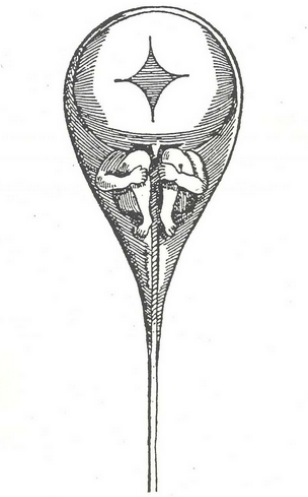
HistSci 130. Heredity and Reproduction

Fall 2014, Monday, 3-5 pm, Science Center 252
Professor Sarah S. Richardson
Office hours: Tuesdays, 10 am – 12 noon, Boylston Hall G26, by online sign-up



Homunculus in the sperm, Nicolaus Hartsoeker, 1694

Course overview

This seminar has two aims. First, it offers a long view of the intellectual history of the Western sciences of human heredity and reproduction from Aristotle to the mid-twentieth century. Participants will gain a broad understanding of the history of thought and scientific discovery at the nexus of heredity and reproduction. Class discussion will take up themes of the nature of scientific claims to knowledge; conceptions of gender, race, class, and sexuality in the science of heredity and reproduction; and interactions between biology, politics, and culture.

Second, the course offers a practicum in working with primary source historical texts. Participants will read foundational historical texts in direct encounter. Our discussions of classic philosophical, scientific, and literary sources will engage their substantive content as well as broad questions of methodology in the history of science and the pleasures and challenges of reading and interpreting such texts. We will also consider how the availability of digitized online versions of rare historical primary source texts is changing norms and practices of reading, teaching, and scholarly research in the history of science.

Ambroise Paré', 1573

Books

Required:

1. *The Works of William Harvey**
2. Paré, *On Monsters and Marvels**
3. Lamarck, *Zoological Philosophy**

Digital format available via the course website; hard copy optional:
1. Aristotle, *On the generation of animals**
2. Gilman, *Women and Economics**
3. Huxley, *Brave New World**
4. Malthus, *Essay on Population*
5. Firestone, *Dialectics of Sex*

*available at Harvard Coop

Course requirements

15%	Participation
10%	In-class presentation
15%	Weekly “questions for consideration” postings
60%	3 papers or multimedia projects, 1500-2000 words (~6-8 pp) or equivalent, worth 20% each

Overview of class schedule

Date	**Class Plan**
Sept. 8	Introductions & Course Overview
Sept. 15	The Seed and the Soil
Sept. 22	Teratology & Maternal Impressions
Sept. 29	Epigenesis & Houghton Library visit
Oct. 6	Preformationism
Oct. 10	*Assignment 1 due*
Oct. 13	*No class - Columbus Day*
Oct. 20	Breeding & Harvard metaLAB workshop
Oct. 27	Human Perfectability
Nov. 3	Race, Climate, & Environment
Nov. 10	Soft and Hard Heredity
Nov. 14	*Assignment 2 due*
Nov. 17	Eugenics
Nov. 24	Gender, Sexuality & Human Reproduction
Dec. 1	Reproductive Futurism
Dec. 12	*Assignment 3 due*

Assignment guidelines

1. Participation (15%)

Vigorous, attentive, and constructive participation in class discussion and respectful listening; demonstration of deep reading and thoughtful, engaged approach to course readings and concepts; 100% attendance expected except for illness; more than 2 absences for any reason, including illness, may result in being dropped from the class.

Ways to show participation beyond class discussion:

- attending office hours
- forming a study group
- taking class notes and sharing notes with everyone on the course website
- writing a response paper after attending a course-related talk or event
- visiting a course-related Harvard archive or collection and sharing it with the class
- reading one of the non-required recommended texts and providing a summary or outline on the course website
- writing down something a classmate said in class and reflecting on it on the class discussion board later
- emailing the professor a paragraph at the end of the class about a thing you learned and a thing you would like to ask
- peer-reviewing rough drafts of papers
- writing a self-assessment of your class performance so far and sharing with the professor
- meeting outside of class to plan a paper and/or to write a paper
- tweeting or blogging about the class
- designing a quiz that your class actually has to take about the reading for that day & going over the answers to the quiz with the classmates
- compiling a list of online resources related to a class topic
- sharing tips for accessing, reading, and taking notes on digitized historical texts
- hosting a film viewing, museum excursion, or other outing related to course themes
- other ideas?

