

History of Science 720: Introduction to Historiography and Methods
Fall 2000
Tuesdays, 2:25-5 pm
6105 Social Science

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This course serves to introduce you to current problems and approaches in the historiography of science, technology, and medicine, as well as offering some history of these fields. The course is structured around reading and discussion, with writing requirements designed to deepen the thoughtfulness of the discussions. Rather than reading the sometimes traditional "book a week," we will be reading articles that cut across topic areas but are aligned thematically. One object of the course is thus to get you to read beyond the stories and even the particular arguments of the articles to see how the various authors are participating in and contributing to larger methodological trends within the communities of history of science, technology, and medicine.

Course Requirements:

A. Reading Requirements: Each week, we will read three or four essays or chapters in common; you are all responsible for reading and thinking about these. In addition, each week there is a list of "individual readings." I expect you to read at least one of these, and more if you have time and inclination. (See specific weeks for any deviations.) In the first half of the course, there are a number of "classic" books on the list as well. I expect you to read **at least one** of these books—which one is your choice. (See writing requirements below.)

B. Oral Requirements

1. Class attendance and participation. In a seminar that meets once a week, there is little luxury for missing classes. I need to hear a good reason why you must miss a seminar session. Your mere presence, however, does not suffice: you need to come to the discussion prepared to add your thoughtful comments. This means giving yourself enough time to think about the readings as well as pass your eyes over them, and to think about how the readings play off one another. What do they have in common? Do they conflict? What different angles on similar issues, or similar angles on quite different issues, do they offer?

2. Responsibility for presenting the major issues and starting off discussion for TWO weeks. For the week when you are leading the discussion, it would be good to familiarize yourself with as many of the "individual" readings as possible.

3. For the week associated with your "classic" book, you should be prepared to discuss the book if it comes up in class.

C. Writing Requirements:

1. **Due September 5** (first class): a one- to two-page typed/word-processed essay on

something that you find exciting or inspiring about history of science, technology, and/or medicine. This is not intended to duplicate the “statement of purpose” you submitted in your application, which for many of you explained why you wanted to go to graduate school or what your professional aspirations were; rather, it is supposed to tell me what about this field grabs you in your gut or heart or makes your mind reel with intensity. Is there some idea that just really blows you away? Some historical writing you know that you want to emulate? Something about teaching that you are passionate about? Tell me what matters to you about this field.

2. A **critical summary** (600-750 words—the length of a typical *Isis* review) of one “outside” book you have chosen to read. This should summarize the main arguments and sources of evidence of the book and very briefly discuss what you see as especially praiseworthy or problematic. Since the books you are choosing from are all classics (i.e., books that have been around long enough to acquire a reputation as “classic”), it would be artificial in the extreme to review it as if it were a fresh, new book, but I don’t expect you to do a big literature search to see what others have said or what its impact on the field has been. Rather, the point is to provide a summary of the argument and issues for your fellow graduate students, so that they can benefit from your reading. **Due in class 10/24.** Please provide one copy for me and one for each member of the class.

3. **2 think-pieces** (3-4 pages double-spaced) to introduce the issues you wish to raise for the class you are leading. This should entail a critical review of the common readings, drawing out commonalities and differences of purpose and approach. It does not need to treat the readings even-handedly: if one reading seems to you to be worthy of far more intensive discussion, while the others seem simply to spin off from the central issue, feel free to concentrate mainly on the issue(s) you find most crucial. Your think-piece must be available by Monday noon of the week you are presenting so others have a chance to look at it. (Please email to the classlist and place 1 hard copy in reading room, 1 copy in my box).

3. An **historiographic essay** (6-10 pages long—really, the length depends on your topic) deriving from readings for the course. Picking an article, book, or cluster of writings that you find especially thought-provoking, exciting or problematic, analyze the strengths and weaknesses of the approach taken by the author(s), the questions raised for you by the work(s), and the directions it opens up for further analysis. This is an opportunity to spend more time discussing the book you summarized earlier if you wish, perhaps connecting it to other readings. If you choose to, you may also include writings not assigned for this course (from another course, from previous work you have done, or from independent reading), but this is by no means required.

A note on Grades: It is my view that grading individual course components in graduate school (except for a long paper) is somewhat silly. It is your overall performance that counts, and we only give three serious grades. My grading scheme is pretty much the same as other professors in this department: A = excellent work. AB = good work, if not the best that can be expected for this class and for a graduate student. A respectable grade. B = marginal work. If you get more than one “B” in our graduate courses, you are probably in trouble. BC indicates you probably shouldn’t be in grad school.

