HIST 201S, Topics in History of Science, Technology & Medicine

Fall 2016:

VISIONARY BIOLOGY
Between Science and Science Fiction

SYLLABUS

Professor: Elena Aronova (earonova@history.ucsb.edu)
Class Location: HSSB 4041
Class Times: Monday, 10:00 AM-12:50 PM
Office Location: HSSB 4215
Office Hours: Thursday, 15:30-17:30 PM

COURSE DESCRIPTION

The history of science has consistently disregarded the history of science fiction. Yet, the history of scientific utopia is not only fascinating and intriguing, it provides a vantage point from which to ask such questions as:

- What is the role of imaginaries and visions in science?
- Is there a connection between science fiction and other forms of scientific speculation, as well as social and political imaginaries?
- Does examining scientific fictional visions give us unique insight into the values and priorities of different historical moments?

Through a close contextual reading of the fantastic and fictional visions of humanity’s future, which were inspired by the advance of the biological sciences, we will explore how biological sciences have provided the scientific underpinning for societal dreams, and conversely, how scientists used the imagery proposed by fiction to sustain its discourse, challenge its findings or launch new lines of research. Fiction, thanks to its heuristic function, participated in the transformation of scientific activity and reconfigured science and power relations. Through exploring the relation between fiction, science and power we also will trace the idea of progress and its meanings in different period and places. Utopias are rooted in the reality of their time and reveal its concerns. What then are the concerns they convey? How can thinking about past futures, including fictional ones, redirect contemporary visions of the future? And, finally, are biological/scientific utopias a particular kind of utopia? How do biological utopian (or dystopian) visions relate to/compare with other ways of defining utopia, i.e. in classic religious or political utopia such as Plato’s The Republic, Thomas More’s Utopia, or Francis Bacon’s The New Atlantis?
COURSE REQUIREMENTS

Each week we will read three kinds of sources:

- A fiction
- A non-fiction, including scientific articles, op-eds, and polemical writings
- Different interpretations, including critiques and historical takes on each week’s themes

Most novels and some other readings assigned for this course are accessible on-line, all readings that are not accessible on-line will be available as PDF’s on Gauchospace.

Each week, in the first part of the seminar, a team of 3 students will make presentations on this week’s readings. One student—the biographer—will familiarize the class with the biographical details of the authors whose visionary work (both fictional and non-fictional) is discussed. Another student—the historian—will provide the class with the historical contexts of the visionary writings. And the third student—the commentator—will supply the class with comments, interpretation and critique of the main ideas expressed in the visionary writings (both fictional and non-fictional) discussed in this week. In the second part of the class, we will have a general discussion of the readings coordinated by the instructor with the help of the presenters’ team.

Due to the heavy reading load there will be no final paper, but there will be several oral and written assignments:

1) Oral reports. Each report should be carefully prepared and delivered in 10-12 minutes. It should familiarize class members with the identity and background of the authors, the readings’ subject, structure, and central theme(s), using carefully-chosen concrete examples, quotations, pictures, and diagrams, as appropriate. The purpose of the reports is to set-up and frame discussion relating to the week's central topic/figure. Presenters should also bring the hard copies of one-page list of discussion points for the members of the class, to be used to open up the discussion in the second part of the class. Discussion points may include criticisms, disagreements, support, and queries of the readings.

Depending on the size of the class, each student will have to present 4 to 6 times during the quarter. The roster of the reports and the teams will be scheduled on the first day of class.

2) Analysis of the readings: Each week (with the exception of the 1st week of the course) every student will be required to hand in a one page paper analyzing the readings and raising two “big questions” relevant to the theme of class discussion. The paper should be analytical, not simply a summary of the readings. Due by email to the entire class by midnight before our meeting.

Computer/tablet use:
I understand that many (if not all) of you use laptops, iPads, etc. to take notes in the seminars. Computers and other devices are welcome in the first part of this class. However, in the second, discussion, part, I ask to turn off and put away all electronic devices. Taking notes in longhand rather than on laptop is more effective for learning experience, as experimental psychologists Mueller and Oppenheimer argue, and is more conducive to engaging in a conversation with your fellow classmates. Give this a try as an experiment.


SCHEDULE OF READING

09/26/2016
WEEK 1: Introduction: frames, stakes, methodologies

Readings:

H. Bruce Franklin, “The Science Fiction of Medicine,” in No Cure for the Future: Disease and Medicine in Science Fiction and Fantasy, ed. by Gary Westfahl and George Slusser (Greenwood Press, 2002), pp. 9-22

James Secord, Visions of Science: Books and Readers at the Dawn of the Victorian Age (Oxford, 2014), pp. viii-x; 1-23


Recommended*:


* The readings assigned for the 1st week (including “further reading”) provides the general framing for the course, therefore should be read thoroughly and referred to throughout the course. You may postpone reading the essays assigned under “further reading” in week 1 until later in the course but it is essential to read these in the first weeks of the course.

