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History of Science, Medicine and Technology 140.601
An Introduction to Historical Methods
Fall, 2005

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. Class time will be focused on discussion of assigned articles and of research tactics and strategies. Written assignments are designed to strengthen analytic skills and to complement ongoing research in other seminars.

Required Book: Ludmilla Jordanova, *History in Practice* (London: Arnold Publishers, 2000).

Week 1 Sept. 6 Introduction

The first class will meet at the East Baltimore Campus. Ms. Christine Ruggere will introduce finding sources in the history of STM and be ready to answer questions about how to use the library for your own research interests.

Week 2 Sept. 13 From Whence We've Come: 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-centring 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.

H. Floris Cohen, ch. 6 "The Nonemergence of Early Modern Science outside Western Europe," Parts 6.3-6.6, in *The Scientific Revolution: A Historiographical Inquiry* (Chicago University Press, 1994): 409-490.

Roger Hart, "On the Problem of Chinese Science," *Science Studies Reader* (Routledge, 1999): 189-201.

Jordanova, *History in Practice*, ch. 1 Introduction, 1-21.

Written assignment: write a 1 page summary of the Cunningham and Williams, Cohen, **or** Hart articles. Focus on summarizing the argument of the article rather than recounting it in detail.

Week 3 Sept 20 Nature and Empire

Michael Adas, ch. 3 "Global Hegemony and the Rise of Technology as the Main Measure of Human Achievement," *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Cornell University Press, 1989): 133-198.

Bruno Latour, ch. 6 "Centres of Calculation" in *Science in Action* (Harvard University Press, 1987): 215-237.

Benjamin Elman, "Intro." (Prologue & Ming Classification on the Eve of Jesuit Contact), *On Their*

Own Terms: Science in China, 1550-1900 (Harvard Univ. Press, 2005): 1-60.

Niels Brimnes, "Variolation, Vaccination, and Popular Resistance in Early Colonial South India,"

Medical History 48 (2004): 199-228.

Jordanova, *History in Practice*, ch. 2 Mapping the Discipline of History, 22-58.

Written Assignment: Write an interpretative essay using the methodological insights of either Adas or Latour to understand the arguments made in either Elman or Brimnes. 3pp. max.

Week 4 Sept. 27 Workplaces 1: The Laboratory

Owen Hannaway, "Laboratory Design and the Aim of Science. Andreas Libavius versus Tycho Brahe", *Isis* 77 (1986): 585-610.

Bruno Latour, "Give Me a Laboratory and I will Raise the World," *Science Studies Reader* 258-275. (1983, abridged 1998). Originally in Karin Knorr-Cetina and Michael Mulkay, eds., *Science Observed* (London: Sage, 1983).

Jole Shackelford, "Tycho Brahe, Laboratory Design, and the Aim of Science. Reading Plans in Context", *Isis* 84 (1993): 211-230.

Bridie Andrews, "Tuberculosis and the Assimilation of Germ Theory in China, 1895-1937," *Journal of the History of Medicine and Allied Sciences* 52 (1997): 114-57.

Jordanova, *History in Practice*, ch. 3 "History and Other Disciplines".

Assignment: The History of the Disciplines. Work in groups of 2. 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?

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 article by Hanson, "New Directions in the History of Science in East Asia," *East Asian Science Technology and Medicine* 19 (2002): 107-119.

Week 5 Oct. 4 Workplaces 2: The Field

Henrika Kuklick and Robert E. Kohler, "Intro." *Science in the Field*, *Osiris* 11 (1996): 1-14.

Gregg Mitman, "When Nature Is the Zoo: Vision and Power in the Art and Science of Natural History," *Osiris* 11 (1996): 117-143.

Lynette Schumaker, "A Tent with a View: Colonial Officers, Anthropologists, and the Making of the Field in Northern Rhodesia," *Osiris* 11 (1996): 237-258.

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.

Michael Lynch and John Law, "Pictures, Texts, and Objects: The Literary Language Game of Bird-Watching," *Science Studies Reader* (Routledge, 1999): 317-341.

Jordanova, *History in Practice*, ch. 4 "The Status of Historical Knowledge" 91-113.