For students who were excellent undergraduates, who are used to having their performance checked along the way with grades, an “overall performance” grade for a course can create anxiety. How do I know how much time to put into a given component? you ask. How do I

know how I'm doing? On the first question: class participation is extremely important—roughly half your grade. The writing requirements cover the other half, in approximate proportion to their length. On the second question: if you want to know how you're doing along the way, and you don't feel as though you have a clear sense of it, come and ask me. I will be honest and straightforward with you.

About the Readings:

A number of books are available for purchase at the University Book Store on Library Mall (all prices listed are list prices as given by amazon.com).

Required (to read, not to purchase):

Joyce Appleby, Lynn Hunt, and Margaret Jacob, *Telling the Truth about History* (NY: W. W. Norton, 1994), paper, \$13.95. We will be reading almost all of this as part of our common reading near the beginning of the course.

Optional:

Peter Novick, *That Noble Dream: The 'Objectivity Question' and the American Historical Profession* (Cambridge U. Pr., 1988), paper, \$20.95

Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump* (Princeton U. Pr., 19) paper, \$28.95

Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (paper, \$17.95)

R. C. Olby, et al., *Companion to the History of Modern Science* (paper, \$60)

We will be reading individual chapters from Novick and Golinski, so if you don't want to purchase the books, you don't have to. But Novick's is a terrific book that you might want to own; every single historian now growing up in the profession will have read it. Golinski is a very useful survey of how social construction plays out in the history of science; although I am not using the whole thing this year, you might want to own (and read) it to help orient yourself. Shapin and Schaffer, despite its length (456 pages), is probably the one fairly recent work every graduate student in the history of science needs to know about (if not have read cover to cover). Although I have not assigned any particular reading from it, you may well want to own it.

Finally, I put Olby among the optional readings because it is an essential reference source that will be useful to history of science graduate students throughout their graduate career and beyond; I believe it is very much worth owning. There is also a copy in our departmental conference room (7130 Social Science), as well as a copy in Memorial Reference Stacks (non-circulating).

The **common readings** that are not books are available in a course reader for sale in the History of Science Dept. office. A reference copy will be available in the History of Science Conference Room (7130 Social Science). A single copy of **individual** readings will also be available there. Among the individual readings, articles from the journals *Isis*, *Osiris*, and *Technology and Culture* (after 1990) will not be photocopied, as the journals are on the shelves of the reading room. If you want to make a photocopy, you may take the journal volume or master photocopy downstairs long enough to photocopy it at the Social Science Copy Center, but you must return it right away. (These journals are also in Memorial Library.) Of course, you may also want simply

to take notes on the articles the old-fashioned way, which works, too. Part of the idea here is to invite you to get into the habit of reading in the Conference Room—it is my experience that when people read together, they often take breaks to discuss readings, so that the intellectual conversation is already underway before the actual seminar begins—something that makes for a higher level of discussion.

If you don't already have them, it is also worth investing in a high-quality dictionary and the most recent edition of the *Chicago Manual of Style*, which is the book- and article-writing manual of record for the history of science. (You may well be able to get both at used bookstores in the area; be careful, however, not to get earlier copies of the Chicago Manual, as their recommendations have changed in the last edition.) I also find a good thesaurus extremely useful.

Topics Week by Week

9/5: Introduction

What inspires or excites you about the history of STM? What do we mean when we talk about the history (histories?) of science, technology, and medicine?

Part I: Historical and Philosophical Issues

9/12: Using Science to Characterize History

George Sarton, *The Study of the History of Science* (52 pages), NY: Dover, 1954 (orig. 1936, Harvard University Press)

R. G. Collingwood, "Human Nature and Human History," (originally a lecture, delivered in 1935), pp. 205-231 in idem, *The Idea of History*, Oxford: Clarendon Press, 1946.

Jack Hexter, "The Rhetoric of History" (orig. 1968), pp. 15-76 in idem, *Doing History* (Bloomington: Indiana University Press, 1971)

George Sarton (1884-1956) is usually considered the founder of the discipline of the history of science in the U.S. Collingwood (1889-1943) is one of the great twentieth-century philosophers of history. Jack Hexter (1910-) is a leading early modern historian. Each has written about the nature of history (in Sarton's case, the history of science), and in each of the essays you are reading this week, science keeps cropping up as a fundamental point of comparison for understanding the historical method. This week we will consider each essay separately first and then compare them.

