

Technology and Power

HIST 615-DL5/HIST 635-001. George Mason University. Fall 2020.

Professor Zachary Schrag

Mondays 7:20 pm – 10pm.

Online via Zoom. Select link within the course Blackboard site, <http://mymason.gmu.edu>

Syllabus updated 18 August 2020

Revisions since previous draft:

- Corrected meeting date from M 10/12 to Tu 10/13.
- Added “pitfalls” section to Lesson Plan instructions

E-mail: zschrage@gmu.edu (please include “615” in subject header).

Tel. 703/594-1844.

Student Office Hours (Zoom): Tuesdays, 10:00am-noon, and by appointment.

<https://tinyurl.com/y34haand>

Please sign up for a slot or slots at zschrage.as.me, whether you are planning to come during those times or other times. For advice on email and office hours, see Catherine Denial, “How to Build Relationships with Teachers: Advice from College Professors,” *Teen Vogue*, October 11, 2018, <https://bit.ly/2yQi1Z9>

Course Blackboard site: <http://mymason.gmu.edu>

General advice: <http://historyprofessor.org>

Chicago-Style Citation Quick Guide: http://www.chicagomanualofstyle.org/tools_citationguide.html

History of Technology Guide (for primary sources): <https://infoguides.gmu.edu/historytechnology>

Please use your official Mason email account for all communications and check it regularly. Important course messages may be sent there.

Course Description

Do artifacts have politics? asked Langdon Winner. This reading seminar believes that they do, and it asks just what politics they have. Students will explore some general approaches to the interrelationship of state power and technology, and then read scholarship about three specific areas: vaccination, electricity, and aviation. The main emphasis will be Europe and the United States in the nineteenth and twentieth centuries, and the course is intended to serve students with a general interest in those periods as well as those with particular interest in politics or technology. The seminar mostly focuses on assigned reading, though students are also asked to complete an independent final project.

Goals

In this course, students will:

- Enhance their knowledge of nineteenth- and twentieth-century United States and European history.
- Consider connections between public policy and science, technology, and medicine, and the ways historians study those connections.
- Practice critical reading and analysis of recent scholarship.
- Explore opportunities for future research.

Administrative

Please read the administrative information about the honor code, university resources, and the like online at <http://historyprofessor.org/miscellaneous/boilerplate/>

Required Readings

Most of the assigned books can be downloaded through the university library system. The exceptions are Hecht, Oreskes/Conway, Otter, Palmer, and Seo. The Palmer book can be read online but not downloaded. Additional short readings are available through the university library: library.gmu.edu or via links on the Readings page of Blackboard. Please download the books and articles directly from the library site, rather than sharing PDFs, so that the library will know the importance of the journals we use.

Cater, Casey P. *Regenerating Dixie: Electric Energy and the Modern South*. University of Pittsburgh Press, 2019. [JSTOR]

Fritzsche, Peter. *A Nation of Fliers: German Aviation and the Popular Imagination*. Cambridge, Mass.: Harvard University Press, 1994. [ACLS Humanities eBook. No download restrictions]

Gooday, Graeme. *Domesticating Electricity: Technology, Uncertainty and Gender, 1880–1914*. University of Pittsburgh Press, 2008. [JSTOR]

Hecht, Gabrielle. *The Radiance of France: Nuclear Power and National Identity after World War II*. MIT Press, 2009. [Ebook Central Academic Complete. Unlimited users, limited downloads.]

Meiton, Fredrik. *Electrical Palestine: Capital and Technology from Empire to Nation*. Oakland, California: University of California Press, 2018. [VIVA University Press Scholarship Online Ebooks]

Oreskes, Naomi, and Erik M. Conway. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press, 2010. [Ebook Central. One user; limited downloads.]

Otter, Chris. *The Victorian Eye: A Political History of Light and Vision in Britain, 1800-1910*. University of Chicago Press, 2008. [Ebook Central Academic Complete, unlimited users, limited downloads.]