Writing Assignment: Summarize one of the assigned articles by discussing its methods, primary sources, contributions, and limitations.

Week 6 Oct 11 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): 111-132.

Anne Larsen Hollerbach, "Of Sangfroid and Sphinx Moths: Cruelty, Public Relations, and the Growth of Entomology in England, 1800-1840" *Osiris* 11 (1996): 201-220.

Francesca Bray, "Technics and Civilization in Late Imperial China: An Essay in the Cultural History of Technology," *Osiris* 13 (1998): 11-33.

M. Collins, "The TEA Set and Tacit Knowledge," *Science Studies Reader* (Routledge, 1999): 95-109.

William K. Storey, "Guns, Race, and Skill in Nineteenth-Century Southern Africa," *Technology &*

Culture (2004): 687-711.

Jordanova, *History in Practice*, ch. 5 "Periodisation" 114-140.

Written Assignment: Discuss the method, sources, contributions, and limitations of one of the assigned articles. Why does the time the article covers matter for the article's argument?

Week 7 Oct 18 Making Knowledge: The Workers

Stuart W. Leslie, "Blue Collar Science: Bringing the Transistor to Life in the Lehigh Valley," *Historical Studies in the Physical and Biological Sciences* 32.1 (2001): 71-113.

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

Deborah Harkness, "Managing an Experimental Household. The Dees of Mortlake and the Practice of Natural Philosophy", *Isis* 88 (1997): 247-262.

Volker Scheid, "Orientations" and "Plurality and Synthesis: Toward a Multisited Ethnography of Chinese Medicine," *Chinese Medicine in Contemporary China: Plurality and Synthesis*, (Duke University Press, 2000): 9-64.

Written Assignment: Secondary Sources and Literature Reviews. Think about how each author above uses secondary sources and presents their arguments within a larger literature on the subject. Be prepared to discuss your strategy for finding secondary sources for your research paper in class.

Compile a complete bibliography of the published works of any one of these authors. Search the databases for all their published book reviews, articles, essays, chapters in books, and books. Include as well citations for book reviews by other authors of their books.

Week 8 Oct 25 Making Knowledge: The Tools

Hughes Evans, "Losing Touch: The Controversy over the Introduction of Blood Pressure Instruments into Medicine", *Technology & Culture* 34 (1993): 784-807.

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

Albert van Helden, "Telescopes and Authority from Galileo to Cassini," Issue on "Instruments" *Osiris* 9 (1994): 9-29.

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

Jordanova, *History in Practice*, ch. 6 "Public History," 141-171.

Written Assignment: Summarize one of the assigned articles with the following questions in mind. Why do tools matter? What range of historical work can tools do? How are tools historical sources and what primary sources are required to uncover their histories?

Week 9 Nov 1 Power and Patronage

Geoffrey Lloyd, "Adversaries and Authorities," in *Adversaries and Authorities: Investigations into ancient Greek and Chinese science*, Ideas in Context, (Cambridge University Press, 1996): 20-47.

Shigeru Nakayama, "Characteristics of Chinese Astrology," *ISIS* 57 (1966): 442-454.

Nicolas Jardine, "The Places of Astronomy in Early-Modern Culture," *The Journal of the History*

of Astronomy 29 (1998): 49-62.

Frances Dawbarn, "New Light on Dr Thomas Moffet: The Triple Roles of an Early Modern Physician, Client, and Patronage Broker," *Medical History* 47 (2003): 3-22.

Written Assignment: In 5 pp. or less, present a primary source (or type of source) you are using in your research paper. Analyze the problems and prospects of the source: who produced this source? why did they produce it? what cautions are necessary in using it? Be prepared to present your analysis to your classmates in terms of the sources reliability, typicality, and historical value.

Week 10 Nov 8 Writing Knowledge

Stephen M. Stowe, "Singleton's Tooth: Thoughts on the Form and Meaning of Antebellum Southern Family Correspondence", *Southern Review* 25 (1985): 323-333.

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

Stephen M. Stowe, "Seeing Themselves at Work: Physicians and the Case Narrative in the Mid-Nineteenth-Century American South", *American Historical Review* 101 (1996): 41-79.

