History 302 / Anthropology 302A

Technopolitics: Materiality, Power, Theory

Fall 2019
Thursdays 12-2:50pm
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This graduate seminar provides a lively introduction to some of the major themes and issues in the field of Science and Technology Studies (STS). How do technologies and material assemblages perform power? How are their designs and uses shaped by social, cultural, and political dynamics? How do they shape those dynamics? The course draws on an interdisciplinary body of literature in humanities and social science, mixing theoretical material with more empirically oriented studies. We will read a mix of classics and new scholarship.

Course requirements

Talking & listening

This is a discussion seminar. Its success depends on the commitment and involvement of all members. Therefore, you are expected to arrive thoroughly prepared to participate actively in all discussions. Participation is not just about talking – it’s also about listening and noticing. This is particularly important with a multi-disciplinary group: we must speak in ways that others can understand, hear unfamiliar concepts and engage with them seriously, and avoid the temptation to show off esoteric knowledge with fashionable jargon or name-dropping.

It’s especially important to give others the space to talk. If you’re one of those people who always has something to say, try holding back sometimes. If you’re someone whose heart races every time they raise their hand to contribute, take heart: that was me, 30 years ago. We want to hear you, even if the thought isn’t well-formed. Everyone, regardless of self-identification, should endeavor to notice and correct any unfortunate gender (or other) dynamics that may emerge. I cannot stress this latter bit enough: it’s up to everyone to work on this. If class dynamics are troubling you in any way, please talk to me about it, and we’ll work together to address the issues.

Attendance is mandatory. Absences should occur only in case of dire need and should be cleared in advance if at all possible. Please make every effort to arrive on time and ready to go by the official start time.

Alas, recent experience – in a graduate seminar, no less – compels me to specify the following, even though for most of you this will be stunningly obvious. You are expected to be mentally present during class time. Communication devices/modes should be off. Only use your laptop to refer to the readings. We can all tell when you’re using it for other purposes: it’s not only rude, but also distracting. I will call you out if I get the sense that you’re off in the fourth dimension.
**Reading**

As is typical of grad seminars, most of your work involves reading academic books and articles. Reading all the material is essential. Before you plunge in, I strongly recommend reading Paul N. Edwards, “How to Read a Book,” available on Canvas or in the “Pedagogical Essays” of the author’s website: http://pne.people.si.umich.edu/essays.html. Even the most accomplished and experienced students, postdocs, and faculty find this guide useful for getting through large amounts of reading in limited amounts of time.

PhD students in the humanities and social sciences are taught to critique. That’s an important skill. But you should not conflate critique with criticism. Critique represents serious engagement, while criticism all too often involves demolition. Make every effort to engage with readings on their own terms. What did the author intend? Who is their audience? What value can you find in their arguments? Is the evidence they present persuasive -- does it support these arguments? Would additional (or different) evidence have produced a different argument? Once you’ve thought about all this in good faith — and only then — you can ask: how might this piece be different if it were written today, or if someone else had written it? Do you think the author posed good questions? If not, how else might you frame a project on this topic?

Most readings are on Canvas, except the following books which are available for purchase through the Stanford bookstore. Note that the Oldenziel volume is also available as an eBook through the library, but the scan is of poor quality, so you may prefer a print copy. Assuming other patrons cooperated with recall notices, you should find these assigned books – as well as the books in the “suggested readings” category – on reserve in the library.


**Leading class discussion – starting week 3**

Twice during the quarter – sometimes in partnership with another student – you will lead class discussion. Sometimes the session will be broken up in 2 parts – in those instances, you’ll sign up to lead one of the two parts.

1) Do a little research on the author(s). What’s their disciplinary background? What else have they published? Look for information that illuminates the arguments you read, and that helps to situate them relative to other literature. You should look at reviews of some of the suggested readings to help you with this task, or use Edwards’s techniques to browse through a few of them. Prepare a brief presentation that contextualizes the required reading.
2) Prepare a 1-page handout as an aid to class discussion (in conjunction with your presentation partner if applicable). This handout should list what you consider to be the three or four most significant analytical points for the session (or the part of the session you’re in charge of). Accompany each point by a discussion question. Write the handout in outline or bulleted form, rather than continuous prose. 12-pt font. Do not exceed 1 side of 1 page. Please bring enough paper copies of the handout to distribute to all class members.

