

THE END OF NATURE AND THE POSTHUMAN FUTURE

Prof. Maria Antonaccio
Religious Studies Department
Bucknell University

Course Description

From the earliest use of fire and flint knives to the most recent breakthroughs in computers, robotics, and genomics, humans have always made use of technologies to sustain and enhance life. Yet we are increasingly aware that technology can harm and endanger life as well. The power of modern technology to alter the conditions and even the definition of life, for both good and ill, is evident in recent environmental and bioethical developments.

Environmentalists have warned that climate change, species extinctions, and a host of other planetary transformations are signs that human beings have caused “the end of nature.” Although nature has not *literally* ceased to exist, it has lost its independence from human society and is now increasingly subject to human technological power. Similarly, signs of “the end of nature” are evident in the realm of biotechnology, where innovations such as genome editing and synthetic biology are transforming previous notions of nature and human nature. If human traits and capacities can be altered or enhanced through biotechnologies, can we still speak of human nature as something “given” or is it now something “chosen”? If genes or cells can be fabricated in a laboratory, are they still “natural” or are they “artificial”? Under the pressure of such questions, previous notions of human nature are giving way to the “posthuman” and “transhuman” futures.

This course will address three areas of inquiry about the role of technology in the “ending” of nature: 1) What human ideals and aspirations are driving recent technological developments in the environmental and bioethical realms? What qualities of life and what visions of the future do these technologies hope to promote and advance? 2) What are some of the paradoxes of technology as a central human activity and aspiration? What does it mean for technology to sustain, enhance, but also endanger life? 3) What norms should guide technological manipulations of the environment and human nature? What limit concepts can credibly regulate human technological power at a time when previous limit concepts (such as “nature” or “God”) have lost credibility?

Course Goals

The primary objectives of the course are the following: 1) to understand the role of technology in shaping and expressing the human aspiration to sustain and enhance life; 2) to understand the ethical import of modern technologies in relation to our conceptions of nature and human nature; 3) to assess the role of limit concepts in guiding the appropriate use of technology in a post-theistic and postnatural era.

This course is designed to fulfill the learning goals of the **Arts & Humanities** requirement of the CCC (Common Core Curriculum). The course will provide students with the skills needed to:

- interpret texts with awareness of the texts’ basic orientation in the world (historical, philosophical, religious, linguistic, etc.).
- construct arguments and evaluate canons using the evidence and tools of critical analysis appropriate to the object of inquiry.
- develop an appreciation of the fundamental ambiguities and complexities involved in all human attempts to answer questions about knowledge, values, and life.

In addition, the course is designed to fulfill the requirements of the **Environmental Connections** requirement of the CCC. The course will provide students with the skills needed to:

- analyze, evaluate, and synthesize complex interrelationships between humans and the natural world.
- evaluate critically their personal connections to the natural world in one of the following ways: reasoning about ethical issues, directly experiencing the natural world, connecting to their community, or relating individual choices to larger societal goals.
- apply knowledge of the physical, cultural, or social connections between humans and the natural world, according to their interests and disciplinary preferences.

Course Materials

The following books (currently under consideration) are required. Other readings will be posted electronically on Moodle.

Allen Buchanan, *Beyond Humanity? The Ethics of Biomedical Enhancement*
 Ronald Cole-Turner, *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement*
 Ronald Green, *Babies by Design: The Ethics of Genetic Choice*
 F. A. Hanson, *Technological and Cultural Tectonics: Shifting Values and Meanings*
 Noreen Herzfeld, *Technology and Religion: Remaining Human in a Co-Created World*
 Martin Reuss and Stephen H. Cutcliffe, eds., *The Illusory Boundary: Environment and Technology in History*
 Julian Savulescu and Nick Bostrom, eds., *Human Enhancement*
 Max More and Natasha Vita-More, eds., *The Transhumanist Reader*
 Shannon Vallor, *Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting*

ASSIGNMENTS

1. *Papers:* Students will write two analytical papers, approximately 1500-2000 words in length, on topics assigned by the instructor. The topics will be designed to engage your capacity to think critically and deeply about the major concepts and themes of the course. Guidelines, topics, and a grading rubric for what is expected will be posted on Moodle; tentative due-dates are listed on the syllabus. Instructions for electronic submission will be posted on Moodle.

2. *Collaborative discussion-leading:* Each student will pair with one other student on two occasions during the semester to lead a small group of your classmates in the discussion of a particular technology related to “nature” or “human nature” drawn from a news story, scientific journal, literary work, art object, film (etc.). Each pair of students will be responsible for selecting an appropriate example from a list of themes that will be provided, and then helping their classmates *analyze* and *interpret* the significance of the example using the conceptual tools of the course. Each pair of students will prepare a 1-2 page handout to help guide the discussion, which will be submitted to the instructor. The grade will be based on your collaborative, rather than individual, effort. Further guidelines will be forthcoming and a sign-up sheet for scheduling purposes will be circulated early in the semester.

