

HOS/HIS 595 (MOD 564)

## Introduction to Historiography of Science

D. Graham Burnett

Wednesdays, 1:30 pm - 4:20 / Dickinson 211

The seminar introduces graduate students to central problems, themes, concepts, and methodologies in the history of science (and neighboring fields). We explore past and recent developments, including: the Sociology of Scientific Knowledge; Actor-Network Theory; the study of practice, experimentation, and quantification; the concept of the paradigm; gender, race, sexuality, and the body; environmentalism; and the role of labor and industry in the changing patterns of global technoscience (in addition to other relevant topics). All readings should be on reserve; main books at Labyrinth. We will discuss written work and other assignments at our first session. For each week, readings are listed in the recommended order of priority and sequence.

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### PART I (weeks 1-6): A GENEALOGY OF THE FIELD Touchstones, Texts, Traditions

Our syllabus is divided into two parts. Across the first six weeks of the semester, we will work to get a sense of something like a “main line” of theoretical and historiographical inquiry that has been essential to the constitution of the formal academic discipline of History of Science since 1960. Any such program of “canonicity” is up for critical disputation, and we will be alive to alternative accounts along the way. Part II of the seminar will operate differently: each week will focus on a pair of significant (mostly recent and monographic) books in the field; these will help us explore the diversity and range of contemporary scholarship informed by the historiographical and theoretical problematics explored in Part I. Throughout, supplemental sources are suggested.

#### Week 1: The History of Science – discipline and domain

##### Core Reading:

- Lynn K. Nyhart, “Historiography of the History of Science,” chapter 1 of *A Companion to the History of Science*, edited by Bernard Lightman (London: Wiley/Blackwell, 2020): 7-22.
- Steven Shapin, “Lowering the Tone in the History of Science: A Noble Calling,” chapter 1 of his *Never Pure* (Baltimore, MD: Johns Hopkins University Press, 2010): 1-14.
- Lorraine Daston, “Science Studies and the History of Science,” *Critical Inquiry* 35 (2009): 798-813.
- Peter Dear and Sheila Jasanoff, “Dismantling Boundaries in Science and Technology Studies,” *Isis* 101 (2010): 759-774.

##### Complement/Consider/Adjacently:

- Katherine McKittrick, “Dear Science,” the epilogue of her *Dear Science and Other Stories* (Durham, NC: Duke University Press, 2019): 186-187.
- Lynn K. Nyhart, “The Shape of the History of Science Profession, 2038: Prospective Retrospective,” *Isis* 104 (2013):131-139.

##### Media Archaeology, etc.:

- “The Trigger Effect,” the pilot episode of James Burke’s classic BBC history of science and technology series, “CONNECTIONS” (1978). Online lots of places:

<https://www.youtube.com/watch?v=Nc0b3Dilzic>

## Week 2: The Paradigm of Revolution

### Core Reading:

- Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962). NB: there are multiple editions of this much-cited book. Read what you put your hand on, but I will be working from the 3<sup>rd</sup> edition (1996) and the newest (2012), with a useful introduction by Ian Hacking (the latter is at Labyrinth).
- Steven Shapin, "Discipline and Bounding: The History and Sociology of Science as Seen through the Externalism-Internalism Debate," *History of Science* 30, no. 4 (1992): 333-369.
- Mario Biagioli, "The Anthropology of Incommensurability," *Studies in History and Philosophy of Science Part A*, 21, no. 2 (1990): 183-209.
- Peter Galison, "Trading Zone: Coordinating Action and Belief (1998 abridgment)," reprinted in *The Science Studies Reader*, edited by Mario Biagioli (New York: Routledge, 1999): 137-160.

### Complement/Consider/Adjacently:

- Caroline A. Jones, "The Modernist Paradigm: The Artworld and Thomas Kuhn," *Critical Inquiry* 26, no. 3 (2000): 488-528.
- Errol Morris, *The Ashtray (Or, the Man Who Denied Reality)* (Chicago: University of Chicago Press, 2018). Browse! Chapters 1, 9, and the epilogue perhaps of most interest?