1. What does each author state (or imply or assume) are the proper methods and approaches of the historian? What are the historian's appropriate goals, according to each? What pitfalls does the historian face? What hidden assumptions can you find in each essay?

2. Compare the three authors specifically with regard to this point: how are history and science characterized as ways of knowing? Are they different? Similar? How? Any thoughts about the fact that the first two essays were written in the mid-1930s and the third was written in the mid-1960s?

9/19: Science, Objectivity, and the Historical Profession

This week we focus on the historical argument of Appleby et al.; we will spend the next five weeks interrogating particular pieces of their history.

Everyone:

Joyce Appleby, Lynn Hunt, and Margaret Jacob, *Telling the Truth about History* (NY: W. W. Norton, 1994), ALL. (You may skim chapters 3 and 4.)

Review last week's readings.

1. *What is the argument here? At what audience is this book directed? What evidence is marshalled in support of this argument?*
2. *How might the perspectives of Sarton, Collingwood, and Hexter be fit into the overall trajectory presented here? Or can't they be?*

Not in the individual readings packet, but relevant:

"Truth, objectivity, and history: An exchange." (Essays responding to Appleby et al., plus their reply): *Journal of the History of Ideas*, 1995, 56: 651-680

9/26: Alternative Strains in History and History of Science Before WWII

Everyone:

How do Novick and Lindberg enlarge the picture presented by Appleby et al.? What different perspectives do they offer? Do any contradictions emerge? What difference might it make to their forms of argumentation that they are addressing a more scholarly audience?

Review Appleby, pp. 1-90.

Peter Novick, *That Noble Dream: The "Objectivity Question" and the American Historical Profession* (NY: Cambridge University Press, 1988), Ch. 6, "A Changed Climate," pp. 133-167

David C. Lindberg, "Conceptions of The Scientific Revolution from Bacon to Butterfield: A Preliminary Sketch," pp. 1-26 in *Reappraisals of the Scientific Revolution*, ed. D. C. Lindberg and Robert Westman (Cambridge: Cambridge U. Pr. 1990)

Individual Readings:

These articles treat various aspects of the histor(ies) of the history of science, technology, and medicine before World War II. Again, how do they flesh out our picture of the history of STM beyond that presented by the authors we are reading in common? What aspects of the histories of STM seem to be distinct from "general" history in this period, and what aspects do they seem to have in common?

Arnold Thackray, "The Pre-History of an Academic Discipline: The Study of History of Science in the United States, 1891-1941," *Minerva*, 1980, 18: 448-73

Michael Shank, "Lynn Thorndike (1882-1965)" pp. 185-204 in *Medieval Scholarship: Biographical Studies on the Formation of a Discipline, Vol. 1: History*, eds. Helen Damico and Joseph B. Zavadil. (NY: Garland Publishing, 1995)

Arthur P. Molella, "The First Generation: Usher, Mumford, and Giedion," in *In Context: History and the History of Technology*, ed. Stephen Cutcliffe and Robert Post (Bethlehem, PA, 1989)

Elizabeth Fee and Edward T. Mormon, "Doing History, Making Revolution: the Aspirations of Henry E. Sigerist and George Rosen," *Clio Medica* 23 (1993): 275-311

P. G. Werskey, "On the Reception of *Science at the Cross Roads* in England," Introduction to *Science at the Cross Roads*, 2nd edition (London: Frank Cass, 1971)

Loren R. Graham, "The Socio-political Roots of Boris Hessen: Soviet Marxism and the History of Science," *Social Studies of Science*, 1985, 15: 705-22

10/3: History and the Histories of Science, Technology, and Medicine in the Cold War

How was the field of history shaped by the rise of Communism, World War II, and the Cold War? How were history of science and history of technology shaped, institutionally and intellectually, by the cultural and political atmosphere of the Cold War?

Everyone:

Peter Novick, *That Noble Dream*, Ch. 10, "The defense of the West," pp. 281-319

Michael Aaron Dennis, "Historiography of Science: An American Perspective," pp. 1-26 in *Science in the Twentieth Century*, eds. John Krige and Dominique Pestre. (Amsterdam: Harwood Academic, 1997)

Bruce E. Seely, "SHOT, the History of Technology, and Engineering Education," T&C 1995, 739-772.