3. *Final take-home exam:* The final exam is a comprehensive take-home writing exercise that will require students to apply the critical tools they have gained from the course materials to a selection of case studies that exemplify developments related to technology’s impact on “the end of nature” and/or “the posthuman future.” The exam will be due during finals week on a date assigned by the Registrar.

4. *Grading of each component:* The following percentages will be used to calculate your final grade. Evidence of consistent improvement and demonstrated effort over the course of the semester, as well as a serious effort to participate in class discussion, have the potential to raise your final grade in “borderline” situations.

Analytical Papers (2):	40% total (20% each)
Collaborative Discussion-leading (2):	40% total (20% per occasion)
Final Take-home Exam:	20%
	100%

ADDITIONAL REQUIREMENTS AND EXPECTATIONS

1. Completion of all assignments: It is essential that you complete *all* of the assignments for the course. *Students who do not hand in all assignments will not receive a passing grade in the course.*

2. Attendance: Your presence in class is important to the quality of class discussion and will be encouraged with an attendance policy. After the drop/add period, I will circulate a sign-in sheet for the purposes of taking attendance during every class session. Only excused, documented absences are acceptable (e.g., serious illness, family or personal emergencies). In addition, athletes should alert the instructor to scheduled competitions that conflict with class time. *Students who have more than two absences during the semester risk a reduction in their final grade, at the instructor's discretion.*

3. Preparation for class: Your success in this course depends on the effort you put in to learning the materials. At a minimum, you are expected to complete all assigned readings prior to the class for which they are assigned. You should come to class prepared to discuss the readings or raise questions, and to listen and respond thoughtfully to your classmates' comments. *Obviously, assigned readings should be brought to class so that they can be referred to during discussion. Electronic readings from Moodle should be printed out. If you do not bring the readings, you risk being counted "absent" for that day.*

4. Careful reading of texts: Reading college-level material requires your full attention. *Please do not try to multi-task while reading.* Instead, you should make every effort to *minimize distractions and focus on the content* as much as possible.

5. Class Participation: Although there is no formal participation grade, making an effort to contribute to class discussion is essential to your learning and success in the course. It also has the benefit of signaling to me the seriousness of your engagement with the materials. For those who find it difficult to speak up in class, coming to my office hours to ask questions or to discuss the course content are other ways you can participate.

6. Bucknell University expectations for academic engagement:

The Committee on Instruction of the College of Arts & Sciences has recommended the following expectations for student academic engagement at Bucknell:

"Courses at Bucknell that receive one unit of academic credit have a minimum expectation of 12 hours per week of student academic engagement. Student academic engagement includes both the hours of direct faculty instruction (or its equivalent) and the hours spent on out of class student work. Half and quarter unit courses at Bucknell should have proportionate expectations for student engagement."

7. Academic Responsibility: Academic dishonesty or misconduct is unacceptable and is taken very seriously at Bucknell. *All students are expected to follow Bucknell's official policy on academic responsibility.* Go to <http://www.bucknell.edu/AcademicResponsibility> and make sure to read all the information on the drop-down menu thoroughly. Please pay particular attention to the section titled "For Students," which defines plagiarism and the related error of paraphrasing and suggests ways to avoid them. Even mature and well-known scholars have sometimes fallen into the trap of paraphrasing another scholar's work without properly citing the source. Be on guard against these and other forms of dishonesty. *Any student who is found to have engaged in this type of misconduct will be referred to the Board of Review and subjected to appropriate penalties.*

8. Bucknell University Honor Code:

As a student and citizen of the Bucknell University community:

1. I will not lie, cheat or steal in my academic endeavors.
2. I will forthrightly oppose each and every instance of academic dishonesty.
3. I will let my conscience guide my decision to communicate directly with any person or persons I believe to have been dishonest in academic work.
4. I will let my conscience guide my decision on reporting breaches of academic integrity to the appropriate faculty or deans.

OTHER POLICIES AND LOGISTICS

1. *Due dates and extensions:* All written assignments should be handed in by the deadline. An extension may be granted in rare cases (e.g., serious illness, family emergency). Please consult with me preferably at least 24 hours ahead of time if you find yourself in these circumstances, or if you are facing any other issues that seriously jeopardize your ability to hand your work in on time.

2. *Moodle:* In addition to the books purchased for the course, other reading materials are posted electronically on Moodle, where you will also find the syllabus, paper topics, assignment guidelines, grading rubrics, and other information. I will also use Moodle to post announcements or reminders. Please let me know via email if you have any trouble accessing the materials electronically.

3. *Cell phones, Blackberries, laptops, etc.:* The use of cell phones, laptops, and other electronic devices are generally not permitted during class. Please turn off all such devices before coming to class or leave them at home. Exceptions to this policy may be made by the instructor for compelling reasons only; please see me if you have special needs or circumstances that require the use of a laptop.

