

HISC 114: The Darwinian Legacy
(or, Genes, Sex and Death)

Professor Naomi Oreskes

History Department HSS 6086A, tel: 534-4695

Class hours: T Th 2:20-3:40, Peterson 102

Office Hours: Mondays 1:30-3:30 p.m., or by appointment
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Synopsis Scientific knowledge has transformed life in the twentieth century from birth to death. Nowhere is this more so than in the interpretation of Darwin's theory of the origin of species through natural selection. In this class, we will study the work of Charles Darwin, and a set of scientific, technological and cultural developments that may be called "The Darwinian legacy": evolutionary theory; genetics, eugenics, and racial hygiene; biology and birth control; environmental science and chemical pesticides; prenatal diagnostics and biotechnology. In each of these domains, we will consider how scientific understandings have been culturally interpreted and ramified through complex aspects of human life. How has the Darwinian Legacy affected the way we think about who we are and might be? How has it affected our view of our selves in relation to the natural environment? How has it framed the way we approach our most intimate decisions about sex and death?

Required books, available at UCSD bookstore, from most on line booksellers, and on reserve at Geisel Library

Charles Darwin. *On the Origin of Species by Natural Selection* (facsimile of the First Edition), Harvard University Press.

Malthus, Thomas. *An Essay on the Principle of Population*, Any edition.

Diane B. Paul, *Controlling Human Heredity*, Humanities Press, 1995.

Robert Proctor, *Racial Hygiene: Medicine Under the Nazis*, Harvard University Press, 1989.

Elizabeth S. Watkins, *On the Pill* (Baltimore: The Johns Hopkins University Press, 1998).

Rachel Carson, *Silent Spring*, any edition.

Grading Two essay assignments (5 pages each) on questions that I will provide based on the readings (20% each), an in-class midterm (30%), and a final (30%).

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Class schedule and assignments

All readings other than the required books are in electronic reserves.

Part I. Evolution, Environment, and Inheritance

Charles Darwin's theory of the origin of species through natural selection is the most famous scientific idea of the nineteenth century, perhaps of all time, but at the end of the nineteenth century, few scientists accepted it. The problem was inheritance. Breeding showed inheritance to be a conservative process, and this raised doubts about the efficacy of natural selection in creating new species. So why did it become such a powerful theory? What problems did it solve? What questions did it answer?

3/29 Fossils, species and extinction: Mayr, "Evolution before Darwin."

3/31 The theory of evolution by natural selection: Darwin, *The Origin of Species*, pp. 11-14, 53-62, 63-90, 98-100, 371-374.

4/5 Natural v. sexual selection, the application to humans: Darwin, *Descent of Man*, pp. 496-511, 567-583, and 867-875.

4/7 No class, Professor at conference at Harvard.

Read: Malthus, *Essay on Principle of Population*.

Essay assignment #1: Write a brief essay summarizing the argument in Thomas Malthus's *An Essay on the Principle of Population*, and explain how it informs Darwin's theory of the Origin of Species by Natural Selection. Would Darwin's theory work without Malthus? Why or why not? Do you think Malthus was right (think about world population today)?
Due in class 4/12.

Part II. Selective Breeding, Eugenics, and Racial Hygiene

Darwin based his theory on an analogy with animal breeding, so it stood to reason that humans might be improved through selective breeding, too. This idea was pursued with great vigor at the turn of the century. At the heart of the eugenics movement was the belief that society had both the right and the responsibility to screen out "defectives" to improve the fitness of the race.

4/12 The eugenics program: Galton, "Hereditary talent and character."

4/14 Eugenics in America: Allen, "The Eugenics Record Office," and Paul, *Controlling Heredity* pp. 1-135.

4/19 From eugenics to euthanasia: Proctor, *Racial Hygiene*: Begin reading.

4/21 From "hygiene" to holocaust: Proctor, *Racial Hygiene*: Finish remainder of book.

4/26 Mid-term exam in class. Short answers and an essay.

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III. From Eugenics to Birth Control

After World War II, eugenics was morally discredited, and the presumptions behind it showed to be flawed, in any case. But this did not mean that people lost interest in the "Malthusian problem." On the contrary, they addressed it with renewed vigor, focused now on population control rather than individual control. Both feminists and population control advocates hailed the first chemical contraceptives as a huge advance; only gradually did the potentially harmful effects of oral contraceptives emerge.

4/28 The evolutionary synthesis and decline of eugenics: Allen, "The convergence of disciplines."

5/3 The eugenic origins of the birth control movement: Sanger, *Pivot of Civilization*; Borell, "Controlling Population Growth." Allen, "Old Wine in New Bottles."

5/5 The contraceptive pill: Watkins, pp. 1-137; Talbot, "Should doctors prescribe birth control pills?"

5/10 The Pill and the Sexual Revolution: Morantz, "The Scientist as Sex Crusader," Pearce, "Cultural conflicts."

IV. From ENOVID to Silent Spring

Fears about the negative effect of chemical contraceptives coincided with an increasing awareness of the harmful effects of chemicals in the natural environment. The most famous alarm call was Rachel Carson's 1962 best-seller, *Silent Spring*. But just as doctors were reluctant to acknowledge that contraceptive pills might do harm, scientists and economists were reluctant to admit that DDT—which had stopped typhus and malaria and fomented the green revolution—might have unintended consequences. And the clearest of these harms were on reproductive capacities.

5/12 The problem of DDT: Carson, *Silent Spring*, 1-152

5/14 DDT continued: Carson, *Silent Spring*, 153-297; and selections from PSAC report (hand-out).

5/17 The military origins of DDT: Russell "The strange career of DDT."

5/19 No lecture. Professor at conference at London School of Economics.
Work on essay assignment #2.

Essay assignment #2

In *Silent Spring*, Rachel Carson presents the case against DDT. Summarize her main arguments and evidence. If Carson was right—and the president's Scientific Advisory Committee concluded that she was—then why did some scientists think

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DDT was safe? What counter-arguments were made against her claims? Why did they fail? **Due in class 5/24.**

IV. **Reproduction Revisited: From fertility to infertility and “perfect” babies**

Margaret Sanger thought effective contraception would free women to live life as they chose, but technology sometimes complicates rather than clarifies choice. Is there a “right to reproduce”? Is it ethical to abort a fetus with an undesirable genetic characteristic, or to use stem cells to create perfect children? Are pre-natal diagnostic technologies re-introducing the weeding out of “defectives” under the rubric of freedom and choice? Is this once again old wine in new bottles?

5/24 Readings from *The Technological Woman*; and Rothman, “The meanings of choice.”

5/26 Kishwar, “Deficit of Women in India.”

5/31 Reading: Maienschein, *Whose view of life?* pp TBA.

6/2 Reading: Maienschein, pp TBA.

Final exam, as determined by the university registrar

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