2. In-class Presentation (10%)

Each session will begin with an informal student-led introduction to the text(s) under discussion. Please speak for ~5 minutes and provide a 1-page handout with key concepts, page references to key passages, and discussion questions to facilitate our session. The presenter will play an active role, alongside the professor, in facilitating the discussion that day. Advance meeting with the professor is recommended.

3. Weekly writing: Questions for Consideration (QFC's) (15%)
Due: 12 midnight, posted to the course site discussion forum the Sunday night before each class

QFC's provide an opportunity for you to formulate questions and responses to the readings prior to class. Format: Select a passage from the reading, cite it word for word, identify exactly where it occurs (e.g., page number), then ask a question about any aspect of the passage. Explain why you ask that question. Then, try to answer it in 300-500 words.

QFC's will be assessed based on the perceptiveness of your questions and the creativity of your proposed answers – not whether they are "correct." We will refer to your QFC's in class discussion. They will be evaluated in three batches alongside your three essay assignments.

Requirements:

- Post at least one QFC by 12 midnight on Sundays before each class
- 300-500 words
- You may skip 1 post with no consequences for your grade
- Be active in the discussion forum and respond to others' posts. These additional postings need not conform to length/content requirements of the required posts.

4. Written or Multimedia Essays (20% each)

Three 1500-2000 word (~6-8 pp) written *or* multimedia essays (podcast, short film, cartoon strip, or other – see professor for guidelines) are required for this class. These are analytical essays allowing considerable creative freedom as long as you advance a well-structured argument using the materials provided by this course. There are three paper assignments. You can complete them in any order.

1. Two texts in dialogue

   Pick any two primary source historical texts included in the required or recommended readings for this course. Charitably explicate the aims of each text and craft a creative analytical essay comparing and contrasting them. You might consider their methodologies, argumentative strategies, rhetoric, substantive arguments and conclusions, and/or intended audiences. A successful essay will evince how, when placed in dialogue, these two texts can help illuminate each other.

2. "How to read this text"

One of the objectives of this course is to appreciate the challenges of reading difficult primary source texts in the history of science from periods other than our own. Pick any one of the primary source historical texts included in the required or recommended readings for this course. Research the text and its author. Produce a guide to the text for a generally educated but naïve reader. Your essay should include background on the author and the material history of the book, information about the impact of the text in its time and today, an overview of the structure and content of the book's argument, discussion of key concepts or terms unique to the text, and an annotated bibliography (one descriptive sentence for each source) of a minimum of 4 scholarly secondary sources on the text. A successful essay will offer a clear, engaging, and accessible guide to an esoteric text for a naïve reader.

3. Current science in context

Many areas of present-day research in genomics, reproductive biology, and the brain and behavioral sciences resonate with the topics and themes taken up by the historical authors we are reading in this course. Pick a well-defined area of present day scientific research of interest to you and briefly explicate its central claims, citing popular and/or scientific sources. Use one or more of our historical texts to place the new findings in the context of the deep intellectual history of the science of heredity and reproduction. Explain one or more larger historical debates to which the new research contributes. You might consider questions such as: How did historical authors anticipate scientific findings today? Can they offer conceptual resources for understanding the implications of new research? What are the similarities and dissimilarities with claims made in earlier eras? A successful essay will demonstrate, through a focused inquiry, how the history of science can offer clarifying context for understanding new scientific claims today.

Writing guidelines:

- An excellent essay will be persuasive, creative, elegantly written, and show proficiency with central course concepts and methods of analysis
- Advance an original argument or analysis using only your own ideas
- State your thesis clearly
- Use specific examples, quotations, and details to support your argument
- Clean grammar and spelling

Formatting guidelines:

- 1500-2000 words of main text
- MS Word .doc or .docx format
- Include complete citations in a consistent, recognized academic citation style of your choice

- References, footnotes, and endnotes are not included in page count and should be placed at the end of the document
- Double-spaced
- 12 pt Times New Roman font
- 1 inch margins
- Name and page number on the upper right header of each page
- Upload to Dropbox on the course iSite

Multimedia essays:

- *Equivalent* of 1500-2000 words of main text (3 minute film, 3-5 minute podcast, 8-10 frame cartoon -- confirm with professor)
- 1-2 page (double-spaced) descriptive summary/caption
- Include a *storyboard* detailing your planning and aesthetic choices
- Include complete citations in a consistent, recognized academic citation style of your choice.
- Good models: http://theoatmeal.com/comics, http://thismodernworld.com/, http://thesocietypages.org/socimages/, http://www.illdoctrine.com/
- Grading: 65% content; 35% execution; one revision and regrade permitted

Course policies

Course website:
The course website is a primary tool for this course. Bookmark and check the site frequently.