4. *Basic Courtesy:* Please avoid interrupting class by *arriving on time* and by *using the restroom before coming to class*. If you find it necessary to leave the room for any reason, please have the courtesy to do so as quietly and unobtrusively as possible.

5. *Accommodations:* Any student who may need an accommodation based on the impact of a disability should contact me privately to discuss specific needs.

6. *Asking for help:* This is a course in the Humanities. A humanistic education places the highest value on developing students' quality of mind, cultivating their intellectual openness to new ideas and perspectives and their eagerness to engage difficult questions. As a professor of the Humanities, I am here to support you in developing to your full intellectual potential and achieving high academic standards. Feel free to consult with me if I can be of assistance. I am available during office hours or by appointment to discuss any matter related to the course. Although I am willing to answer *brief* inquiries via email, for most matters I generally prefer meeting with you face to face.

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CLASS SCHEDULE AND READING ASSIGNMENTS

PART I: INTRODUCTION

Week 1: Ethics and the Question of Technology

Readings:

Hans Jonas, "Technology and Responsibility: Reflections on the New Task of Ethics"
 F. A. Hanson, "The Technological Society"
 Langdon Winner, "Technologies as Forms of Life"
 Arnold Pacey, "Technology: Practice and Culture"

Weeks 2-3: Technology, Transformation, and the Human Vocation: Classic Narratives

Readings:

Book of Genesis, chaps 1-3, 6-9
 Plato, selections from *The Timaeus*
 Theodore Hiebert, "The Human Vocation: Origins and Transformations in Christian Traditions"
 Paul, Letter to the Romans
 Irenaeus of Lyon, *Against Heresies*
 Jean-Pierre Vernant, "The Myth of Prometheus"
 Carol Dougherty, "The Trickster"
 Robert Pogue Harrison, "The Vocation of Care"

PART II: THE END OF NATURE?

Weeks 4-5: Climate Change as Event and as Metaphor

Readings:

Bill McKibben, "The End of Nature"
 William Cronon, "The Trouble with Wilderness; or Getting Back to the Wrong Nature"
 Erle C. Ellis, "Op-Ed: Stop Trying to Save the Planet"
 Emma Marris, "Weeding the Jungle"
 Paul Crutzen, Will Steffen, and John McNeill, "The Anthropocene, "Are Human Beings Now Rivalling the Great Forces of Nature?"
 Paul Wapner, "The Great Vanishing: Into the Postnature World"

Weeks 6-7: Nature, Technology, and the Debate over Geoengineering

Readings:

Martin Reuss and Stephen H. Cutcliffe, *The Illusory Boundary: Environment and Technology in History* (selections)
 Philip Cafaro, "Avoiding Catastrophic Climate Change: Why Technological Innovation is Necessary but Not Sufficient"
 Clive Hamilton, "Ethical Anxieties about Geoengineering"
 Ben A. Minteer and James P. Collins, "Ecosystems Unbound: Ethical Questions for an Interventionist Ecology"
 Forrest Clingerman, "Redeeming the Climate: Investigating a Theological Mode of Geoengineering"

PART III: THE END OF HUMAN NATURE?

Week 8: Human Nature in an Age of Biotechnology

Leon Kass, "The New Biology: What Price Relieving Man's Estate?"
 _____, "Preventing a Brave New World"
 Allen Buchanan, "Breathless Optimism, Hysterical Loathing"
 Tamar Sharon, "Introduction" to *Human Nature in an Age of Biotechnology*

Week 9-10: Genetic Engineering

James M. Gustafson, "Genetic Engineering and the Normative View of the Human"
 Frances Fukuyama, "Genetic Engineering"
 Ronald Green, *Babies by Design: The Ethics of Genetic Choice*

Week 11: Therapy vs. Enhancement: A Contested Distinction

Readings:

Eric Juengst, "What Does Enhancement Meant?"
 United States President's Council on Bioethics, "Beyond Therapy"
 Ronald Cole-Turner, ed., *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement* (selections).
 Allen Buchanan, *Beyond Humanity? The Ethics of Biomedical Enhancement* (selections)
 Julian Savulescu and Nick Bostrom, eds., *Human Enhancement* (selections)

Week 12-13: Transcending the Human Condition? The Transhumanist Challenge

Readings:

Nick Bostrom, "Why I Want to be Posthuman When I Grow Up"
 _____, "The Transhumanist Manifesto"
 Max More and Natasha Vita-More, eds., *The Transhumanist Reader* (selections)
 Ronald Cole-Turner, ed., *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement* (selections)

Weeks 14: Technology and the Good Human Life: A Future Worth Wanting?

Readings:

Shannon Vallor, *Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting* (selections)