At the beginning of that class session or section, you will spend no more than 15 minutes (total, max, will be timed) presenting background (5-7 min) and elaborating on the discussion questions (8-10 min). These presentations MUST be delivered without reading from a text (a skill you should all be practicing). All presenters should participate equally.

At the end of this presentation, you (and your partner if applicable) will lead discussion for at least 30 minutes. This is an active process: don’t just say “what do you think?” and then wait for replies! You should have several strategies planned so that you can adapt to the flow of the discussion as it evolves. You may cold-call your classmates if they aren’t cooperating with your leadership.

**Writing**

**Weekly responses.** Starting with our second meeting, you must post a weekly reading response. These are due on Canvas by 5 pm the day before class. Specific prompts are posted after each week’s reading list. You’ll notice that most of these aren’t standard “respond to the reading” assignments. Instead, they constitute invitations to experiment with genre. In all cases, the product should be polished, well-crafted, and free of typos. The craft of writing takes a lifetime to master. I, for one, am still working on my prose. The stronger your writing, the more persuasive your argument. My favorite sentence in the English language comes from E. B. White: *Omit needless words.* Take that to heart! Chase down passive constructions, proliferating prepositional phrases, and other forms of verbal throat-clearing. Edit ruthlessly. This takes time, so you should leave yourself time to edit and revise. Use the Hume center as needed. Be sure to respect word limits. These are all important academic skills; they only come naturally after a lot of practice.

**Final project.** The final project will be a review essay of 5-6 books (or the equivalent in articles) of around 3000-4000 (max) words (not including references). You may select a group of texts from the Suggested Reading portion of each week, or assemble your own coherent group. **If you choose the latter option, you must clear your selection with me no later than November 11.**

Proposals consisting of an overview paragraph and annotated list of readings (~75 words per reading) are due November 18. Please email these proposals directly to me as a Word attachment.

Final papers are due December 13. Again, email these directly to me as Word attachments... but ALSO post on Canvas in the designated spot. You are strongly encouraged to read each other’s final papers, particularly if you plan to make STS a central field in your work.
Honor Code, Fundamental Standard, and Learning Needs:

All students are responsible for fully understanding and following the Honor Code. Students must also abide by the Fundamental Standard. If you have any questions about plagiarism and the honor code, you should speak directly with me and/or visit: https://communitystandards.stanford.edu.

Students eligible for accommodations should register with the Office of Accessible Education (563 Salvatierra Walk, https://oae.stanford.edu). You must inform me during the first week of class of any accommodations you require. Rest assured that I have a lot of experience – both personal and professional – addressing accommodation requests. I will help to the fullest extent possible, and will respect your confidentiality.
Class schedule

9/26  Week 1: Introduction


10/3  Week 2: Social Construction of Technology

We will split the class into two groups, with half reading Option A and the other half reading Option B.

Option A group:


Option B group:


Everyone read:


Weekly response:  Find 3-5 academic reviews of the book you read, no more than 4 years past its publication. See what you can find out about the author. Now imagine the book is about to get published in a new edition, and you've been commissioned to write a preface. Write a few paragraphs exploring an aspect of the book’s argument that has fresh or enduring relevance. (600-800 words)

In addition, come to class having identified 3-4 quotes from your book, and one from the common article, that capture aspects of the argument that you found significant, compelling, provocative, and/or problematic. Please type these out, including page numbers, and bring hard copies for everyone in your group + me (i.e., ~ 9 copies).