Palmer, Scott W. *Dictatorship of the Air: Aviation Culture and the Fate of Modern Russia*. Cambridge: Cambridge University Press, 2009. [ACLS Humanities eBook. No downloads.]

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press, 1998. [JSTOR]

Seo, Sarah A. *Policing the Open Road: How Cars Transformed American Freedom*. Harvard University Press, 2019.

Vaughan, Laura. *Mapping Society: The Spatial Dimensions of Social Cartography*, (London: UCL Press, 2019). [JSTOR, also <https://www.uclpress.co.uk/products/108697>]

Van Vleck, Jenifer. *Empire of the Air: Aviation and the American Ascendancy*. Cambridge, Massachusetts: Harvard University Press, 2013. [JSTOR]

Assignments

Attendance and contribution, and reading responses are low-stakes assignments. Satisfactory completion—including on-time posting of the responses—will earn 100 percent, or 20 points total. The remaining assignments are higher stakes, with satisfactory performance earning 80 percent, or 64 points total. Thus, merely satisfactory completion of all assignments will earn 84 points, or a B. Higher grades require challenging questions, clear claims, and persuasive evidence.

Attendance and contribution. 10 points total.

As graduate students, you are expected to attend class regularly and promptly, and to let me know in advance if you will not be able to attend a session. You are expected to participate actively in class discussions, posing questions to your classmates and asking for their thoughts on challenging portions of the reading. The class will discuss the appropriate use of the Zoom platform, including the chat function.

Reading responses: 1 point each x 10 responses. 10 points total

For each class meeting except the last, you are asked to post responses to the assigned readings. For weeks with multiple readings, you may choose a passage from any of the readings.

These responses are mainly designed to set the agenda for class discussions. I do not expect to offer detailed feedback, though I may do so if you are having trouble with the format. Please post your responses to the **discussion board** section of Bb by **2pm** on the day of our meetings. Please post these by clicking "Reply" on the relevant thread and pasting plain text; do not use attachments. I suggest you compose your response in a plain text editor and then paste it, in case Bb malfunctions.

Thirteen responses are assigned but only ten are needed for full credit, so you may skip three without penalty. These can include the two weeks you present a primary source, but they need not be.

Each response should run between 100 and 300 words and achieve three tasks:

1. Present one indisputable fact. This should be something specific, with a who, what, where, and when, not a matter of interpretation. Please include a page reference.
2. Present the author's interpretation of that fact, and how it relates to a broader claim of the relevant section, article, chapter, or book. Please include page reference or references and quote the author as appropriate.
3. Present another reading of that fact. Is the author's interpretation of the fact persuasive? How might the fact otherwise be interpreted by someone skeptical of the claim?

Your response can be more or less critical of the work. If you find a fact that undermines the author's claim, or does not support in the way that the author asserts, say that. But if you were originally skeptical of the claim and a particular fact won you over to the author's way of thinking, say that.

*Example (A response to Jennifer S. Light, *Warfare to Welfare: Defense Intellectuals and Urban Problems in Cold War America*, 2003.)*

1. The 1972-1973 collaboration between NASA and the New York City government produced few results. City officials could not find uses for satellite imagery, and after outside funding expired they did not renew the program. (pp. 137-138)
2. Light presents this as an example of the failed application of defense technology to urban problems. "A critical finding of this book," she writes in her introduction, "is that applications of military innovations and expertise to urban problems rarely served as sources of solutions . . . Average city dwellers found few visible effects. In city after city, for innovation after innovation, few experiments achieved their promised reforms." (8) She calls the NASA collaboration and similar efforts in New York a "mixed success" (138).
3. The New York story could be read in a more positive way. One of the reasons city officials did not use satellite imagery is that they could rely on other military spinoffs. Light concedes, "aerial photography and geographic information systems have remained essential for New York City administration to the present day." (138) As Light notes, both aerial photography (126) and GIS (134-136) emerged from military applications, so their use by New York City must count as "applications of military innovations and expertise to urban problems." If they have remained essential to city administrators, presumably it is because they are sources of solutions. So

why call this a “mixed” rather than an outright success? By downplaying the results of the successful experiments, Light risks a false impression of the impact of defense technology.