David Hollinger, "The Defense of Democracy and Robert K. Merton's Formulation of the Scientific Ethos." *Knowledge and Society* 1983, 4: 1-15. Reprinted as pp. 80-96 in idem *Science, Jews, and Secular Culture. Studies in Mid-Twentieth-Century American Intellectual History* (Princeton: Princeton Univ. Pr., 1996)

Individual Readings:

Robert K. Merton, "A Note on Science and Democracy," *Journal of Legal and Political Sociology* 1942, 1:115-126

Note that the following 3 essays are on the shelf in the reading room, not in the "Individual Readings" reader.

Victor Hilts, "History of Science at Wisconsin," *Isis* 1984, 75:63-94

T. S. Kuhn, "Professionalization Reflected in Tranquility," *Isis* 1984, 75: 29-32

Margaret W. Rossiter, "The History and Philosophy of Science Program at the National Science Foundation," *Isis* 1984, 75: 95-104

Not in the individual readings packet, but relevant:

I. Bernard Cohen, "Introduction," pp. 1-111 in idem, *Puritanism and the Rise of Modern Science: The Merton Thesis* (New Brunswick: Rutgers U. Pr., 1990) (in Memorial Library)

10/10: Social History, the Kuhnian Revolution, and the Codification of “Internal” and “External” History of Science

1. Why is Kuhn's *Structure of Scientific Revolutions* viewed as such a key work in the history and philosophy of science? As part of what larger trends in history, sociology, and philosophy of science might it be interpreted?

2. Why did the dichotomy between “internalist” and “externalist” history of science become so powerful within history of science? Did this division have echoes in other historical subdisciplines, such as history of medicine? What was at stake here?

Everyone:

Review Appleby, et al., Ch. 5, pp. 160-184.

Novick, Ch. 15, “The center does not hold,” [first part], pp. 522-537

Steven Shapin, “Discipline and Bounding: The History and Sociology of Science as Seen Through the Externalism-Internalism Debate,” *History of Science* 1992, 30: 333-369

Roy Porter, “The History of Science and the History of Society” in Olby et al., *Companion*, 32-46

Allen Brandt, “Emerging Themes in the History of Medicine,” *Milbank Quarterly* 1991, 69: 199-214

Individual Readings:

Thomas S. Kuhn, “The Essential Tension: Tradition and Innovation in Scientific Research,” in Kuhn, *The Essential Tension* (Chicago: University of Chicago Press, 1977)

J. L. Heilbron, “Eloge: Thomas Samuel Kuhn, 18 July 1922-17 June 1996” *Isis* 1998, 89: 505-515

“Reviews of Journals and Serials,” [General Periodicals, Medicine & Technology], *Isis*, 1990, 81: 281-296

D. R. Woolf, “The Writing of Early Modern European Intellectual History, 1945-1995,” in *Companion to Historiography*, ed. Michael Bentley (London: Routledge, 1997)

Not in the individual readings packet, but relevant:

M.D. King, “Reason, Tradition, and the Progressiveness of Science,” *History and Theory*, 1971, 10: 3-32

10/17: Truth, Relativism, and the Social Construction of ST&M

1. When science/medicine/technology is “socially constructed,” what about it is
a) constructed? b) social?
2. How does social constructionism differ across the history of science, technology, and medicine? What's similar?
3. In what ways did the movement toward social constructionism in HSTM in the 1970s and 1980s share in larger trends in historical scholarship? In what ways does it seem to have been unique?
4. What are some of the problems posed by social constructionism as a program for history, and what ways out have historians sought?

Everyone:

Review Appleby, pp. 184-197

Golinski, *Making Natural Knowledge*, Introduction and Ch. 1, pp. 1-46.

Trevor Pinch and Wiebe E. Bijker, “The Social Construction of Facts and Artifacts: Of How the Sociology of Science and the Sociology of Technology Might Benefit Each Other,” pp. 17-50 in Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. (Cambridge: MIT Press, 1987)

Ludmilla Jordanova, “The Social Construction of Medical Knowledge,” *Social History of Medicine* 1995, 8: 361-381

Individual Readings:

Novick, *That Noble Dream*, pp. 537-572

Barry Barnes, “Sociological Theories of Scientific Knowledge,” *Companion* pp. 60-73.

Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” pp. 183-201 in idem, *Simians, Cyborgs, and Women: The Reinvention of Nature* (NY: Routledge, 1991)

Kenneth L. Caneva, “Objectivity, Relativism, and the Individual: a Role for a Post-Kuhnian History of Science,” *Studies in History and Philosophy of Science*, 1998, 29A: 327-344

Not in the individual readings packet, but relevant:

C. Behan McCullagh, “Bias in Historical Description, Interpretation, and Explanation,” *History and Theory*, 2000, 39: 39-66

10/24: Views from "Below": Women, Patients, Consumers, Non-elites

How have feminist perspectives and the broader concern to give voice to previously unheard historical actors affected the history of science, technology, and medicine since the 1970s? What new questions have gotten asked as a result? How have the conceptions of what properly belongs to the subject matter of the histories of science, technology, and medicine changed?

Everyone:

Sally Gregory Kohlstedt, "Women in the History of Science: an Ambiguous Place," *Osiris* 1995, 10: 39-58

Judith A. McGaw, "No Passive Victims, No Separate Spheres: A Feminist Perspective on Technology's History," in *In Context: History and the History of Technology*, ed. Stephen H. Cutcliffe and Robert C. Post (Bethlehem, PA, 1989)

Roy Porter, "The Patient's View: Doing Medical History from Below," *Comparative [?]Studies in Theory and Society* 1985, 14: 167-174

Anne Secord, "Science in the Pub: Artisan Botanists in Early Nineteenth-Century Lancashire," *History of Science*, 1994, 32: 269-315

Individual Readings:

[Women and Gender:]

Ruth Schwartz Cowan, "The Industrial Revolution in the Home: Household Technology and Social Change in the 20th Century," *T&C* 1976, 17: 1-24

Margaret Rossiter, "Women's Work in Science," *Isis* 1980, 71: 381-398

Evelyn Fox Keller, "Gender and Science: Origin, History, and Politics," *Osiris* 1995, 10: 27-38

Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century" (1985) reprinted as pp. 149-181 in idem, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991)

Judith Walzer Leavitt, "Birthing and Anesthesia: The Debate Over Twilight Sleep," *Signs* 1980, 6: 147-164

[Consumption:]

Ruth Schwartz Cowan, "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology," pp. 261-280 in Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch, *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. (Cambridge: MIT Press, 1987) [references at end of Pinch and Bijker article in reader]

Colin Jones, "The Great Chain of Buying: Medical Advertisement, the Bourgeois Public Sphere, and the Origins of the French Revolution," *American Historical Review* 1996, 101: 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 and Culture* 1996, 37: 763-795

[non-elites:]

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

Vanessa Northington Gamble, "Under the Shadow of Tuskegee: African Americans and Health Care," *American Journal of Public Health*, Nov. 1997, 87:1773-1778

Part II: Practicing HSTM: Recent Issues and Approaches

10/31: Disciplining and Boundary-Making: The (Social) Structuring of Scientific and Professional Knowledge and Identity

This week's readings illustrate different approaches to the question of how (scientific) knowledge was organized in the past. This question may be broken down into two others, at least:

- 1) *What knowledge counts as "scientific," and why?*
- 2) *Whose knowledge gets to be counted as "scientific" or "medical"?*

Everyone:

Harold J. Cook, "The New Philosophy and Medicine in Seventeenth-Century England," pp. 397-436 in David C. Lindberg and Robert Westman, *Reappraisals of the Scientific Revolution* (Cambridge: Cambridge U. Pr. 1990)

Thomas Broman, "The Habermasian Public Sphere and 'Science in the Enlightenment,'" *History of Science*, 1998, 36: 123-149

Jan Goldstein, "Foucault Among the Sociologists: The 'Disciplines' and the History of the Professions," *History and Theory*, 1984, 23: 170-192

Individual Reading:

Golinski, *Making Natural Knowledge*, Ch. 2

John Warner, "Science, Healing, and the Physician's Identity: A Problem of Professional Character in Nineteenth-Century America," *Clio Medica* 1991, 22: 65-88

Micaela Sullivan-Fowler, "Doubtful Theories, Drastic Therapies: Autointoxication and Faddism in the Late Nineteenth and Early Twentieth Centuries," *J. Hist. Med. All. Sci.*, 1995, 50: 365-390

Thomas Gieryn, George M. Bevens, and Stephen Zehr, "Professionalization of American Scientists: Public Science in the Creation/Evolution Trials," *American Sociological Review*, 1985, 50: 392-409

Not in the individual readings packet, but relevant:

Roger L. Emerson, "The Organisation of Science and Its Pursuit in Early Modern Europe," pp. 960-979 in *Companion*

J. B. Morrell, "Professionalization," pp. 980-989 in *Companion*

11/7 Uncovering Past Meanings: Hermeneutic and Semiotic Approaches

This week and next are linked by their focus on discourse analysis. If you have never heard of "hermeneutics" or "semiotics," Golinski offers a useful start. But our main focus will be on how historians read meanings from their sources.