### Media Archaeology, etc.:

- "Directed to Philosophers, but I think not a lot of them read it," a short excerpt from a 1995 interview with Kuhn on the reception of *Structure*:  
[https://www.youtube.com/watch?v=fV-vh9y\\_T0s](https://www.youtube.com/watch?v=fV-vh9y_T0s)

## Week 3: Epistemic Archaeology

### Core Reading:

- Michel Foucault, *The Order of Things* (New York: Vintage, 1994 [1970]).
- Gary Gutting, "The Politics of 'The Order of Things': Foucault, Sartre, and Deleuze," *History and Theory* 55, no. 4 (2016): 54-65.
- Ian Hacking, "Making Up People," reprinted in *The Science Studies Reader*, edited by Mario Biagioli (New York: Routledge, 1999): 161-171.

### Complement/Consider/Adjacently:

- WARNING (this article discusses sadomasochism, sexual violence, and suicide; it is optional) Richard Shusterman, "Somaesthetics and Care of the Self: The Case of Foucault," *The Monist* 83, no. 4 (October 2000): 530-551.

### Media Archaeology, etc.:

- "A game of grids," Foucault in conversation with Noam Chomsky on creativity and scientific progress (1971, excerpts):  
<https://www.youtube.com/watch?v=F5Wpe65sky8>

## Week 4: The Sociology of Scientific Knowledge

### Core Reading:

- Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, NJ: Princeton University Press, 2011 [1985]).
- David Bloor, "The Strong Programme in the Sociology of Knowledge," in *Knowledge and Social Imagery*, 2nd edition (Chicago, 1991 [1976]): 3-23.
- H.M. Collins, "The TEA Set: Tacit Knowledge and Scientific Networks," reprinted in *The Science Studies Reader*, edited by Mario Biagioli (New York: Routledge, 1999): 95-109.

### Complement/Consider/Adjacently:

- Andrew Pickering, "From Science as Knowledge to Science as Practice," chapter 1 of his *Science as Practice and Culture* (Chicago: University of Chicago Press, 1992):1-26.

### Media Archaeology, etc.:

- "Candles and mice go out at about the same rate," Simon Schaffer on the air pump (ca 1990):  
[https://www.youtube.com/watch?v=oManjfm8\\_Kw&t=14s](https://www.youtube.com/watch?v=oManjfm8_Kw&t=14s)

## Week 5: From Actor Network Theory to a Parliament of Things

### Core Reading:

- Michel Callon, "Actor Network Theory," in *International Encyclopedia of the Social & Behavioral Sciences*, edited by Neil J. Smelser, Paul B. Baltes (Oxford: Pergamon, 2001): 62-66.
- Bruno Latour, *Science in Action* (Cambridge, MA: Harvard University Press, 1987). The only required portion of this book is chapter 6, "Centers of Calculation" (pp. 215-257), but you are invited to consider the whole volume.
- Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993).
- Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," in *The Science Studies Reader*, edited by Mario Biagioli (New York: Routledge, 1999): 172-188.
- Bruno Latour, "Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry* 30 (2004): 225-248.

### Complement/Consider/Adjacently:

- Bruno Latour and Peter Weibel, eds, *ICONOCLASH: Beyond the Image Wars in Science, Religion, and Art* (Karlsruhe: ZKM, 2002).
- Francis Halsall, "Actor-Network Aesthetics: The Conceptual Rhymes of Bruno Latour and Contemporary Art," *New Literary History* 47, nos. 2 & 3 (Spring & Summer, 2016):439-461.

### Media Archaeology, etc.:

- "Arts of the Critical Zone," a symposium hosted by the Warburg Institute, London, with Latour, Frédérique Aït-Touati, John Tresch, Joseph Koerner, Bill Sherman, and others (5 March 2020):  
[https://www.youtube.com/watch?v=rh3JKg\\_UdMo](https://www.youtube.com/watch?v=rh3JKg_UdMo)

## Week 6: Fidelity to Nature (and the Scientific Self)

### Core Reading:

Peter Galison and Lorraine Daston, *Objectivity* (New York, Cambridge: Zone Books: 2007).

### Complement/Consider/Adjacently:

Lorraine Daston and Elizabeth Lunbeck, eds. *Histories of Scientific Observation* (Chicago: University of Chicago Press, 2011). NB: this and the text below are not formally “assigned” this week; rather, peruse the volumes to get a sense of the projects. Reading this week is lighter, to give you time to complete the first paper.