More examples of this kind of analysis can be found at “How to Use Examples to Evaluate Scholarship,” <http://historyprofessor.org/how-to-use-examples-to-evaluate-scholarship/>..

Goals

- Prepare you for class discussions by focusing your attention on the arguments and facts presented by the readings.
- Help you distinguish between the claims a historian makes and the evidence she uses to support those claims.
- Help you practice evaluating a work by its ability to make sense of the evidence it offers.
- Prepare the instructor and your classmates by giving them an advance idea of what you and other students think are the key questions raised by the readings.

Comparison essays: 4 essays, 10 percent each, 40 percent total

For each unit of the course, you are asked to write a review essay comparing and contrasting the assigned texts. Each paper should run roughly 750-1000 words (3-4 pages). It should present a thesis that explains what we learn from reading the works in combination. You are welcome to elaborate on points raised in your own reading responses or, with proper citation, those of your classmates. References to readings done for other courses may be helpful. Please footnote as needed. **Please post your response on the Assignments section of Blackboard by 7:00 pm** on the dates indicated on the schedule below.

The essays should not summarize the reading, nor attempt to address every claim by every author. Rather, each essay should present one bold, original thesis about how the works address an important theme in the history of technology or political history. In other words, aim to say something that would interest a reader already familiar with the works under review.

Please pay attention to essay form. Present a question and a thesis in your introduction, and argue it consistently through the essay.

For more instructions on reading and reacting, please see “How to Read a History Book,” “How to Write a Review,” “How to Write a Reading Response,” and “Reverse Engineering for Historians” at <http://historyprofessor.org/reading/>.

The best published models for these essays are likely the reviews of multiple books in the journal *Reviews in American History*, available online through the university library. See, for example,

- Robert A. Beauregard, “The Political Complexities of Development,” *Reviews in American History* 43, no. 1 (2015): 161–67.
- Robert S. Friedman, “American Nuclear Energy Policy, 1945–1990: A Review Essay,” *Journal of Policy History* 3, no. 03 (1991): 331–48.
- Howard P. Segal, “Rewiring the History of the Telegraph and the Telephone,” *Reviews in American History* 42, no. 3 (2014): 456–61,

These essays explore the choices of scholars about scope, timeframe, sources, agency, and the like, and use them to develop findings about broader topics.

Goals

- Keep you engaged as active readers.
- Encourage you to consider the largest implications of the individual stories told by each work.
- Give you practice in writing critically yet respectfully about other scholars’ work.

Lesson plans: 2 presentations, 10 percent each, 20 percent total

At the start of the course, teams of student will be assigned two weeks for which they will be responsible for leading the last hour of discussion.

For each presentation, find a primary source for discussion. Imagine that you want to convey some of the major insights of our reading for the week to an audience (high school students, undergraduates, museum visitors, Smithsonian cruise ship passengers) who have not read and never will read the scholarly monograph that we are discussing that week. But they are willing to read a short, primary source, or absorb its sound or video equivalent. How will you translate your scholarly understanding to a non-scholarly audience?

Steps

1. Review the sample lesson plan on Bb.
2. As you read the assigned book, think about what themes or questions you would like to communicate.
3. Choose a primary source that addresses those themes or questions. It should be brief enough that your classmates can read, listen to, or watch it in no more than 5 minutes. You are welcome to choose a source that is cited in the assigned text, though preferably not one that the author addresses at great length. **Please limit your source to two pages or five minutes of audio or video**, excerpting as necessary. Please format texts as PDFs that can be distributed to the class.
4. Prepare a lesson plan (500-1000 words) for the discussion with the following sections:
 - Claims. Summarize one or more (not all) of the major claims of the seminar text, quoting as appropriate.
 - Primary source: Please provide full bibliographic information for the source you will use. Explain your choice of primary source and its relation to the assigned readings. Imagine you were teaching undergraduates, preparing a museum or website exhibit, or scripting a documentary film, and you wanted to convey some of the insights from the assigned scholarly book without requiring people to read that text. What concepts would the primary source introduce on its own?
 - Goals: what are the most important facts and concepts that students should take away from the readings.
 - Questions: List questions about both the assigned readings and primary source. Aim for open-ended, interpretive questions, rather than specific factual questions.

