: Columbia University Press, 1995), pp. 79-118.

Nick Bostrom, "Why I Want to Be a Posthuman When I Grow Up" in *The Transhumanist Reader*, Eds. Max More and Nitasha Vita More (New York: John Wiley & Sons Inc., 2013), pp. 28-53.

Week 7: Transcending the Human**Feb. 20**

K. Eric Drexler, *Engines of Creation: The Coming Era of Nanotechnology* (New York: Anchor Books, 1986), pp. 3-20, 53-98.

Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge, MA: Harvard University Press, 1988), pp. 1-9, 100-146.

Hans Moravec, "Pigs in Cyberspace" [1997] in *The Transhumanist Reader*, pp. 177-181.

Freeman Dyson, *Infinite in All Directions* (New York: Harper and Row, 1988), pp. 96-121, 270-299.

Feb. 22

T. Bell and Max More, [Extropy](#), Issue 1 (1988).

Max More, "[The Extropian Principles: A Transhumanist Declaration, Version 3.0](#)" (1998).

Max More, "The Philosophy of Transhumanism" and "The Proactionary Imperative" in *The Transhumanist Reader*, pp. 3-16, 258-267.

Erik Davis, *TechGnosis: Myth, Magic & Mysticism in the Age of Information* (Berkeley, CA: North Atlantic Books, 2015), pp. 103-132.

Week 8: Approaching Superintelligence and the Singularity

Feb. 27

- I.J. Good, "Speculations Concerning the First Ultraintelligent Machine" in *Advances in Computers*, Vol. 6 (1965), pp. 31-43, 78-80.
- Vernor Vinge, "Technological Singularity [1993, 2003]" in *The Transhumanist Reader*, Eds. Max More and Natasha Vita-More (Malden, MA: John Wiley & Sons, Inc, 2013), pp. 365-375.
- Ray Kurzweil, *The Singularity Is Near* (New York: Penguin, 2005), pp. 1-30.
- Max Tegmark, *Life 3.0: Being Human in the Age of Artificial Intelligence* (New York: Alfred A. Knopf, 2017), pp. 22-55.
- Erik J. Larson, *The Myth of Artificial Intelligence* (Cambridge, MA: Harvard University Press, 2021), 33-49.

Feb. 29

- James Lovelock, *Novacene* (Cambridge, MA: The MIT Press, 2019), pp. 104-130.
- Eliezer Yudkowsky, "[The Low Beyond](#)" (1996) and "[The Singularity Principles](#)" (2001).
- Eliezer Yudkowsky, "[Pausing AI Developments Isn't Enough. We Need to Shut it All Down](#)" in *TIME* (March, 2023) and "[Will Superintelligent AI End the World?](#)"
- Meghan O'Gieblyn, *God Human Animal Machine* (New York: Anchor Books, 2021), pp. 12-57.

Week 9: Conquering the Cosmos

RESEARCH PAPER DRAFT DUE

Mar. 5

- Freeman Dyson, "Search for Artificial Stellar Sources of Infrared Radiation" in *Science*, Vol. 131, No. 3414 (June 3, 1960), p. 1667.
- Nick Bostrom, *Superintelligence: Paths, Dangers Strategies* (Oxford: Oxford University Press, 2016), pp. 63-126, 314-320.
- Seth Baum et al, "Long-Term Trajectories of Human Civilization" in *Foresight*, Vol. 21, No. 1 (2019), pp. 53-83.

Mar. 7

- Max Tegmark, *Humanity 3.0* (New York: Alfred A. Knopf, 2017), pp. 161-248.

Week 10: What Is Humanity and Where Is It Going?

Mar. 12

- Daniel Deudney, *Dark Skies: Space Expansionism, Planetary Geopolitics, and the Ends of Humanity* (Oxford: Oxford University Press, 2020), selections.

Mar. 14

- Closing Discussion

MARCH 19: FINAL PAPER DUE