History of science 5970: research and critical analysis (seminar)
Class meets Mondays 1.30 – 4.20 p.m. in Bizell Library, room 521

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History of science is about science, but it is above all history. This course will give a short introduction to some general historical questions. This includes a short overview of the development of the discipline and the study of some seminal or classical texts. Moreover, we will discuss some specific methodological questions about the interpretation of the past.

Schedule. (The schedule is open to modifications.)

Jan 19 (Martin Luther King day, no class)
26 Introduction
Febr 2 World history; Spengler
9 Professionalization of history in the 19th century: Ranke
16 sequel: positivism, historicism
23 Annales school. History of mentalities
March 2 Use and abuse of history
9 History of history of science
16 Rationality. Science, religion and magic
23 (Spring vacation, no class)
30 Truth claims in science and history
April 6 Oral history of science
13 Images as a historical source
20 Science and literature
27 t.b.a.
May 4 t.b.a.

The various subjects are briefly introduced below. Titles given are partly for the sake of general orientation. We shall not read all of those works (or limit ourselves to them). The exact reading schedule can be established according to preferences or as seems fit, with regard to these guidelines.
The students will generally have to turn in before class a short written report of the readings of that week, which will be judged sufficient/insufficient. At the end of the course, they have to write a longer paper on a chosen topic.
1. General literature.

As introduction to general historiography, we shall read some contributions from: Loyd Kramer and Sarah Maza ed., *A companion to western historical thought* (Malden (Mass.) and Oxford: Blackwell 2002). Unfortunately, the book is, as the title says indeed more about historical thought than about historical practice.

A very readable, sometimes amusing book is: David Hackett Fischer, *Historians’ fallacies. Towards a logic of historical thought* (New York 1970). (But we shall not use it.)

For history of science, Helge Kragh, *An introduction to the historiography of science* (Cambridge 1987) discusses some of the standard techniques in history of science writing. The book is short, clearly written. We will probably use a few chapters.

2. World history


3. Professionalization; Ranke; historicism

History as a modern scholarly discipline arose in the 19th century. The basic principles of the craft were canonised in this period, above all by the German historian Leopold von Ranke. At the same time, some basic problems and tensions emerged, which often are still very much alive today.


Pieter Geyl, 'Ranke in the light of the catastrophe', in id., *Debates with historians* (Groningen 1955)

3. The Annales-mouvement

An important movement of renewal in history writing centered around the French journal *Annales d' histoires économiques sociales*, founded in 1929 by Lucien Febvre and Marc Bloch (presently: *Annales. Histoire, Sciences sociales*.) This became a prominent historical journal and the centre of one of the most influential historical schools of the twentieth century.

    The Annales-school rejected the old way of giving political and diplomatic history pride of place. They advocated new, more scientific methods, partly taken from other disciplines. More in particular, their renovation went into two different directions:
- an emphasis on economic data as determining the course of events. In this respect, the work of Fernand Braudel is paradigmatic.
- an interest in mindsets: "histoire de mentalités".

The latter direction often touches the history of science and medicine. See: Marc Bloch, The royal touch. Sacred monarchy and scrofula in England and France (the original French edition is from 1924); Lucien Febvre, The problem of unbelief in the sixteenth century. The religion of Rabelais (Cambridge (Mass.) and London 1982) (original French edition: Paris 1942). In this book, Febvre argued that the mental outfit of sixteenth-century man made them unable to be atheistic or think in a scientific way (this view has later been contested).

Of Lucien Febvre's programmatic articles, few appear to have been translated. But see: Marc Bloch, The historian's craft (New York 1953) (original French edition from 1941).

4. Use and abuse of history.

In this respect, we should think above all of the political and ideological function of history. (In former Communist countries, history of science was much furthered as a way to teach science in the proper ideological framework.)

N.N. Pokrovsky, 'The task of the society of Marxist historians' (1925) and 'The tasks of Marxist historical science in the reconstruction period' (1931), in: Fritz Stern ed., The varieties of history from Voltaire to the present (New York 1960) 330-341.

5. The history of history of science.

A good overview of the development of the field of history of science is lacking so far. (For some aspects, H.F. Cohen, The scientific revolution. A historiographical inquiry (Chicago 1994) is helpful.) Still, we may study some seminal texts to see why people started doing history of science as a discipline:

George Sarton, The history of science and the new humanism (New York 1931)


5. Science and rationality; truth-claims

During the last decades, history of science has established many links with philosophy and sociology of science. This has also meant that historians became involved in disputes about the validity of the truth claims of modern science, the so-called science wars.
Awareness of the not self-evident nature of scientific truths is important for historians: it helps to identify ideological elements. On the other hand, as historians, truth in history should bother us more than truth in the sciences.

Philosophers of science and historians reflecting on their craft generally are not interested in each other's work. Still, it may be worth while to see whether general historical reflections may be relevant for the "science wars".

Lucien Lévy-Bruhl, *Primitive mentality* (New York and London 1923) (original French edition 1922). A kind of a negative classic, in its time acclaimed as a great work of scholarship, by later generations referred to (but not read) as a paradigm of western prejudice. Of course, Lévy-Bruhl was not so naive as some people have tainted him.


6. Oral history

For the history of science of the last half century, eyewitness accounts are an obvious source. Moreover, even for older periods, written sources often ultimately rely on oral accounts. It is therefore important to be aware of the specific characteristics of this kind of sources and the various pitfalls implied in using them.

A classical study is Jan Vansina, *Oral tradition. A study in historical methodology* (Chicago and London 1965) (translated from the French). This book deals with assessing historical traditions, which often go generations back, of illiterate societies. Vansina's treatment of orality is therefore more fundamental than most other works', but of course his explanations are not readily applicable to oral history in our own society.


As to history of science, the Niels Bohr Library and Archives of the American Institute of Physics, has a large collection of oral history interviews with prominent scientists and strives to augment the collection. See the website: www.aip.org/history/nbl/oralhistory.html.
In medical history, the Wellcome Centre (London) is active in organizing "witness seminars". See http://www.ucl.ac.uk/histmed/publications/wellcome_witnesses_c20th_med

Some examples of works in history of science which make use of oral sources:

N. Wade, *The Nobel duel. Two scientists' 21-year race to win the world's most coveted research prize* (New York 1981). Deals with the rivalry between the researchers Roger Guillemin and Andrew Schally and their work on corticotropine releasing factor. Wade is more of a popular science writer whose main aim is to write a good story, but the book is very informative.


7. The image as historical source

Most historians base their work exclusively on texts, but their are other possible sources: archeological remains, images, artefacts, books (as objects). (In history of science, scientific instruments and maps are the subject of separate disciplines.) All such sources offer their own problems of interpretation. We will deal more specifically with images.


Historians of science have also to do with the specific imagining techniques used by working scientists: maps, diagrams, etc., and which are legitimate subjects of historical study in their own right. (The use and meaning of such images in the context of science has also been studied by philosophers.)


Some works on history of science which make use of images:


8. Science and literature

Study of fictional literature may be one way to study the impact science has on society at large, but interpreting such literature has its own demands and pitfalls. See for a general introduction: Gilian Beer, 'Science and literature', in: R.C. Olby, G.N. Cantor, J.R.R. Christie a.o. ed., *Companion to the history of modern science* (London etc. 1996) 783-798.

There are quite some studies which investigate how far e.g. Darwinism or evolutionary theory are reflected in works of literature. History of science fiction is almost a separate specialism.