Please post your source to the Assignments section of class Blackboard site by 1pm on the day you will lead discussion, along with a brief analysis or two or three discussion questions. For instructions on writing an analysis, see "How to Read a Primary Source," "Document Analysis," and "Image Analysis," all at <http://historyprofessor.org>.

Please note that items posted to the Assignment section of Blackboard will not be visible to your classmates. If you wish to share items with the class, please post those to the class blog on Blackboard.

5. Lead discussion. You will have about 30 minutes to lead a discussion on your source, based on your lesson plan. This includes the time your classmates will need to read, listen to, or view the source.

Goals

- Give you experience leading discussions and preparing materials for discussion.
- Give you experience translating the questions and claims of scholarly history into more accessible formats.
- Give you the chance to explore your own special interests by selecting primary and secondary materials that shed alternative perspectives on the common readings.
- Enliven class discussions by bringing in those new perspectives.
- Aid your instructor and classmates in teaching future courses in this period.

For these discussions, imagine that you are presenting the material in the week's assigned reading to an audience—high school or undergraduate students, visitors to a museum, viewers of a documentary—who will never read the scholarly text but who could benefit from its insights.

Pitfalls

- Source is too thin. Example: a brief video clip of someone shouting a slogan, or a one-panel political cartoon. These may be important sources, but not enough to sustain a 30-minute discussion. Combine with other short sources, or find something longer.
- Source is purely factual. Straight news reports tend not to work as well as editorials, speeches, advertisements, sermons, etc. One exception is if a student provides conflicting reports of the same event.
- Source is tangential to the assigned reading. Find a source that helps answer the book's main questions.
- Source is improperly cited. Student finds a source in a secondary source (such as a TV documentary) or on social media (YouTube, blog, etc.) and fails to track down the original. Without information about the context in which the source was created, the class cannot analyze it fully.
- Source does not answer discussion questions. The goal is to match questions and sources, to make your classmates researchers.

Final project: 20 percent

Early in the semester, you should begin work on an independent project. In our final session, you will present your work to the seminar, and during exam period you will submit a written version on Bb.

Write a proposal for an article-length research project on a topic in the history of technology.

The proposal should include a thorough exploration of all scholarship about the particular subject, an explanation of why further research is needed, and a description of available primary sources and how they would answer the research question. The total length should be about 2500-3000 words, including bibliography.

See "How to Write a Prospectus" <<http://historyprofessor.org/research/how-to-write-a-prospectus/>> for general format. The Sample Application Narratives for the NEH Fellowships program <<http://www.neh.gov/grants/research/fellowships>> offer good models, though of course you will need to scale them down. See especially American History, African Americans who Returned to the United States from Canada after the Civil War and Latin American Studies, The Creole Circus and the Theater in Argentina and Uruguay, 1860-1910.

This assignment is designed to:

- Give you practice in identifying primary and secondary sources.
- Give you practice in identifying scholarly questions requiring original research.
- Allow you to explore a research interest beyond the assigned readings.
- Give you experience with public presentation.