- 1) *How do historians read texts for their meanings at the time?*
- 2) *Can machines and bodies be "read" the way that texts can?*

Everyone:

Ronald Numbers, "Creating Creationism: Meanings and Uses Since the Age of Agassiz," pp. 49-57 in idem, *Darwinism Comes to America* (Cambridge, Mass.: Harvard U. Press, 1998)

Eric Schatzberg, "Materials, Symbols, and Ideologies of Progress," pp. 3-21 in idem, *Wings of Wood, Wings of Metal: Culture and Technical Choice in American Airplane Materials, 1914-1945* (Princeton U. Pr., 1999)

Barbara Duden, "Medicine and the History of the Body: The Lady of the Court," pp. 39-51 in Jens Lachmund and Gunnar Stollberg, eds., *The Social Construction of Illness: Illness and Medical Knowledge in Past and Present*. (Stuttgart: Franz Steiner Verlag, 1992).

Individual Reading:

Golinski, *Making Natural Knowledge*, Ch. 4.

Daniel M. Siegel, "Text and Context in Maxwell's Electromagnetic Theory," *Physis* 1996, ns. 33, fasc. 1-3: 125-140.

Simon Schaffer, "Glass Works: Newton's Prisms and the Uses of Experiment," pp. 67-104 in Gooding, Pinch, and Schaffer, eds., *The Uses of Experiment: Studies in the Natural Sciences*. (Cambridge U. Pr., 1989)

Gillian Beer, "Parable, Professionalization, and Literary Allusion in Victorian Scientific Writing," pp. 196-215 in idem, *Open Fields: Science in Cultural Encounter* (Oxford: Clarendon Press, 1996) Other essays in this book are excellent, too.

Langdon Winner, "Do Artifacts Have Politics?" *Daedalus* 1980:

11/14: Voices of Experience: Participants' Narratives in Science and Medicine

How does "the voice of experience" help scientists and physicians (and patients?) gain and maintain authority? How do participants' narratives change over time?

Everyone:

Mary Fissell, "The Disappearance of the Patient's Narrative and the Invention of Hospital Medicine," in *British Medicine in an Age of Reform*, ed. Roger French and Andrew Wear (Routledge, 1991)

John Harley Warner, "Remembering Paris: Memory and the American Disciples of French Medicine in the 19th Century," *Bulletin of the History of Medicine* 1991, 65: 301-325.

Richard Staley, "On the Histories of Relativity: The Propagation and Elaboration of Relativity Theory in Participant Histories in Germany, 1905-1911," *Isis* 1998, 263-299

Individual Reading:

Peter Dear, "Totius in Verba: Rhetoric and Authority in the Early Royal Society, *Isis*, 1985, 145-161

Mary Terrall, "Heroic Narratives of Quest and Discovery," *Configurations*, 1998, 6: 223-242

Frederic L. Holmes, "Argument and Narrative in Scientific Writing," pp. 164-181 in Peter Dear, ed., *The Literary Structure of Scientific Argument: Historical Studies* (University of Pennsylvania Press, 1991)

Bruce Hevly, "The Heroic Science of Glacier Motion," *Osiris*, 2nd. Ser., 1996, 11: 66-86

Donna Haraway, "Teddy Bear Patriarchy," Ch. 3 in idem, *Primate Visions* (London: Routledge, 1989)

Richard Harvey Brown, "Ch. 4: Science and Storytelling: Creating Truths through Narratives of Conversion," and Ch. 5: Narrative and Truth in Scientific Practice," pp. 64-121 in idem, *Toward a Democratic Science: Scientific Narration and Civic Communication* (New Haven: Yale U. Pr., 1998)

11/21: Methods, Practices, and Material Culture

This week's common readings offer very different takes on "methods" and "practices" used in science. According to historians, what ends were these methods and practices supposed to serve? How were they understood to contribute to the scientific value of the knowledge they produced?

