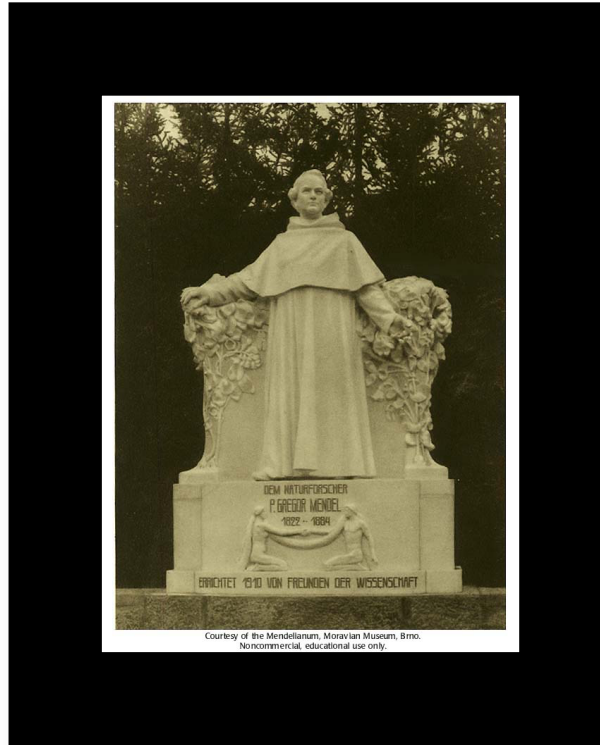


HIS 3935/ZOO 4926, FALL 2022

Genetics and the Human Imagination



Professor Vassiliki Betty Smocovitis

Fall 2022

Tuesdays Periods 10-E1 (5:10pm-8:10pm) Bartram 211

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DESCRIPTION OF COURSE

Although questions about heredity and patterns of inheritance have been asked since antiquity, answers remained unsatisfying until the mid-late 19th century when practical breeders turned their attention to the subject and began to apply scientific methods such as quantification—and the newer statistics—not just to describe, but to also trace patterns of inheritance in animals and plants. The pivotal year here is 1866, when a fairly obscure Augustinian monk named Gregor Johann Mendel, first published an important scientific paper that laid the foundations for what became the modern science of heredity. Titled “Experiments in Plant Hybridization,” (in German, “*Versuche über Pflanzen-Hybriden*”), the paper languished in obscurity, for the most part, until the year 1900, when three individuals independently read it and “rediscovered” Mendel’s work. Officially named “genetics” in 1905, the new science of heredity that reinvented him as the “founding father” was meant to evoke and emulate exact sciences like physics and mathematics. Following the “rediscovery,” the

scientific study of heredity literally exploded in a range of international contexts and reset cultural norms, transformed institutions, and set in motion new policies in health care, education, and even immigration, at the same time that it dug into more exacting details about the precise mechanisms and the transmission of traits in a diverse range of organisms. As a promising science associated with this enormous transformation of society, it also captured the human imagination, giving rise to a stunning assortment of cultural expressions, from literature, to art, film, theater, and even to architectural forms. This course, taught on the occasion of the 200th anniversary of the birth year of Gregor Mendel, aims to get at all this. It is designed to examine the life, work, and legacy of this obscure Augustinian monk, especially as it unfolded in the twentieth century, and to understand the way that his work, and the work of other geneticists intersected and continues to intersect with popular culture. One goal of the course is thus to learn something about the intellectual and cultural history of heredity after Mendel and how it unfolded as a rigorous science of genetics, but to also learn about the questionable uses to which it was put in the way of eugenics and social Darwinism. Another goal of the course is to appreciate how much science is shaped by cultural values, sometimes tacit while at other times explicit, but to also appreciate the corollary, namely that science itself can shape values that are embodied in popular culture. In short, the course aims to challenge the traditional boundaries between “elite” science and “popular” culture, and in so doing exploring the multi-directional traffic of influence between the two.

CLASS STRUCTURE AND FORMAT

This is an interdisciplinary three-credit course. It draws on a range of approaches from the history of science at the same time that it explores the intersection of genetics and popular culture. The course is divided into three parts. The first part of the course is formally structured relying on lectures, readings, and some formal in-class screenings (some feature films may be screened off hours at times to be determined). The second part examines the exchange of genetics and popular culture through readings of novels and films. Material from the first and second parts will be included in the take-home essay exam three-quarters of the way through the semester. The final part of the course is devoted to presentations based on original research by students into any medium to examine genetics and popular culture (topic to be cleared by instructor). The last two- three weeks of the semester will be devoted to student presentations of this research.

