

Recent Trends in Research in the Field of the History of Science

Stephen P. Weldon, Assistant Professor of the History of Science, University of Oklahoma, and editor of the Isis Current Bibliography of the History of Science



Webinar Presentation
for the Collections
Forum on Science,
Technology,
and Engineering

Center for Research
Libraries, Annual
Council Meeting,
April 19, 2013

History of Science is Eclectic

The materials we use are extraordinarily varied.

You'll find historians of science in every library on campus because we ask all kinds of questions.

Over the years, our eclectic methods seem only to expand.

Where some disciplines go through phases and certain methods disappear, in history we simply add to our repertoire.

Founding the Discipline

George Sarton founded the discipline of history of science.

He established the journal *Isis* in 1913.

He was employed at Harvard beginning in 1916.



George Sarton (1884-1956)

Information Visionary

Paul Otlet, friend of George Sarton, established the Universal Decimal Classification.

He promoted the values of pacifism and an interconnected world.

It was this view that permeated the early thinking of Sarton as he thought about what the history of science should be about: global and connected to the history of civilization broadly conceived.

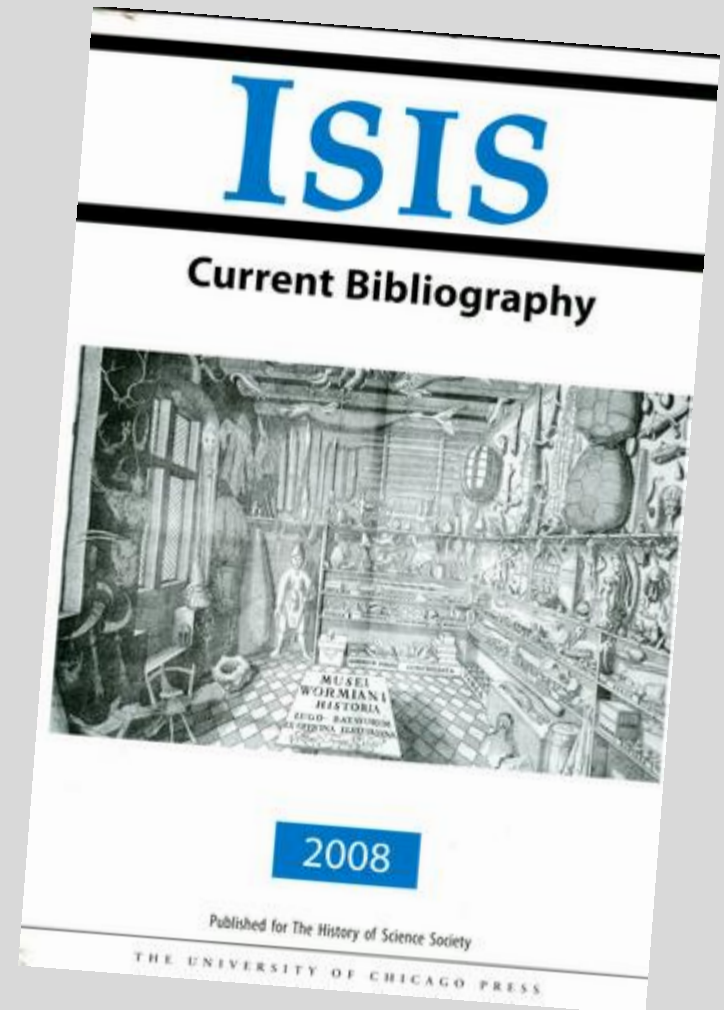


Paul Otlet (1868-1944)

