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History of Science, Medicine and Technology 140.601
An Introduction to Historical Methods Fall 2009
Meetings Wednesdays 4:30-6:30

This course is composed of three strands: 1. An introduction to current topics in the history of science, medicine and technology. 2. An introduction to the history of the discipline(s). 3. An introduction to historical research and writing methods. Class time will be focused on discussion of assigned articles and of research tactics and strategies based on your own research project for the semester or year. Written assignments are designed to strengthen analytic skills and to complement your own ongoing research in other seminars. When the written assignments focus on your own research project during the second half of the course, you are still expected to take notes on each article in terms of methods and sources, contributions, limitations, and questions left unanswered. Articles on-line at MSE's e-reserves under Hanson/Marks.

Required Books: Ludmilla Jordanova, *History in Practice* 2nd ed. (London: Hodder Arnold Publishers, 2006) and Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, *The Craft of Research* (Univ of Chicago Press, 1995). Available at B&N Campus Bookstore

Week 1 Sept. 2nd Introduction: Primary Sources & Historical Evidence

Week 2 Sept. 9th How Historians Argue

Thomas C. Smith, "Peasant Time and Factory Time in Japan," *Past & Present* 111 (1986): 165-197.

David C Mengel, "From Venice to Jerusalem and Beyond: Milic of Kromeriz and the Topography of Prostitution in Fourteenth-Century Prague," *Speculum* 29 (2004): 406-42.

David Eltis, Philip Morgan and David Richardson, "Agency and Diaspora in Atlantic History: Reassessing the African Contribution to Rice Cultivation in the Americas," *American Historical Review* 112 (2007): 1329-1358.

Assignment: Write a page on one of these articles, summarizing the article rather than recounting it in detail. Cut to the chase; get to the core of the argument.

Week 3 Sept. 16th From Whence We Came: the Scientific Revolution Issue

Thomas Kuhn, *The Structure of Scientific Revolutions*, 2nd rev. ed., (Chicago: University of Chicago Press 1970): 10-42, 92-110.

Andrew Cunningham and Perry Williams, "De-centering the 'big picture': 'The origins of modern science' and the modern origins of science," *British Journal for the History of Science* 26 (1993): 387-483.

Gregory Blue, "Science(s), Civilization(s), Historie(s): A continuing dialogue with Joseph Needham," in Irfan Habib, Dhruv Raina, eds., *Situating the History of Science. Dialogues with Joseph Needham* (Oxford University Press, 1999): 29-72.

Peter Dear, "What Is the History of Science the History Of? Early Modern Roots of the Ideology of Modern Science," *Isis* 26 (2005): 390-406.

Harold J Cook, "The Cutting Edge of a Revolution? Medicine and Natural History Near the Shores of the North Sea," in JV Field and Frank AJL James, eds. *Renaissance and Revolution. Humanists, Scholars, Craftsmen and Natural Philosophers in Early Modern Europe* (Cambridge University Press, 1993): 45-62.

Assignment: Summarize the approach to and reappraisal of the "scientific revolution" issue of one of the sources above. Are you convinced or not by the author's arguments? Why? Why not? (2 pp.)

Week 3 TBA LIBRARY SESSION WITH CHRISTINE RUGGERE

Assignment: Prepare by working through exercises in library research handout.

Week 4 Sept 23 Nature and Empire

Bruno Latour, ch. 6 "Centres of Calculation" in idem, *Science in Action* (Harvard University Press, 1987): 215-37.

Michael Adas, ch. 3 "Global Hegemony and the Rise of Technology as the Main Measure of Human Achievement," in idem, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Cornell University Press, 1989): 133-98.

Richard Grove, "Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature," in Richard H. Grove, Vinita Damodaran, Saptal Sangwan, eds. *Nature and the Orient. The Environmental History of South and Southeast Asia* (Oxford University Press, 1998): 187-209.

Ruth Rogaski, "Nature, Annihilation, and Modernity: China's Korean War Germ Warfare Experience Reconsidered," *JAS* 61.2 (2002): 381-415.