Class announcements:
Announcements will be posted on the course website. Urgent announcements will be sent to your Harvard email account. You are responsible for checking the course website and your Harvard email regularly.

Class attendance:
On-time attendance, preparation, and full participation are expected. Because this is a small class that meets only once a week, multiple absences or late arrivals are grounds for dismissal from the course.

Required reading:
This course requires reading approximately one substantial book-length text per week. Please plan accordingly. Recommended readings provided on the course website are not mandatory, but will enhance your understanding of the course material.

Late policy:
Deadlines are firm. Late assignments incur a 10% penalty for the first day and 5% after that. The professor reserves the right not to provide written feedback on late work. Extensions are granted only with advance notice and usually only in cases of documented illness.

Office hours:
I encourage you to visit me in office hours during the semester. Sign up for office hours using the online sign-up posted on the course website. If you are unable to attend scheduled office hours, email me to set up a time to meet.

Email:
Email overload is a challenge for all of us. Please keep email brief, clear, and professional (http://emailcharter.org/). It is best to visit me in office hours if you have detailed questions about the assignments or readings. I try to keep regular business hours for email correspondence. Do not rely on email for last minute questions.

Technology policy:
Please bring hard copies of texts and hand notes to class whenever possible. Use of laptops and tablets is permitted in class only when needed to access online course readings, or in the case of a documented disability requiring use. Email and social media should be blocked or disabled. No use of phones in class.

Statement on disabilities:
If you have a documented physical, psychological, or learning disability, please notify me within the first two weeks of the semester regarding reasonable and appropriate academic accommodations to help you succeed in this course.

Statement on academic honesty:
Academic dishonesty (cheating, fabrication, plagiarism, facilitating dishonesty) is prohibited and will lead to dismissal from the course and referral to College disciplinary procedures.

Statement on collaboration:
Discussion and the exchange of ideas are essential to academic work. For assignments in this course, you are encouraged to consult with your classmates on the choice of paper topics and to share sources. You may find it useful to discuss your chosen topic with your peers, particularly if you are working on the same topic as a classmate. However, you should ensure that any written work you submit for evaluation is the result of your own research and writing and that it reflects your own approach to the topic. You must also adhere to standard citation practices and properly cite any books, articles, websites, lectures, etc. that have helped you with your work. If you received any help with your writing (feedback on drafts, etc), you must also acknowledge this assistance.

Detailed class schedule

We will be reading selections from the bold-print works listed below. Recommended readings are optional. Use of any online or hard copy version of texts is permitted as long as it is the same edition and translation indicated on the syllabus. Consult the course website for most up-to-date version of required and recommended readings.

T – Text available at Harvard Coop; bring to class
E – Electronic text available at link
PDF – PDF available on course website
HL – Available at the Harvard Library

Date	Class Plan	Readings
Sept. 8	Introductions & Course Overview	In-class handout Recommended: [HL] Staffan Müller-Wille and Hans-Jörg Rheinberger. *A cultural history of heredity*. Chicago: University of Chicago Press, 2012.
Sept. 15	The Seed and the Soil	**[T] Aristotle, *Generation of Animals*, trans. AL Peck, 1943. (Another version via EBSCO) Read: Books 1 & 2** Recommended: [E] Hippocratic tract *De genitura*, 4th-5th C BC [E] "Chapter 1: The Body of Knowledge," in Delaney, Carol Lowery. *The seed and the soil: gender and cosmology in Turkish village society*. Berkeley: University of California Press, 1991. [PDF] Delaney, Carol. "The Meaning of Paternity and the Virgin Birth Debate." *Man*, Vol. 21, No. 3. (Sep., 1986): 494-513. [E] Martin, Emily. "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles." *Signs* 16, no. 3 (1991): 485-501. [PDF] Freeland, Cynthia. "Nourishing Speculation: A Feminist Reading of Aristotelian Science." *Engendering Origins: Critical Feminist Readings in Plato and Aristotle*(1994): 145-6.
Sept. 22	Teratology & Maternal Impressions	**[T] Ambroise Paré, *On Monsters and Marvels*, 1573, trans. Pallister, 1982. (Online version in French) Read: Full text** **[E] Nicholas Malebranche, *Treatise Concerning the Search After Truth*, 1694. Read: "BOOK the SECOND, Concerning The IMAGINATION"**