Schedule

Introductions

August 24

- W. Caleb McDaniel. "How to Discuss a Book for History." W. Caleb McDaniel, August 19, 2013. <http://wcm1.web.rice.edu/howtodiscuss.html>.
- Wiebe E. Bijker, "American and Dutch Coastal Engineering: Differences in Risk Conception and Differences in Technological Culture," *Social Studies of Science* 37, no. 1 (2007): 143–51.
- Melvin Kranzberg, "Technology and History: 'Kranzberg's Laws.'" *Technology and Culture* 27 (1986): 544–560.
- Langdon Winner, "Do Artifacts Have Politics?" *Daedalus* 109, no. 1 (1980): 121–136.
- Bernward Joerges, "Do Politics Have Artefacts?" *Social Studies of Science* 29, no. 3 (1999): 411–31.
- Bruce E. Seely, "The Scientific Mystique in Engineering: Highway Research at the Bureau of Public Roads, 1918-1940." *Technology and Culture* 25, no. 4 (1984): 798–831.
- Reading response due on Bb, 2pm.

Unit 1. Expertise

August 31.

- Scott, *Seeing Like a State*
- Reading response due on Bb, 2pm.

September 7.

NO CLASS. LABOR DAY.

September 14.

- Hecht, *Radiance of France*. You can skim the Callon preface.
- Reading response due on Bb, 2pm.
- In class: Presentation by Josh Levy, Library of Congress

September 21.

- Oreskes and Conway, *Merchants of Doubt*.
- Reading response due on Bb, 2pm.

Unit 2. Surveillance

September 28. **Class begins 8:20 pm**

- Vaughn, *Mapping Society*
- Reading response due on Bb, 2pm.
- Unit 1 essay due on Bb, 7:00pm.

October 5

- Otter, *Victorian Eye*
- Reading response due on Bb, 2pm.

Tuesday, October 13

- Seo, *Policing the Open Road*
- Stephen Bohigian, "'Not So Much Orwellian as Kafkaesque': The War on Crime, Information Sharing Systems, and the Limits of Criminal Justice Modernization and Surveillance in Los Angeles County," *Journal of Urban History*, July 24, 2020.
- Reading response due on Bb, 2pm.

Unit 3. Electricity

October 19

- Gooday, *Domesticating Electricity*
- Moses Chikowero, "Subalternating Currents: Electrification and Power Politics in Bulawayo, Colonial Zimbabwe, 1894-1939," *Journal of Southern African Studies* 33, no. 2 (June 2007): 287–306
- Reading response due on Bb, 2pm.
- Unit 2 essay due on Bb, 7:00pm.

October 26

- Meiton. *Electrical Palestine*.
- Sorcha O' Brien, *Powering the Nation: Images of the Shannon Scheme and Electricity in Ireland* (Portland, Ireland: Irish Academic Press, 2017), chapter 6.
<http://ebookcentral.proquest.com/lib/gmu/detail.action?docID=5180275>.
- Reading response due on Bb, 2pm.

November 2

While the Cater is the main reading, it may help to read the Spinak first.

- Abby Spinak, "'Not Quite So Freely as Air': Electrical Statecraft in North America," *Technology and Culture* 61, no. 1 (2020): 71–108, <https://doi.org/10.1353/tech.2020.0033>.
- Cater, *Regenerating Dixie*
- Reading response due on Bb, 2pm.

Unit 4. Aviation

November 9

- Palmer, *Dictatorship of the Air*
- Reading response due on Bb, 2pm.
- Unit 3 essay due on Bb, 7:00pm.

November 16

- Fritzsche, *Nation of Fliers*
- Willie Hiatt, "Flying 'Cholo': Incas, Airplanes, and the Construction of Andean Modernity in 1920s Cuzco, Peru," *The Americas* 63, no. 3 (2007): 327–58. (The author and title are misspelled in JSTOR, so use the Project Muse link: <https://muse-jhu-edu.mutex.gmu.edu/article/210460> .)
- Reading response due on Bb, 2pm.

November 23

- Van Vleck, *Empire of the Air*

- Reading response due on Bb, 2pm.

Course conclusion

November 30

Final project presentations.

- Unit 4 essay due on Bb, 7:00pm.

December 14

10:15 pm. Final project due on Blackboard.