Assignment: Summarize the key argument of one article that brings together these two major themes in the history of science and in history. How are nature and empire figured in this article?

Week 5 Sept 30th Workplaces 1: The Field & The Museum

Donna Haraway, "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York City 1908-1936," in *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (Routledge, 1989): 26-58.

Susan Leigh Star, James R. Griesemer, "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology," *Social Studies of Science* 19.3 (1989): 1907-39.

Paula Findlen, *Possessing Nature. Museums, Collecting and Scientific Culture in Early Modern Italy* (University of California Press, 1994): 97-154.

Lynette Schumaker, "A Tent with a View: Colonial Officers, Anthropologists, and the Making of the Field in Northern Rhodesia," *Osiris* 11 (1996): 237-58.

Weeks 5 or 6 TBA Workshop on Plagiarism

Writing a "Book Review": Analyze one article by discussing 5 aspects: its argument, analytical methods, primary sources, contributions, and limitations. 3 pp max. [For guidelines on how to

write a balanced assessment, see e-reserves George Sarton, "Notes on the Reviewing of Learned Books," *Science* vol. 131, No. 3408 (1960): 1182-87.]

Week 6 Oct. 7th Workplaces 2: The Laboratory

Nathan Sivin, "Chinese Alchemy and the Manipulation of Time," In Sivin, ed. *Science and Technology in East Asia, History of Science: Selections from Isis* (New York: Science History Publications, 1977): 109-22.

Bruno Latour, "Give Me a Laboratory and I will Raise the World," in Karin Knorr-Cetina and Michael Mulkay, eds., *Science Observed* (London: 1983): 141-170.

[Owen Hannaway, "Laboratory Design and the Aim of Science. Andreas Libavius versus Tycho Brahe," *Isis* 77 (1986): 585-610. Worth reading as background for Shackelford.]

Jole Shackelford, "Tycho Brahe, Laboratory Design, and the Aim of Science. Reading Plans in Context," *Isis* 84 (1993): 211-30.

Graeme Gooday, "Placing or Replacing the Laboratory in the History of Science?," *Isis* 99 (2008): 783-795.

Read: *The Craft of Research*, Part I, Research, Researchers, and Readers, 1-28.

Jordanova, *History in Practice*, ch. 1, "Introduction," 13-34.

Assignment: The History of the Disciplines. You may work as a group on this project. Choose a representative year from the 1930s, the 1950s, the 1970s and the 1990s from *Isis*, *Bulletin of the History of Medicine*, or *Technology and Culture*. (nb. *T&C* only starts in 1959 -- choose a year from the early 1960s, the '70s and the '90s). Analyze the changes and continuities in the journals over time in a presentation in class. Questions you might consider include: What kinds of topics and arguments were made? Was there a chronological or geographical focus? Can you tell what sorts of people were publishing? What kinds of sources did they use? What else was in the journal besides scholarly articles? (Note: 3 of the 4 articles this week were published in *ISIS*).

Other Possible Journals: *British Journal of the History of Science*, *Minerva*, *Osiris*, *Social History of Medicine*, *Social Studies of Science*, *Medical History*. For history of *Chinese Science/East Asian Science Technology and Medicine*, see Hanson, "New Directions in the History of Science in East Asia," *East Asian Science Technology & Medicine* 19 (2002): 107-19.

Week 7 Oct 14th Making Knowledge: Material Practices

Katharine Park, "The Life of the Corpse: Division and Dissection in Late Medieval Europe," *Journal of the History of Medicine and Allied Sciences* 50 (1995): 111-32.

Francesca Bray, "Towards a critical history of non-western knowledge," in Timothy Brook and Gregory Blue, eds., *China and Historical Capitalism. Genealogies of Sinological Knowledge* (Cambridge University Press, 1999): 158-209.

Annemarie Mol, "Making Links, Missing Links: The Performance of Some Atheroscleroses," in Marc Berg & Annemarie Mol, eds. *Differences in Medicine* (Duke University Press, 1998): 144-165.