EVALUATION

Students are required to submit any six of seven reaction/response papers due on the dates assigned, usually the Monday before class at 12 pm (except for Nov. 1 when due Wednesday); these are worth 30 per cent of the total grade. Another 40 per cent of the grade is based on the take-home exam handed out two weeks in advance of the due date. The presentation and Powerpoint submitted are worth 20 per cent of the final grade and the final 10 per cent of the grade is based on attendance and class participation. Attendance is required; students may have no more than two absences. The take-home essay exam will be based on lectures and all the readings assigned to that date. It is cumulative and integrative in nature. Students will have choice between questions for the take home exam. These will be distributed in advance of the due date. The final take home examination will require essay responses for a total of up to 2,000 words for each question. For an explanation of UF grade scales please consult the following: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

REQUIRED READINGS

Historical Readings:

1. Robin Marantz Henig, *The Monk in the Garden*
2. Diane Paul, *Controlling Human Heredity*

Works of Fiction:

1. H. G. Wells, *The Island of Dr. Moreau*
2. Aldous Huxley, *Brave New World*
3. Michael Crichton, *Jurassic Park*
4. Kazuo Ishiguro, *Never Let Me Go*

SCREENINGS OF FILMS (TENTATIVE)

1. *The Black Stork/ Are You Fit to Marry?*
2. *Bill of Divorcement*
3. *The Island of Dr. Moreau*
4. *Jurassic Park*
5. *GATTACA*
6. *Never Let Me Go*



The course will be employing Canvas for its learning platform. Syllabi, readings, announcements and matters pertaining to this course will be found there

TENTATIVE SCHEDULE OF TOPICS AND READINGS ASSIGNED

Week One (Aug. 30): Introduction to Course

Part I: History of Genetics

Week Two (Sept. 6) : Mendel and His World

Reading: *The Monk in the Garden*, pp.1-173

Week Three (Sept. 13): Mendel and His World, Continued; Mendel, 1865

Reading and Discussion: Gregory Mendel, "Experiments in Plant Hybridization" (*pdf on Canvas*) **Reaction Paper #1 Due Monday 12 pm: *The Monk in the Garden* and *Experiments in Plant Hybridization***

Week Four (Sept. 20): The "Rediscovery," Classical Genetics, and the Rise of Molecular Biology

Reading: *The Monk in the Garden*, pp. 174-279.

Week Five (Sept. 27): Eugenics and Social Darwinism

Reading: Diane Paul, *Controlling Human Heredity*, pp. 1-72

<https://blog.newspapers.library.in.gov/the-black-stork-eugenics-goes-to-the-movies/>

Screening in Class and Discussion: *Are You Fit to Marry? The Black Stork:*

<https://www.youtube.com/watch?v=CEh2kz26T1k>

Week Six (Oct. 4): Eugenics and Social Darwinism

Reading: Diane Paul, *Controlling Human Heredity*, pp. 72-137

Screening in Class and Discussion: *Bill of Divorcement*

Reaction Paper #2 Due Monday 12 pm: *Controlling Human Heredity*, *The Black Stork*

Part II: Genetics and Popular Culture.

Week Seven (Oct. 11): Fictions and Perceptions of Scientists in History, Literature, Art and Film

Readings: Roslynn D. Haynes, "Whatever happened to the 'mad bad' scientist: Overturning the stereotype," *Public Understanding of Science* (2016) 25: 31-44 (pdf on Canvas).