Lorraine Daston and Fernando Vidal, eds., *The Moral Authority of Nature* (Chicago: University of Chicago Press, 2004).

### Media Archaeology, etc.:

“Donna Haraway and Bruno Latour discuss *Storytelling for Earthly Survival*,” a symposium at ZKM (25 June 2020):  
[https://www.youtube.com/watch?v=j-2r\\_vI2aIg](https://www.youtube.com/watch?v=j-2r_vI2aIg)

<p><b>First Paper Assignment:</b> Please bring to class, on paper, printed (single side), stapled in the upper left-hand corner, your midterm written exercise. The prompt is as follows: select an episode, event, or person relevant to the history of science, technology, and/or medicine in some plausible way; in an essay not to exceed 3,500 words, write <i>two different “treatments”</i> of your selected historiographical test-case, one making use of one of the approaches we have explored in weeks 2-5, and the other making use of another.</p>
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## PART II (weeks 7-12): THE FIELD AT WORK

Examples, Problems, Themes, Achievements

## Week 7: Mind and Machine in the Nineteenth Century

### Core Reading:

John Tresch, *The Romantic Machine: Utopian Science and Technology after Napoleon* (Chicago: University of Chicago Press, 2012).

Winter, Alison, *Mesmerized: Powers of Mind in Victorian Britain* (Chicago: University of Chicago Press, 2000).

### Complement/Consider/Adjacently:

Laura Stark and Nancy D. Campbell, “The Ineffable: A Framework for the Study of Methods through the Case of Mid-century Mind-Brain Sciences,” *Social Studies of Science* 48, no. 6 (December 2018): 789-820.

### Media Archaeology, etc.:

John Tresch, “Every Society Invents the Failed Utopia it Deserves,” from the “Conjectures” series of the *Public Domain Review* (19 October 2016). A metafiction:  
<https://publicdomainreview.org/essay/every-society-invents-the-failed-utopia-it-deserves/>

## Week 8: Understanding Environments – Place, Air, Empire

### Core Reading:

- Deborah R. Coen, *Climate in Motion: Science, Empire, and the Problem of Scale* (Chicago: University of Chicago Press, 2018).
- David Livingstone, *Putting Science in Its Place: Geographies of Scientific Knowledge* (Chicago: University of Chicago Press, 2003).

### Complement/Consider/Adjacently:

- Paul Carter, *The Lie of the Land* (London: Faber, 1996), part III, “Light Reading,” pp. 203-290.
- Rowan Rose Boyson, “Air and Atmosphere Studies: Enlightenment, Phenomenology and Ecocriticism,” *Literature Compass* 19, nos. 1-2 (2022):1-13.

### Media Archaeology, etc.:

- “Atmospheric Memory,” an exhibition at Powerhouse (Sydney, Australia), by artist Rafael Lozano-Hemmer in 2023. The project integrated themes of climate, cloud, atmosphere, language, information, and the body. You can get a bit of a sense of it at the sites below (one on the show as a whole, one documenting a single installation, “Cloud Display”):  
<https://powerhouse.com.au/program/atmospheric-memory#overview>  
<https://www.lozano-hemmer.com/videos.php?id=348&type=projects>

## Week 9: Body, Sex, Gender, Race

### Core Reading:

- Dorothy Roberts, *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty* (New York: Vintage, 2017 [1997]).
- Michelle Murphy, *Seizing the Means of Reproduction: Entanglements of Feminism, Health, and Technoscience* (Durham, NC: Duke University Press, 2012).

### Complement/Consider/Adjacently:

- Garland E. Allen, “The Double-Edged Sword of Genetic Determinism: Social and Political Agendas in Genetic Studies of Homosexuality, 1940-1994,” in *Science and Homosexualities*, edited by Vernon A. Rosario (New York: Routledge, 1997): 242-70.
- Saidiya Hartman, “Venus in Two Acts,” *Small Axe* 12, no. 2 (2008): 1-14.
- Nettrice R. Gaskins, “Deep Sea Dwellers: Drexciya and the Sonic Third Space,” *Shima* 10, no. 2 (2016): 68-80.