Chandra Mukerji, "Tacit Knowledge and Classical Technique in Seventeenth-Century France: Hydraulic Cement as a Living Practice among Masons and Military Engineers," *Technology & Culture* 47 (Oct 2006): 713-33.

Read: *The Craft of Research*, Part II Asking Questions, Finding Answers," 29-84.

Jordanova, *History in Practice*, ch. 5 “Periodisation,” 105-25.

Written Assignment based on your research: Write 2 pp on the questions you are asking, the primary sources you are planning to use, and your reasoning for the periodization you have chosen in your research paper. Include a preliminary bibliography.

Week 8 Oct 21st Making Knowledge: The Workers

David F Noble, *Forces of Production. A Social History of Industrial Automation* (Alfred P. Knopf, 1984): 265-323.

Steven Shapin, “The Invisible Technician,” *American Scientist* 77 (1989): 554-563.

Ann Secord, “Science in the Pub: Artisan Botanists in Early Nineteenth-century Lancashire,” *History of Science* 32 (1994): 269-315.

Kapil Raj, “Colonial Encounters and the Forging of New Knowledge and National Identities: Great Britain and India, 1760-1850,” *Osiris*, 15 (2001): 119-134.

Read: *The Craft of Research*, Part III Making a Claim and Supporting it, pp. 85-148.

Jordanova, *History in Practice*, ch. 7 “Historians’ Skills,” 150-73.

Written Assignment: Making an argument: Complete a preliminary outline of your research paper asking yourself what work is your evidence doing for your central argument? Indicate what evidence you are using and what interpretative methods you are employing. 2-3 pp.

Week 9 Oct 28th Making Knowledge: The Tools

Larry Owens, “Vannevar Bush and the Differential Analyzer: The Text and Context of an Early Computer,” *Technology and Culture* 27 (1986): 63-95.

Simon Schaffer, “Machine Philosophy: Demonstration Devices in Georgian Mechanics,” *Osiris* 9 (1993): 157-82.

Ellen B Koch, “In the Image of Science? Negotiating the Development of Diagnostic Ultrasound in the Cultures of Surgery and Radiology,” *Technology and Culture* 34 (1993): 858-893.

Richard Sorrenson, “The Ship as a Scientific Instrument in the Eighteenth Century,” Issue on “Science in the Field” *Osiris* 11 (1996): 221-236.

Ken Alder, “Innovation and Amnesia: Engineering Rationality and the Fate of Interchangeable Parts Manufacturing in France,” *Technology & Culture* 38 (1997): 273-311.

Read: *The Craft of Research*, Part IV Preparing to Draft, Drafting, and Revising, pp. 149-254.

Written Assignment: Write an overview of the secondary literature on your research topic, a “literature review” in 3 pp. Pay attention to how you position your own research in the field. Include a bibliography. [Be prepared as well to discuss the “art of footnotes.” In-class handout.]

Week 10 Nov 4th Writing Knowledge

Stephen M. Stowe, “Singleton's Tooth: Thoughts on the Form and Meaning of Antebellum Southern Family Correspondence,” *Southern Review* 25 (1985): 323-33.

Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump* (Princeton University Press, 1985): 22-79.

Steven M. Stowe, “Writing Orthodoxy at the Bedside,” in *Doctoring the South. Southern Physicians and Everyday Medicine in the Mid-Nineteenth Century* (University of North Carolina Press, 2004): 175-99

Lorraine Daston, “Taking note(s),” *Isis* (2004) 95: 443-8.

Charlotte Furth, "Producing Medical Knowledge through Cases: History, Evidence, and Action," in Furth, Zeitlin, Hsiung, eds., *Thinking With Cases: Specialist Knowledge in Chinese Cultural History* (Honolulu: University of Hawai'i Press, 2007): 125-51.

Read: Review *The Craft of Research*, III, Making a Claim and Supporting it.

Jordanova, *History in Practice*, ch. 4 "The Status of Historical Knowledge," 87-104.