Week Eight (Oct. 18): Science Fiction in the Wake of Mendel

Reading: H. G. Wells, *The Island of Dr. Moreau*

Home Screening: <https://archive.org/details/the-island-of-dr-moreau-1996>

Reaction Paper #3 Due Monday 12 pm: *Island of Dr. Moreau*

Week Nine (Oct. 25): Science Fiction and the 1930s

Reading: Aldous Huxley, *Brave New World*

Video: *Interview with Aldous Huxley by Mike Wallace:*

<https://www.youtube.com/watch?v=alasBxZsb40>

Reaction Paper #4 Due Monday 12 pm: *Brave New World*

Week Ten (Nov. 1): Genetic Determinism vs. Free Will

Home Screening: GATTACA

<https://www.youtube.com/watch?v=tzG3I7nMEks>

Reaction Paper #5 Due *Wednesday* 12 pm: GATTACA

Week Eleven (Nov. 8): Genetic Engineering Gone Awry

Reading: Michael Crichton, *Jurassic Park*

Screening in Class and Discussion: *Jurassic Park*

Reaction Paper #6 Due Monday 12 pm: Jurassic Park

Week Twelve (Nov. 15): Eugenics, Redux

Reading: Kazuo Ishiguro, *Never Let Me Go*

Screening in Class and Discussion: *Never Let Me Go*

Reaction Paper #7 Due Monday 12 pm: *Never Let Me Go*

Take Home Essay Questions Passed out in Class, Due November 29nd at 5pm

Part III: Original Research Presentations

Week Twelve-Fifteen (Nov. 22; Nov. 29): Class Presentations and Discussion

Week Sixteen (Dec. 6): Genetics and the Human Imagination: Conclusions

ORIGINAL RESEARCH PRESENTATIONS

Students may choose any medium desired whether it be film, music, advertisements, science fiction, architecture, art, etc—the sky’s the limit. This is your chance to explore your favorite cultural medium for scientific “content.” You are required to present your analysis to the class formally in a ten-minute Powerpoint presentation and provide the instructor with a print-out of the Powerpoint slides.

GUIDELINES FOR ASSIGNMENTS AND REACTION PAPERS

You are required to write six class assignments out of the possible seven designated on your syllabus. The goal of the assignment is to encourage you to engage critically the issues raised by the readings assigned, and to come to class prepared to engage in class discussion. I suspect that there will be some similarities in points of view, but each paper will (I hope) reflect the opinions of each reader and author. I cannot therefore give you a fixed set of standards or any formula for writing papers, though I can help refine the goals of the assignment and offer the following as guidelines.

Length: Each paper should be a minimum of 2 double-spaced typewritten pages (regular font or 12 points). You may extend the length of your paper to no longer than 3 pages.

Structure: This paper *is not a review* of the readings or any of the books assigned. Do not attempt to write a full-fledged description of the books. Somewhere in the text, you should,

however, summarize the “point” of the book. In other words, try to interpret the book in about one paragraph. This could be in your introduction. Your response or reaction to the texts should form the main body of the essay. Feel free to ask critical questions in these essays or point to any shortcomings in the readings or books. Keep in mind, however, that "critical" does not necessarily mean a negative assessment, but a rigorous and thoughtful analysis that brings into relief the issues raised by a particular subject.

Style: Please feel free to use the "I" personal form if you so wish; but try to avoid over-personalized responses. The essay should maintain a scholarly tone, but should also avoid pedantic, pretentious academic-eze. Do not overuse the passive voice; this is not a laboratory write-up, but a critical essay.

Suggestions for reading the texts: Please do not engage the readings as you would of standard textbooks in psychology, chemistry, biology, or astronomy. Jot down notes only when necessary; you do not need to highlight the text, although some notation or highlighting may help. Pay close attention to what the author is trying to achieve by reading the background material if it is included (e.g. preface, foreword, introduction etc.). Familiarize yourself with the author by doing additional research if necessary in the library (you may use any of the biographical sources in the science library or on the internet).

Include a bibliography or reference section if you have relied on additional sources. The formatting is flexible. Be judicious with your reliance on the internet as it is not peer-refereed information.



POLICIES Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Your voice matters. Thank you for serving as a partner in this important effort.

Honesty Policy

- All students registered at the University of Florida have agreed to comply with the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”
- In addition, on all work submitted for credit the following pledge is either required or implied: “*On my honor I have neither given nor received unauthorized aid in doing this assignment.*”
- If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at:
<http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

Accommodation for Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. Click here to get started with the Disability Resource Center: <https://disability.ufl.edu/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Counseling Services

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

UF Official Statement on COVID-19

In response to COVID-19, the following recommendations are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones. If you are not vaccinated, get vaccinated. Vaccines are readily available and have been demonstrated to be safe and effective against the COVID-19 virus. Visit one.uf for screening / testing and vaccination opportunities. If you are sick, please stay home. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 to be evaluated. Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

Please note: Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

---May the peas be with you--