Christopher Cullen, "Yi'an (case statements): the origins of a genre of Chinese medical literature,"

in Elisabeth Hsu, ed, *Innovation in Chinese Medicine* Needham Research Institute Monograph Series (Cambridge University Press, Marta: put in publisher please2000): 297-323.

Jordanova, *History in Practice*, ch. 7 "Historians' Skills," 172-198.

Written Assignment: building on your analysis of a primary source, discuss in 1 pg. the rhetoric(s) employed by one of your primary sources. How does attention to rhetorical forms shape the ways in which you use this source? Can rhetoric tell us something about the source that other means cannot?

Week 11 Nov 15 Drawing Knowledge

Lorraine Daston and Peter Galison, "The Image of Objectivity", *Representations* 40 (1992): 81-128.

Mary E. Fissell, "Hairy Women and Naked Truths: Gender and the Politics of Knowledge in Aristotle's Masterpiece," *William and Mary Quarterly*, LX (2003): 43-74.

Peter Golas, "Technical Representation in China: Tools and Techniques of the Trade"

East Asian Science Technology and Medicine [spell out] 20 (2003): 11-44.

Robert M. Brain and M. Norton Wise, "Muscles and Engines: Indicator Diagrams and Helmholtz's Graphical Methods," *Science Studies Reader*, (Routledge, 1999): 51-66.

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?

Week 12 Nov 22 Consuming Knowledge

Colin Jones, "The Great Chain of Buying: Medical Advertisement, the Bourgeois Public Sphere, and the Origins of the French Revolution", *American Historical Review* 101 (1996): 13-40.

Ronald Kline and Trevor Pinch, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States", *Technology & Culture* 37 (1996), pp. 763-795.

Roger Chartier, "Culture as Appropriation: Popular Cultural Uses in Early Modern France" in Steven L. Kaplan, ed., *Understanding Popular Culture: Europe from the Middle Ages to the Nineteenth Century* (Mouton Publishers, 1984): 175-191.

Volker Scheid, "Patients and the Transformation of Chinese Medicine," in *Chinese Medicine in Contemporary China: Plurality and Synthesis* (Duke University Press, 2000): 107-133.

Written Assignment: Evaluate the primary sources and how the author interpreted them in one of the articles above. What are the strengths and weaknesses of the author's interpretation?

Week 13 Nov 29 Women, Gender, and Science

Margaret C. Jacob and Dorothee Sturkenboom, "A Women's Scientific Society in the West: The Late Eighteenth-Century Assimilation of Science," *Isis* 94 (2003): 217-252.

Margaret Pelling, "Compromised by gender: the role of the male medical practitioner in early modern England," in Hilary Marland and Margaret Pelling, eds., *The Task of Healing: Medicine, Religion and Gender in England and the Netherlands, 1450-1800* (Erasmus Publishing, 1996): 101-133.

Mary Terrall, "Gendered Spaces, Gendered Audiences", *Configurations* 3 (1995): 207-232.

Sharon Traweek, "Pilgrim's Progress: Male Tales Told during a Life in Physics," *Science Studies Reader* (Routledge, 1999): 252-540.

Written Assignment: in 5 pp. or less, analyze a primary source in relation to a secondary source. Does your reading of the primary source support the secondary source? Refute it? Nuance it?

Week 14 Dec 6 Science and Moral Economies

E.P. Thompson, "The Moral Economy of the English Crowd in the Eighteenth Century," *Past and Present* no. 50 (Feb 1971): 76-136.

Lorraine Daston, "The Moral Economy of Science," Issue on "Constructing Knowledge in the History of Science" *Osiris* 10 (1995): 3-24.

Robert Kohler, "Moral Economy, Material Culture, and Community in *Drosophila* Genetics," *Science Studies Reader*, (Routledge, 1999): 243-257.

Crosbie Smith, Ian Higginson, and Phillip Wolstenholme, “Avoiding Equally Extravagance and Parsimony’: The Moral Economy of the Ocean Steamship,” *Technology & Culture* 44 (2003): 443-469.

Written Assignment: Summarize how the concept of “moral economy” is used in one of the articles above written after E.P. Thompson’s influential article. How is it applied differently from its original application in Thompson? Do you see a way to use it in your own research?