Discussion Assignment: Bring a primary source you are using in your research paper to class. Be prepared to discuss your this source in terms of the sources reliability, typicality, and historical value. Analyze the problems and prospects of the source: who produced this source? why did they produce it? What cautions are necessary in using it?

Week 11 Nov 11th Drawing Knowledge

Lorraine Daston and Peter Galison, *Objectivity* (Zone Books, 2007): pp. 55-113 plus plates 2.4-2.27.

Pamela Smith, "Art, Science, and Visual Culture in Early Modern Europe," *Isis* 97 (2006): 83-100.

Jerome J. Bylebyl, "Interpreting the Fasciculo Anatomy Scene," *Journal of the History of Medicine and Allied Sciences* 45 (1990): 285-316.

Thomas L Hankins, "Blood, Dirt and Nomograms: A Particular History of Graphs," *Isis* 90 (1999): 50-80.

Mary Elizabeth Berry, "Maps are strange," in idem., *Japan in Print. Information and Nation in the Early Modern Age* (University of California Press, 2006): 54-103.

Read: Review *Craft of Research*, Part IV, 12 Communicating Evidence Visually, p. 175-200.

Discussion Assignment: Present (in class) one of your primary sources from the perspective of visual evidence—what kinds of questions do you need to ask of a picture or title page? What other evidence, textual and visual, would you require for a full analysis of the image? Ask if your research requires visual evidence and if anything in your analysis could be better communicated visually.

Week 12 Nov 18th Power and Patronage

Nicolas Jardine, "The Places of Astronomy in Early-Modern Culture," *The Journal of the History of Astronomy* 29 (1998): 49-62.

Nathan Sivin, "Calendar Reform and Occupation Politics," *Ziran kexueshi yanjiu*, 24 Supplement (2005): 58-67.

Martha Baldwin, "The Snakestone Experiments: An Early Modern Medical Debate," *Isis* 86 (1995): 394-418.

Stuart W Leslie, "Profit and loss: The Military and MIT in the postwar era," *Historical Studies in the Physical Sciences* 21 (1990): 60-85.

Read: Review *The Craft of Research*, IV, 14 Revising your organization and argument, 201-14.

Assignment: Revise your "literature review" from week 9 based on comments in class, professor's comments, and your own research since first submission. Update accordingly the detailed outline of your research project from week 8.

Week 13 Dec 2 Histories of Science, Technology, and Medicine and Their “Others”

Margaret C. Jacob, “Science Studies after Social Construction: The Turn toward the Comparative and the Global,” in Victoria E. Bonnell, Lynn Hunt, eds. *Beyond the Cultural Turn* (1999): 95-120.

Sheila Jasanoff, “Reconstructing the past, Constructing the Present: Can Science Studies and the History of Science Live Happily Ever after?” *Social Studies of Science* 30.4 (Aug. 2000): 621-31.

Roger Cooter, “‘Framing’ the End of the Social History of Medicine,” in *Locating Medical History: The Stories and Their Meanings*, ed. by Frank Huisman and John Harley Warner (JHU Press, 2004): 309-337.

Gianna Pomata and Nancy Siraisi, “Introduction,” in idem., *Historia. Empiricism and Erudition in Early Modern Europe* (MIT Press, 2005): 1-38.

Dominique Pestre, “The Historical Heritage of the 19th and 20th Centuries: Techno-science, Markets and Regulations in a Long-term Perspective.” *History and Technology* 23.4 (Dec 2007): 407-20.

Thomas Söderqvist, “Who Will Sort Out the Hundred or More Paul Ehrlichs? Remarks on the Historiography of Recent and Contemporary Technoscience,” idem., ed. *The Historiography of Contemporary Science and Technology* (Harwood Academic Publishers, 1997): 1-18.

Read: Jordanova, *History in Practice*, ch. 2, “Mapping the Discipline of History,” 35-58; and ch. 3 “History and Other Disciplines,” 59-86, ch. 8 “Trends,” 173-95.

Assignment: How does your own research paper fit into larger themes in history? Take 1-2 historical issues or themes and write an essay on how they inform your current research. (2 pages)