		Recommended: [PDF] Doniger, Wendy, and Gregory Spinner. "Misconceptions: Female Imaginations and Male Fantasies in Parental Imprinting." *Science in Culture* 127, no. 1 (1998): 97-129. [PDF] Braidotti, Rosi. "Signs of Wonder and Traces of Doubt: On Teratology and Embodied Differences." In *Feminist theory and the body: a reader*, edited by Janet Price and Margrit Shildrick, 291-301. New York: Routledge, 1999. [E] Daston, Lorraine and Katharine Park. *Wonders and the order of nature, 1150-1750*. Cambridge, Mass: Zone Books, 1998. [E] "Reason why children are often like their parents," *Aristoteles Master-Piece*, 1684 [PDF] Smith, Justin E. H. "Imagination and the problem of heredity in mechanist embryology." In *The Problem of Animal Generation in Early Modern Philosophy*, edited by Justin E. H. Smith: Cambridge University Press, 2006. [E] Jane Sharp, *The Midwive's Book* (1671) [E] Biblical story of Jacob and Laban [HL] Park, Katharine. *Secrets of women: gender, generation, and the origins of human dissection*. New York: Zone Books, 2006. [E] Huet, Marie-Hélène. *Monstrous imagination*. Cambridge, Mass.: Harvard University Press, 1993.
Sept. 29	Epigenesis & Houghton Rare Books Library visit	Meet at Houghton Library **[T] William Harvey, *Anatomical Exercises on the Generation of Animals*, 1651, In *The Works of William Harvey* Trans by Robert Willis. Philadelphia: University of Pennsylvania Press, 1989. Read: Introduction, pp. 151-167; Exercises 1, 13, 26-50, 63; skim remaining body of the text** Recommended: [E] Embryo Project introduction to William Harvey's views on generation [PDF] Keller, Eve. "Making up for Losses: The Workings of Gender in Harvey's de Generatione animalium" in *Inventing maternity: politics, science, and literature, 1650-1865*. Edited by Susan C. Greenfield and Carol Barash. Lexington: University Press of Kentucky, 1999. [HL] Gasking, Elizabeth B. *Investigations into generation, 1651-1828*. London: Hutchinson, 1967. [HL] Needham, Joseph. *A history of embryology*. Cambridge:

		The University press, 1934.
Oct. 6	Preformation-ism	**[PDF] Selections from Swammerdam on the discovery of sperm** **[E] Leeuwenhoeck, Anthony. "An Abstract of a Letter from Mr. Anthony Leeuwenhoeck of Delft about Generation by an Animalcule of the Male Seed." *Philosophical Transactions* 13, no. 143-154 (1683): 347-355.** **Garden, George. "A Discourse concerning the Modern Theory of Generation." *Philosophical Transactions* 16, no. 179-191 (1686): 474-483.** Recommended: [E] Stanford Encyclopedia of Philosophy entry on Epigenesis and Preformationism [E] Nicolas Andry du Bois Regard, "An Account of the Breeding of Worms in Human bodies," 1700. [E] Leeuwenhoek, Antoni van. *The select works of Antony Van Leeuwenhoek, containing his microscopical discoveries in many of the works of nature*. Trans. Samuel Hoole. *London: Henry Fry, 1798.* [E] Leeuwenhoek, complete letters to the *Royal Society*. [E] Swammerdam, Jan. *The book of nature, or, The history of insects*. London, 1758. (Max Planck Society version; Utah State University version) [E] Cook, John. *The new theory of generation. London, 1762.* [HL] Correia, Clara Pinto. *The ovary of Eve: egg and sperm and preformation*. Chicago: University of Chicago Press, 1997.
Oct. 10	**Assignment 1 due**	Upload to DropBox by 12 midnight along with portfolio of QFCs to date
Oct. 13	*Columbus Day*	No class
Oct. 20	Breeding & Harvard metaLAB workshop	**[PDF] Maupertius, *Vénus Physique* (1745, 1756) (Online version in French) Read: Full text** Workshop: How digitized texts are changing reading, teaching, and scholarly research *Matthew Battles, Associate Director, Harvard metaLAB, Fellow, Berkman Center for Internet and Society* Recommended: [E] Glass, Bentley. "Maupertuis and the Beginnings of Genetics." *The Quarterly Review of Biology* 22, no. 3 (1947): 196-210.