Everyone:

Victor Hiltz, "Towards the Social Organism: Spencer and Carpenter on the Analogical Method" in I. B. Cohen, ed., *The Natural and the Social Sciences*

Lorraine Daston, "The Moralized Objectivities of Science," pp. 78-100 in Wolfgang Carl and Lorraine Daston, *Wahrheit und Geschichte: Ein Kolloquium zu Ehren des 60. Geburtstages von Lorenz Krüger. Abhandlungen der Akademie der Wissenschaften in Göttingen*, 1999

Otniel Dror, "The Affect of Experiment: The Turn to Emotions in Anglo-American Physiology, 1900-1940," *Isis*, 1999, 90: 205-237

Jane R. Camerini, "Wallace in the Field," *Osiris* 1996, n.s.11: 44-65

Individual Reading:

Golinksi, *Making Natural Knowledge*, Ch. 5

John Pickstone, "Museological Science? The Place of the Analytical/Comparative in Nineteenth-Century Science, Technology, and Medicine." *History of Science*, 1994, 32: 111-138

Allan Franklin, "Review Essay: Experimental Questions," *Perspectives on Science* 1993, 1:127-146

Deborah Fitzgerald: "Farmers Deskilled: Hybrid Corn and Farmers' Work." *Technology and Culture* 1993, 34: 324-343.

Henry E. Lowood and Robin Rider, "Literary Technology and Typographic Culture: The Instrument of Print in Early Modern Science," *Perspectives on Science* 1994, 2: 1-37

J. Rosser Matthews, "Major Greenwood vs. Almroth Wright: Contrasting Visions of 'Scientific' Method in Edwardian Britain," *Bull. Hist. Med.* 1995, 69: 30-43

Not in the individual readings packet, but relevant:

Pamela H. Smith, "Science and Taste: Painting, Passions, and the New Philosophy in Seventeenth-Century Leiden," *Isis* 1999, 90: 421-461

Anne Larsen, "Equipment for the Field," pp. 358-377 in Nicholas Jardine et al., *Cultures of Natural History* (Cambridge: Cambridge U. Pr., 1996)

Simon Schaffer, "Experimenters' Techniques, Dyers' Hands, and the Electric Planetarium," *Isis*, 1997, 88:456-483.

Theodore M. Porter, "Quantification and the Accounting Ideal in Science," *Social Studies of Science* 1992, 22: 633-652.

11/28: Spaces and Places in Science, Technology, and Medicine

What difference does the location of their activities make to science, technology, and medicine?
What difference does it make to historians' analyses to have noticed places and spaces?

Everyone:

Steven Shapin, "The House of Experiment in Seventeenth-Century England," *Isis*, 1988, 79: 373-404

Judith W. Leavitt, "'A Worrying Profession': The Domestic Environment of Medical Practice in Mid-Nineteenth-Century America" (Fielding H. Garrison Lecture) *Bull. Hist. Med.* 1995, 69:1-29

Francesca Bray, "Technics and Civilization in Late Imperial China: An Essay in the Cultural History of Technology," *Osiris* 1998, 2nd ser., 13: 11-33

Robert E. Kohler, "Place and Practice in American Field Biology," draft ms. June 1998

Individual Reading:

Golinski, Ch. 3, "The Place of Production," pp. 79-102

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

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

Sophie Forgan, "The Architecture of Display: Museums, Universities and Objects in Nineteenth-Century Britain," *History of Science*, 1994, 32:139-162

Lindsay Prior, "The Local Space of Medical Discourse: Disease, Illness, and Hospital Architecture," pp. 67-84 in Jens Lachmund and Gunnar Stollberg, eds., *The Social Construction of Illness: Illness and Medical Knowledge in Past and Present*. (Stuttgart: Franz Steiner Verlag, 1992).

Christoph Bonneuil, "Crafting and Disciplining the Tropics: Plant Science in the French Colonies," pp. 77-96 In *Science in the 20th century*. Edited by John Krige and Dominique Pestre. (Amsterdam : Harwood Academic, 1997).