10/03/2016

**WEEK 2. Darwin, Evolution, and the Visions of the Future in Victorian Britain**

**Fiction:**

H. G. Wells, *The Time Machine* [1895]: [Link]

**Non-fiction**


T. H. Huxley, “Capital – The Mother of Labor” [1890]: [Link]

**Historical context and interpretations:**


**Recommended:**

Anna Mayer and Christopher Lawrence’s “Introduction,” and Anna Mayer’s essay in *Regenerating England: Science, Medicine and Culture in Inter-War Britain*, ed. by Christopher Lawrence and Anna Mayer (The Welcome Institute Series in the History of Medicine, 2000), pp. 1-24; 67-106

10/10/2016

**WEEK 3. The Response to Darwin Outside Britain**

**Fiction:**

A. Bogdanov, *Red Star* [1908], [Link]

**Non-fiction**
Ernst Haeckel, *The Natural History of Creation* [1876], chapter I, XI, and XII: [Link]

**Historical context and interpretations:**


Robert Richards, *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago, 2008), selections on GauchoSpace

**Further reading:**


10/17/2016

**WEEK 4: “New” Biology and its Visionaries**

**Fiction:**

J. B. S. Haldane, *Daedalus or Science & the Future* [1923]: [Link]

**Non-fiction**

Bertrand Russell, *Icarus, Or The Future of Science* [1924]: [Link]

J.B.S. Haldane, “Human Biology and Politics” [1934]: [Link]

**Historical context and interpretations:**


**Recommended:**

10/24/2016  
WEEK 5. Brave New World  

Fiction:  

Aldous Huxley, *Brave New World* [1932], any edition, available online: [Link]

Non-fiction:  

H.J. Muller, *Out of the Night: A Biologist’s View of the Future* [1935], chapters III and VII

Historical context and interpretations:  


Peter J. Kuznick, *Beyond the Laboratory: Scientists as Political Activists in 1930s America* (Chicago, 1987), pp. 106-170

Harold Bloom, *Aldous Huxley’s Brave New World* (Chelsea house Publishers, 2003), selections TBD

10/31/2016  
WEEK 6. The Scientific Futures of John Desmond Bernal  

Fiction:  


Non-fiction:  

J. D. Bernal, “The Social Function of Science,” *The Modern Quarterly* (1938), [Link]

Historical context and interpretations:  

Andrew Brown, *J.D. Bernal, The Sage of Science* (Oxford, 2005), chapters 3 & 4


11/07/2016
**WEEK 7: Controlling Human Nature: A Behaviorist Utopia**

**Fiction:**

B.F. Skinner, *Walden Two* [1948], any edition

**Non-fiction**

Aldous Huxley, *Brave New World Revisited* (Harper & Row, 1958), [Link]

Hudson Hoagland, “Potentialities in the Control of Behavior,” *Man and His Future* (CIBA Foundation, 1963), pp. 299-314


**Historical context and interpretations:**


Hilke Kuhlman, *Living Walden Two. B. F. Skinner's Behaviorist Utopia and Experimental Communities* (2005) (available online: [Link])

11/14/2016
**WEEK 8: DNA and Bioengineering the Future**

**Fiction:**

Michael Crichton, *Jurassic Park* (Random Century, 1991), full text online: [Link]

**Non-fiction**


**Historical context and interpretations:**


11/21/2016

**WEEK 9: Cyborgs, Transhumanist Imaginations, and Posthumanist frames**

**Fiction:**


**Non-fiction**

Manfred Clynes, “Cyborgs and Space,” *Astronautics* (1960) [Link]


**Historical context and interpretations:**


Andrew Pickering, “The World, the Flesh and the Devil: Varieties of Posthumanism from J. D. Bernal to STS,” paper presented at the workshop *Varieties of Posthumanism: Policy as Practice and Performance*. University of Exeter, 6 March 2013 (available online: [Link])
Recommended:

Marie O’Mahony, Cyborg: The Man-Machine (Thames & Hudson, 2002)


11/28/2016

WEEK 10. The Reinvention of Time in the History of Science, and Beyond

Fiction:

Naomi Oreskes and Erik M. Conway, The Collapse of Western Civilization. The View From the Future (Columbia University Press, 2014), full text available online: [Link]

Non-fiction


Analytical frames:


Further readings:

Browse: Limn #3 on “Sentinels” http://escholarship.org/uc/item/0xq1t67m