		[E] Harte, Walter. *Essays on Husbandry*. London: W. Frederick, 1764. [E, PDF] Osmer, William. *A dissertation on horses: wherein it is demonstrated, by matters of fact, as well as from the principles of philosophy, that innate qualities do not exist, and that the excellence of this Animal is altogether mechanical and not in the Blood.* London: T. Waller, 1756. [E] Wall, Richard. *A dissertation on breeding of horses.* London: G. Woodfall et al, 1760. [E] *Heredity produced: at the crossroads of biology, politics, and culture, 1500-1870*. Edited by Staffan Müller-Wille and Hans-Jörg Rheinberger. Cambridge, Mass.: MIT Press, 2007.
Oct. 27	Human Perfectability	**[E] Paley, William. *Natural theology*. London: R. Faulder, 1802. (Another version in HTML format) Read: Ch 1-6, 23-27, and skim remaining body of text** **[E] Malthus, T. R. *An essay on the principle of population, as it affects the future improvement of society*. London: J. Johnson, 1798. Read: full text** Recommended: [PDF] Glacken, Clarence J. "Environment, Population, and the Perfectibility of Man," in *Traces on the Rhodian shore: nature and culture in Western thought from ancient times to the end of the eighteenth century*. Berkeley, University of California Press, 1967. [E] John Locke, *Essay Concerning Human Understanding* (1690) [E] John Locke, *Some Thoughts Concerning Education* (1693) [E] Derham, W. *Physico-Theology: or, a demonstration of the being and attributes of God, from his works of Creation.* London: 1714. [E] Rousseau, Jean-Jacques. *A discourse upon the origin and foundation of the inequality among mankind.* London: Dodsley, 1761. [E] Wallace, Robert. *Various prospects of mankind, nature, and providence*. London: A. Millar, 1761. [HL] Shattuck, Roger. *The forbidden experiment: the story of the Wild Boy of Aveyron*. New York: Farrar Straus Giroux, 1980. [HL] Lovejoy, Arthur O. *The great chain of being: a study of the history of an idea*, Cambridge, Mass.: Harvard University Press, 1936.
Nov. 3	Race, Climate,	**[E] Montesquieu, *Spirit of Laws*, 1748. Read: Books XIV-XIX**

	& Environment	**[E] Smith, Samuel Stanhope. *An essay on the causes of the variety of complexion and figure in the human species*. Philadelphia: Philadelphia: 1787. (Also available in these formats: archive.org and Early American Imprints) Read: TBA** Recommended: [E] Livingstone, David N. "Race, space and moral climatology: notes toward a genealogy." *Journal of Historical Geography* 28, no. 2 (2002): 159-180. [E] Arbuthnot, John. *An essay concerning the effects of air on human bodies.* London: J., 1733. [PDF] Hume, David. "Of National Characters," 1748. [E] Dunbar, James. *Essays on the history of mankind in rude and cultivated ages.* London: W. Strahan, 1780. (Also available at archive.org) [E] Falconer, William. *Remarks on the influence of climate.* London: C. Dilly, 1781.
Nov. 10	Soft and Hard Heredity	**[T] Lamarck, *Zoological philosophy: an exposition with regard to the natural history of animals*. (trans.) Chicago: University of Chicago Press, 1984. (Online version in French) Read: TBA** **[E] Weismann, 1891-1892, *Essays Upon Heredity*, Vol 1 & 2. Read: TBA** Recommended: [E] Walker, Alexander. *Intermarriage, or, The mode in which, and the causes why, beauty, health, and intellect, result from certain unions, and deformity, disease, and insanity, from others*, New York: J. & H.G. Langley, 1839 [E] Darwin, "Provisional Hypothesis of Pangenesis" in *The Variation of Animals and Plants Under Domestication*, 1868 [PDF] Galton, Francis. "A Theory of Heredity." *The Journal of the Anthropological Institute of Great Britain and Ireland* 5 (1876): 329-348. [PDF] Johannsen W. The Genotype Conception of Heredity. *The American Naturalist* 1911; 45: 129-159. [HL] Bowler, Peter J. *The Mendelian revolution: the emergence of hereditarian concepts in modern science and society*. Baltimore: Johns Hopkins University Press, 1989. [HL] Jacob, Francois. *The logic of life: a history of heredity*: New York: Pantheon Books, 1974. [HL] Bowler, Peter J. *The eclipse of Darwinism: anti-Darwinian*