Not in the individual readings packet, but relevant:

Richard W. Burkhardt, Jr., "Ethology, Natural History, the Life Sciences, and the Problem of Place," *J. Hist. Biol.* 1999, 32: 489-508

Alex Soojung-Kim Pang, "The Social Event of the Season: Solar Eclipse Expeditions and Victorian Culture," *Isis*, 1993, 84: 252-277

Emily Thompson, "Dead rooms and live wires: Harvard, Hollywood, and the deconstruction of architectural acoustics, 1900-1930," *Isis*, 1997, 88: 597-626

12/5: Metaphors of the Movement of Knowledge: Transfer, Translation, Appropriation, Assimilation, Mediation

Given that social "boundaries" and "spaces" form an important part of the conceptual map historians carry, it is not surprising that many of us have developed analyses that make use of metaphors that deal with the overcoming or crossing of such boundaries and spaces (especially, but not exclusively, dealing with the boundaries between "professional" and "lay" knowledge of science). This week's readings show how different historians have used such metaphors. What kinds of questions do these analytical tools open up? How do they differ from one another? How well do they work? What might be some of their limitations?

Everyone:

Peter Galison, "Material Culture, Theoretical Culture and Delocalization," pp. 669-682 in *Science in the 20th century*. Edited by John Krige and Dominique Pestre. (Amsterdam : Harwood Academic, 1997).

Susan Leigh Star and James R. Griesemer, "Institutional Ecology, 'Translations,' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39," *Social Studies of Science* 1989, 19: 387-420

John Carson, "Army Alpha, Army Brass, and the Search for Army Intelligence," *Isis* 1993, 84: 278-309

Lynn K. Nyhart, "Civic and Economic Zoology: The 'Living Communities' of Karl Möbius," *Isis* 1998, 89: 605-630

Individual Reading:

I. A. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam" *History of Science* 1987, 25: 223-243, reprinted as pp. 3-27 in F. Jamil Ragep and Sally P. Ragep, eds., *Tradition, Transmission, Transformation. Proceedings of Two Conferences on Pre-Modern Science held at the University of Oklahoma* (NY: Brill, 1996).

Gregg Mitman, Hollywood Technology, Popular Culture, and the American Museum of Natural History. *Isis* 1993, 84: 637-661

Nick Hopwood, "Producing a Socialist Popular Science in the Weimar Republic," *History Workshop Journal* 1996, 41: 118-153

Bruce V. Lewenstein, "Cold Fusion and Hot History," *Osiris*, 2nd. ser., 1992, 7: 135-163

12/12: The Challenges of Revisionism: What Stories Do We Tell?

All historians are revisionists, reacting to the kinds of stories told by their predecessors. The readings for this final week address some of our canonical assumptions about the way we tell history (of science) and suggest new directions we might profitably pursue if we can question our basic assumptions.

Everyone:

Michael H. Shank, "The Problem of the Fifteenth Century," ms. chapter, to appear in David C. Lindberg and Michael Shank, eds., *Cambridge History of Science Vol. 2: The Middle Ages*. [to be handed out later]

Betty Jo Teeter Dobbs, "Newton as Final Cause and First Mover," *Isis* 1994, 85: 633-643.

William Cronon, "A Place for Stories: Nature, History, and Narrative," *Journal of American History*, March 1990, 78: 1347-1376

Mary P. Winsor, "The Practitioner of Science: Everywoman her own Historian," forthcoming in *J. Hist. Biol.* [to be handed out later]

Individual Reading:

Perez Zagorin, "History, the Referent, and Narrative: Reflections on Postmodernism Now," *History and Theory* 1999, 1-24

Peter Dear, "The Mathematical Principles of Natural Philosophy: Toward a Heuristic Narrative for the Scientific Revolution," *Configurations* 1998, 6:173-193

Gary Hatfield, "Was the Scientific Revolution Really a Revolution in Science?" in F. Jamil Ragep and Sally P. Ragep, eds., *Tradition, Transmission, Transformation. Proceedings of Two Conferences on Pre-Modern Science held at the University of Oklahoma* (NY: Brill, 1996), pp. 489-525

Alex Roland, "What Hath Kranzberg Wrought? Or, Does the History of Technology Really Matter?" *T&C* 1997, 38: 697-713

Bernward Joerges, "Do Politics Have Artefacts?"; Steve Woolgar and Geoff Cooper, "Do Artefacts Have Ambivalence? Moses' Bridges, Winner's Bridges and Other Urban Legends in S&TS;" Bernward Joerges, "Scams Cannot Be Busted: Reply to Woolgar & Cooper," all in *Social Studies of Science*, June 1999, 29: 411-57