### Media Archaeology, etc.:

- Ayana V. Jackson’s current exhibition at the Smithsonian Museum of African Art, “FROM THE DEEP”:  
[www.si.edu/exhibitions/deep-wake-drexciya-ayana-v-jackson%3Aevent-exhib-6673](http://www.si.edu/exhibitions/deep-wake-drexciya-ayana-v-jackson%3Aevent-exhib-6673)

## Week 10: Humans and Other Animals

### Core Reading:

Donna Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (New York: Routledge, 1989).

Robert E. Kohler, *Lords of the Fly: Drosophila Genetics and the Experimental Life* (Chicago: University of Chicago Press, 1994).

### Complement/Consider/Adjacently:

Hans-Jörg Rheinberger, "Experimental Systems: Historiality, Narration, and Deconstruction," in *The Science Studies Reader*, edited by Mario Biagioli (New York: Routledge, 1999): 417-429.

Londa Schiebinger, "Why Mammals are Called Mammals: Gender Politics in Eighteenth-Century Natural History," *The American Historical Review* 98 (1993): 382-411.

### Media Archaeology, etc.:

"Theater of the Natural World" and "The Life of a Dead Tree" are both projects of the American artist Mark Dion, whose practice works at the intersection of laboratory life and museum culture. Two short documentary videos may be of interest:

<https://www.youtube.com/watch?v=ae0A4cnHfb0>

<https://www.youtube.com/watch?v=6M54ucPT3CY>

## Week 11: Media, Screen, Democracy, Dream

### Core Reading:

Natasha Dow Schüll, *Addiction by Design: Machine Gambling in Las Vegas* (Princeton: Princeton University Press, 2012).

Fred Turner, *The Democratic Surround: Multimedia & American Liberalism from World War II to the Psychedelic Sixties* (Chicago: University of Chicago press, 2013).

### Complement/Consider/Adjacently:

Bernard Stiegler, "Economy and Cognition of Attention," chapter 6 of his *Taking Care of Youth and the Generations* (Stanford: Stanford University Press, 2010): 94-106.

Hito Steyerl, "The Spam of the Earth: Withdrawal from Representation," chapter 10 of her *The Wretched of the Screen* (Berlin: Sternberg Press, 2012): 106-175.

### Media Archaeology, etc.:

*Twelve Theses on Attention*, a short film made by the "Friends of Attention" coalition in 2020 for the Glasgow International. Full disclosure! I was part of the group that drafted the theses, and I know the folks who made the film (many of whom are friends):

<https://vimeo.com/430174203/b359a94409>

## Week 12: The Technoscience of Globalization

### Core Reading:

Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge, MA: MIT Press, 2014).

Xiaowei Wang, *Blockchain Chicken Farm: And Other Stories of Tech in China's Countryside* (New York: FSGO/Logic, 2020).

### Complement/Consider/Adjacently:

John Krige, "Writing the Transnational History of Knowledge Flows in a Global Age," in *Knowledge Flows in a Global Age: A Transnational Approach*, edited by John Krige (Chicago: University of Chicago Press, 2022): 1-30.

### Media Archaeology, etc.:

*Can't Get You out of My Head* (BBC, 2021), Adam Curtis's six-part "emotional history of the modern world." Let's watch the final episode, "Are We Pigeon? Or Are We Dancer?" on technology, globalization, and the fate of technoutopianism:

<https://www.youtube.com/watch?v=C4Dn2-Pk3I>

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E N D O F T E R M

**Final Paper Assignment:** Please turn in, no later than Dean's Date (on paper, printed, single side, stapled in the upper left-hand corner), your final written work for our seminar. The prompt is as follows: compose a "historiographical essay" on a suitable topic of your choice. This should take the form of a "literature review" such as might appear in the introductory section of a PhD dissertation or scholarly book, and ought to discuss a range of related books and articles (probably not fewer than ten, though there is flexibility here, as such a project may be approached in various ways). Expected length: 6,000-10,000 words. We will discuss your selected topics in class. No extensions on this, or on any aspect of the work for this seminar.

Evaluations will be based on the following splits: class participation (active and informed engagement, etc.), 30%; first paper, 30%; final paper, 40%.