		evolution theories in the decades around 1900. Baltimore: Baltimore: Johns Hopkins University Press, 1983. [PDF] Rosenberg, C. E. "The bitter fruit: heredity, disease, and social thought in nineteenth century America." *Perspectives in American History* 8 (1974): 189-235. [HL] Otis, Laura. *Organic memory: history and the body in the late nineteenth & early twentieth centuries*. Lincoln: University of Nebraska Press, 1994. [HL] *Transformations of Lamarckism: from subtle fluids to molecular biology*. Edited by Snait Gissis and Eva Jablonka. Cambridge, Mass.:: MIT Press, 2011.
Nov. 14	**Assignment 2 due**	Upload to DropBox by 12 midnight along with portfolio of QFCs to date
Nov. 17	Eugenics	*Note: we will be dividing these readings amongst seminar participants* **Galton, Francis. *Hereditary genius: an inquiry into its laws and consequences*. New York: D. Appleton, 1870.** **Nordau, Max Simon. *Degeneration*. New York: D. Appleton, 1895.** **Pearson, Karl. *National life from the standpoint of science*. 2nd ed. London, 1905** **Castle, William E. *Genetics and eugenics: a text-book for students of biology and a reference book for animal and plant breeders*. Cambridge: Harvard University Press, 1916.** Recommended: [E] Francis Galton papers online at the Wellcome Trust [W] Pearson, Karl, "On Breeding Good Stock," 1903. Guyer, Michael F. *Being well-born: an introduction to eugenics*. Indianapolis: The Bobbs-Merrill company,1916. [E] Popenoe, Paul. *Applied eugenics*. New York: New York, The Macmillan company, 1918. [E] George Bernard Shaw, *Man and Superman*, 1903. [HL] Kevles, Daniel J. *In the name of eugenics : genetics and the uses of human heredity*. Berkeley: University of California Press, 1986. [HL] Paul, Diane B. *The politics of heredity: essays on eugenics, biomedicine, and the nature-nurture debate*. Albany: State University of New York Press, 1998. [HL] Comfort, Nathaniel C. *The science of human perfection:*

		how genes became the heart of American medicine. New Haven: New Haven : Yale University Press, 2012.
Nov. 24	Gender, Sexuality & Human Reproduction at the Turn of the 20th Century	**[T] Gilman, Charlotte Perkins. *Women and economics*, 1898. Read: Full text** **[E, HL] Ellis, Havelock. *Sex in relation to society*. Philadelphia: Philadelphia: F. A. Davis company, 1910. Read: Ch. 1 & 12** Recommended: [E] Guide to Charlotte Perkins Gilman papers at the Schlesinger Library [E] Bernice Hausman. "Sex before Gender: Charlotte Perkins Gilman and the Evolutionary Paradigm of Utopia". *Feminist Studies*, Vol. 24, No. 3 (Autumn, 1998) [HL] Clarke, Adele. *Disciplining reproduction: modernity, American life sciences, and "the problems of sex"*. Berkeley: University of California Press, 1998. [E] Weir, James, Jr. "The Effect of Female Suffrage on Posterity." *The American Naturalist* 29, no. 345 (1895): 815-825.
Dec. 1	Reproductive Futurism at the Advent of Genetic Engineering	**[T] Huxley, Aldous. *Brave new world*, 1931. Read: Full text** **[E, HL] Shulamith Firestone's *The Dialectic of Sex*** **New York: Bantam Books, 1970. (Another version at archive.org) Read: Ch. 1, 9, 10** Recommended: Halbert, Debora. "Shulamith Firestone: Radical feminism and visions of the information society." *Information, Communication & Society* 7, no. 1 (2004): 115-135. [E] Adams, Alice. "Out of the Womb: The Future of the Uterine Metaphor." *Feminist Studies* 19, no. 2 (1993): 269-289. [HL] Haldane, J. B. S. *Daedalus or science and the future: a paper read to the heretics, Cambridge on February 4th 1923*: New York: E. Dutton, 1924. [E] Shelley, Mary Wollstonecraft. *Frankenstein, or, The Modern Prometheus*, 1818. [HL] Piercy, Marge. *Woman on the edge of time*. New York: New York: Fawcett Crest, 1976. [HL] Atwood, Margaret. *The handmaid's tale*. Toronto: McClelland and Stewart, 1985. [E] Charlotte Perkins Gilman, *Herland*, 1915. [PDF] Beauvoir, Simone de. "The Data of Biology," in *The second sex*. New York: Knopf, 1953.

Dec. 12	**Assignment 3 due**	Upload to DropBox by 12 midnight along with portfolio of QFCs to date