Suggested reading:

- Thomas Misa, Leonardo to the Internet: Technology and Culture from the Renaissance to the Present
- David E. Nye, Technology Matters: Questions to Live With
- Wiebe Bijker, Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change
- Nelly Oudshoorn and Trevor Pinch, eds., How Users Matter: The Co-Construction of Users and Technology
- Susan J. Douglas, Inventing American Broadcasting, 1899-1922
- Claude Fischer, America Calling: A Social History of the Telephone to 1940
- Thomas P. Hughes, American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970
10/10  Week 3: Power and “Technology”

Part 1 presenter/leader(s):


Part 2 presenter/leader(s):


Weekly response: What is Technology? (600-800 words)

Suggested reading:

- Ruth Schwartz Cowan, *More Work for Mother: The Ironies Of Household Technology From The Open Hearth To The Microwave*
- Francesca Bray, *Technology, Gender and History in Imperial China: Great Transformations Reconsidered*
- Clapperton Chakanetsa Mavhunga, ed., *What do Science, Technology, and Innovation Mean from Africa?*
- Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*
- Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*
- Janet Abbate, *Recoding Gender: Women’s Changing Participation in Computing*
10/17  Week 4: Actor Network Theory

**Part 1 presenter/leader(s):**


**Part 2 presenter/leader(s):**


**Weekly response:** Choose an object and analyze it through an ANT lens. Refer to the readings in your analysis. Post on Canvas with a picture of the object; bring the object or its image to class. (800-1000 words)
10/24  Week 5: Technopolitics. Guest faculty: Prof. Paul N. Edwards (current director of Stanford’s STS program)

**Part 1 presenter/leader(s):**


**Part 2 presenter/leader(s):**


Weekly response: Compare & contrast the approaches to technopolitics (and predecessor approaches) displayed by the authors. How does the analytic leverage offered by various approaches differ? (800-1000 words)

**Suggested reading:**

- Ken Alder, *Engineering the Revolution: Arms and Enlightenment in France, 1763-1815*
- Sara Pritchard, *Confluence: The Nature of Technology and the Remaking of the Rhône*
- Toby Jones, *Desert Kingdom: How Oil and Water Forged Modern Saudi Arabia*
- Eden Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende’s Chile*
• Sonja Schmid, *Producing Power: The Pre-Chernobyl History of the Soviet Nuclear Industry*
• Chandra Mukerji, *Impossible Engineering: Technology and Territoriality on the Canal du Midi*
• Keith Breckenridge, *The Biometric State: The Global Politics of Identification and Surveillance in South Africa, 1850 to the Present*
• Gabrielle Hecht, ed., *Entangled Geographies: Empire and Technopolitics in the Global Cold War*
• Andrew Barry, *Material Politics: Disputes Along the Pipeline*
• Andrew Barry, *Political Machines: Governing a Technological Society*
• Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil*
• Brian Wynne, *Rationality and Ritual: The Windscale Inquiry and Nuclear Decisions in Britain*
• Richard Sclove, *Democracy and Technology*
• Noortje Marres, *Material Participation: Technology, the Environment and Everyday Publics*
• Antina von Schnitzler, *Democracy's Infrastructure: Techno-Politics and Protest After Apartheid*

10/31  Week 6: Design Power

**Part 1 presenter/leader(s):**


**Part 2 presenter/leader(s):**


Weekly response: Imagine that you’ve organized a big university event featuring Weizman and Benjamin. It’s up to you to introduce the themes of the panel and the two presenters. Write this introduction. (800-1000 words)

**Suggested reading:**

• Nicole Starosielski, *The Undersea Network*
• Natasha Schüll, *Addiction by Design: Machine Gambling in Las Vegas*
• Donald Mackenzie, *An Engine not a Camera: How Financial Models Shape Markets*
• S. Lochlann Jain, *Injury: The Politics of Product Design and Safety Law in the United States*
• Tiago Saraiva, *Fascist Pigs: Technoscientific Organisms and the History of Fascism*
• Lisa Nakamura, *Digitizing Race: Visual Cultures of the Internet*
• Stephen Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*
• Simone Browne, *Dark Matters: On the Surveillance of Blackness*
• Virginia Eubanks, *Automating Inequality: How High-Tech tools Profile, Police, and Punish the Poor*
• Ken Alder, *The Lie Detectors: The History of an American Obsession*
11/07  Week 7: Seeing / Knowing / Sensing

Part 1 presenter/leader(s):


Part 2 presenter/leader(s):


Weekly response: Write a peer-review report for a university press of Gabrys’s book. Base your discussion of how it relates to existing literature on the readings for Part 1 and a quick perusal of the suggested readings. (800-1000 words)

Suggested reading:

- Michelle Murphy, *Sick Building Syndrome and the Problem of Uncertainty: Environmental Politics, Technoscience, and Women Workers*
- Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences*
- Rudolf Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*
- Stefan Helmreich, *Alien Ocean: Anthropological Voyages in Microbial Seas*
- Ken Alder, *The Measure of All Things: The Seven Year Odyssey and the Hidden Error that Transformed the World*

11/14  Week 8: Air

Presenters/leaders (at least 2 for the whole session):


**Weekly response:** Use the readings as inspiration to reflect on your encounters with air (600-800 words).

**Suggested reading:**
- Derek P. McCormack, *Atmospheric Things: On the Allure of Elemental Envelopment*
- Gregg Mitman, *Breathing Space: How Allergies Shape Our Lives and Landscapes*
- Alison Kenner, *Breathtaking: Asthma Care in a Time of Climate Change*
- Javier Auyero and Débora Alejandra Swistun, *Flammable: Environmental Suffering in an Argentine Shantytown*
- Kim Fortun, *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders*
- David Naguib Pellow, *Resisting Global Toxics: Transnational Movements for Environmental Justice*
- Judith Shapiro, *Mao’s War against Nature: Politics and the Environment in Revolutionary China*
- Dorceta Taylor, *Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility*

**11/21  Week 9: Catastrophic Times**

**Part 1 presenter/leader(s):**


**View:**
Part 2 presenter/leader(s):


Michelle Murphy, “Alterlife and Decolonial Chemical Relations.” *Cultural Anthropology* 32, no. 4 (2017): 494–503. [https://doi.org/10.14506/ca32.4.02](https://doi.org/10.14506/ca32.4.02).


Weekly response: Write a blurb for the Bonneuil & Fressoz book (200 words) that could go in a book catalogue. Also: Identify a sentence or two (max) in the two videos each Part 2 reading that you think is particularly useful, provocative, or otherwise worthy of discussion. The Canvas site will be set up to gather these quotes.

Suggested reading:

- Scott Knowles, *The Disaster Experts: Mastering Risk in Modern America*
- J. R. McNeil and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945*
- Simon Lewis & Mark Maslin, *The Human Planet: How We Created the Anthropocene*
- Jason Kelly, Philip Scarpino, Helen Berry, James Syvitski, and Michel Meybeck, eds., *Rivers of the Anthropocene*
- Gareth Austin, ed., *Economic Development and Environmental History in the Anthropocene: Perspectives on Asia and Africa*
- Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*
- Jedediah Purdy, *After Nature: A Politics for the Anthropocene*
- Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*
- Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*
12/5  Week 10: Maintenance, Care, & Repair

Presenters/leaders (at least 2 for the whole session):


Weekly response: Free-form! Anything goes, as long your response relates clearly to the readings and is of a scope and depth comparable to previous responses (excepting Week 9, which is deliberately shorter and easier).

Suggested reading:

• Maria Puig de la Bellacassa, Matters of Care: Speculative Ethics in More Than Human Worlds
• Gaston Gordillo, Rubble: The Afterlife of Destruction
• Stephen Cairns and Jane Jacobs, Buildings Must Die: A Perverse View of Architecture
• Ann Stoler, ed., Imperial Debris: On Ruins and Ruination
Additional resources

Field overviews:

*The Handbook of Science and Technology Studies, Third Edition* (Cambridge, MA: MIT Press). Note there are 4 editions, each quite different.


Book series:


Journals:

*Catalyst: Feminism, Theory, and Technoscience*

*East Asian Science, Technology and Society*

*eSTS: Engaging Science, Technology, and Society*

*History and Technology*

*Science, Technology, and Human Values*

*Science & Technology Studies*

*Social Studies of Science*

*Tapuya: Latin American Science, Technology and Society*

*Technology and Culture*

For a longer list of journals that regularly publish STS work, see this page on the 4S website: [https://www.4sonline.org/resources/journals](https://www.4sonline.org/resources/journals)

Professional Societies:

European Association for the Study of Science and Technology

Society for the History of Technology

Society for the Social Studies of Science (4S)

For a longer list of STS-related professional societies, see this page on the 4S website: [https://www.4sonline.org/resources/professional_associations](https://www.4sonline.org/resources/professional_associations)