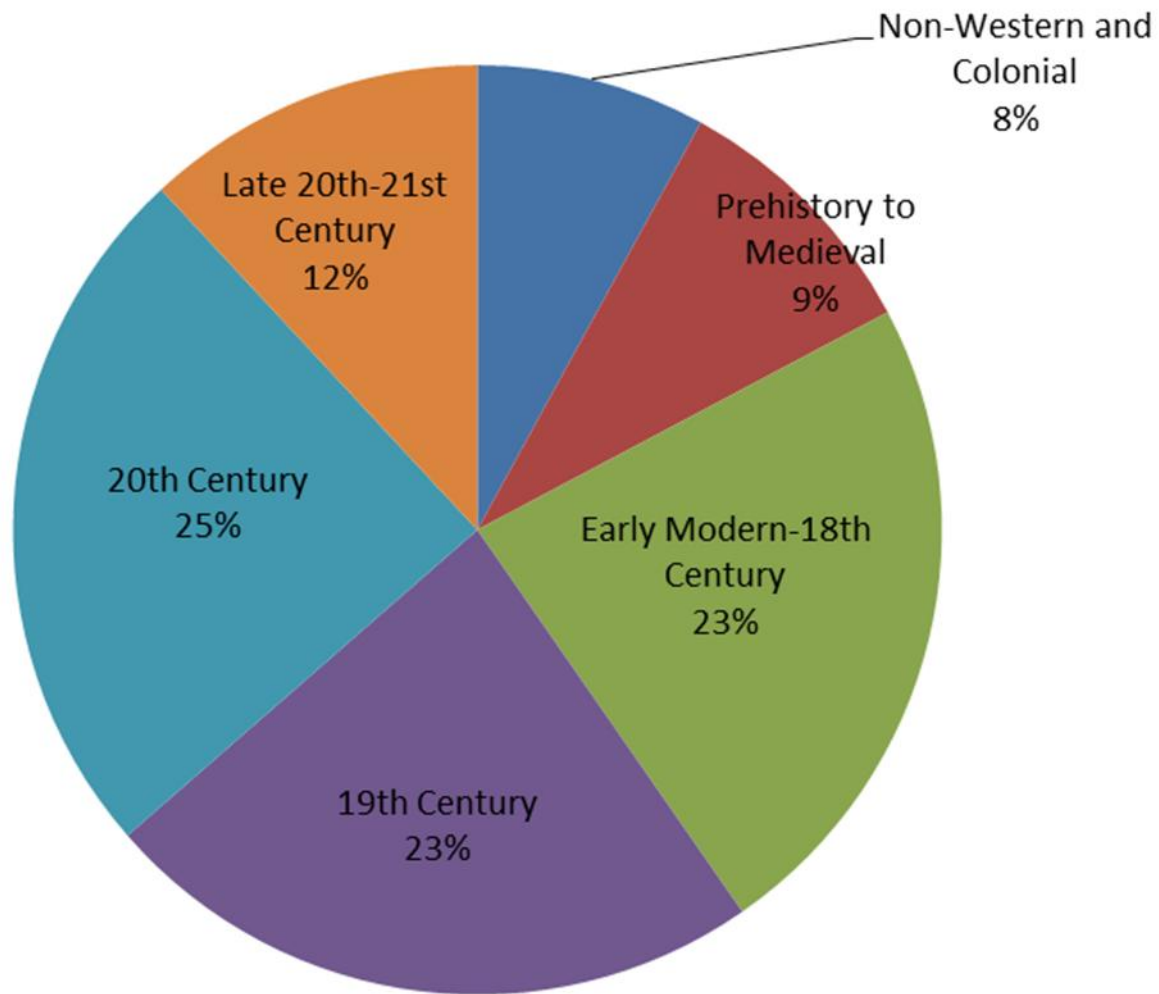
The Isis Current Bibliography

About 4000 works classified annually.

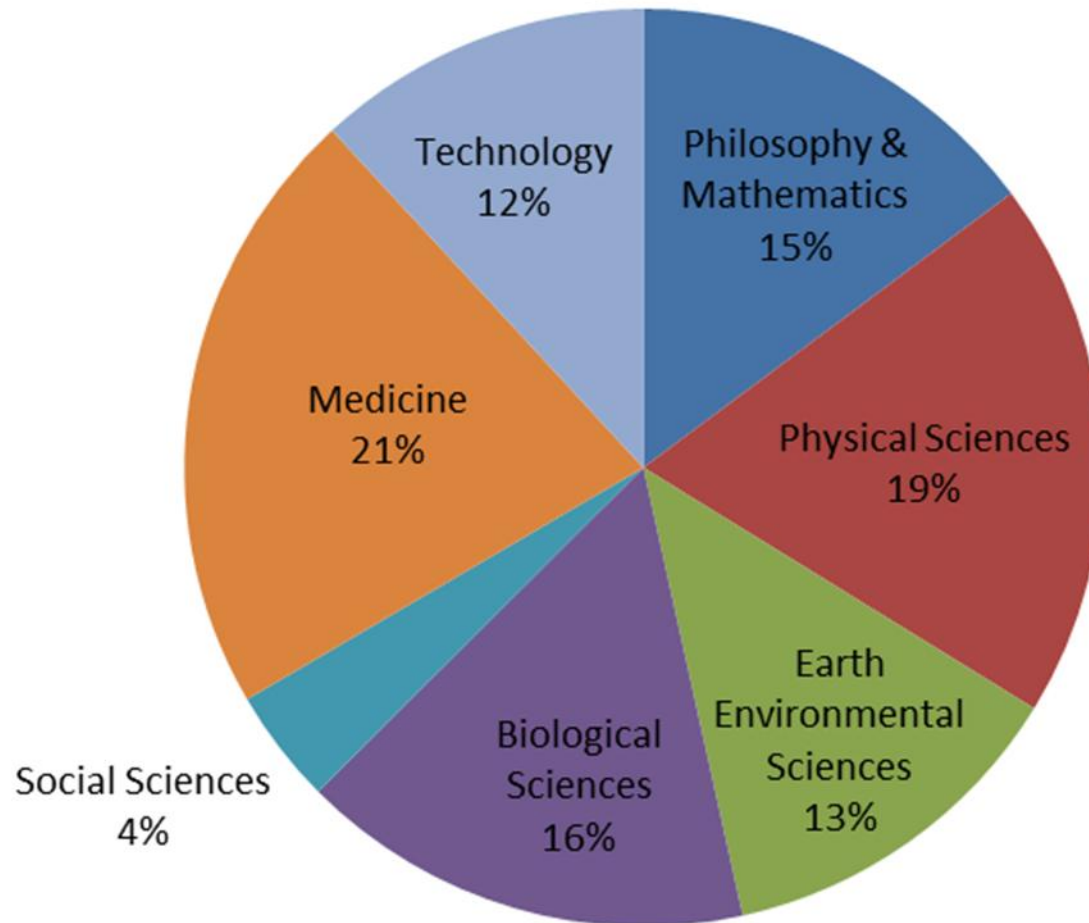
Covers the entire field of history of science: all time periods, all languages, all disciplines.



Popularity of Chronological Period in Recent Publications in History of Science



Popularity of Subject Areas in Recent Publications in History of Science



Internalism and Externalism: What Are the Boundaries of History of Science?



17. The palatial facade of Bethlehem (Bedlam) Hospital in 1676. Behind this regal frontage was a landscape of fear where most patients were kept behind bars to leave the corridors free and safe for visitors who came for amusement.

[From David Livingstone, *Putting Science in Its Place* (Chicago Univ. Press, 2003), p. 70]

The laboratory and the classroom as places where people do science.

What will we learn about knowledge production if we study the buildings where scientific work takes place?

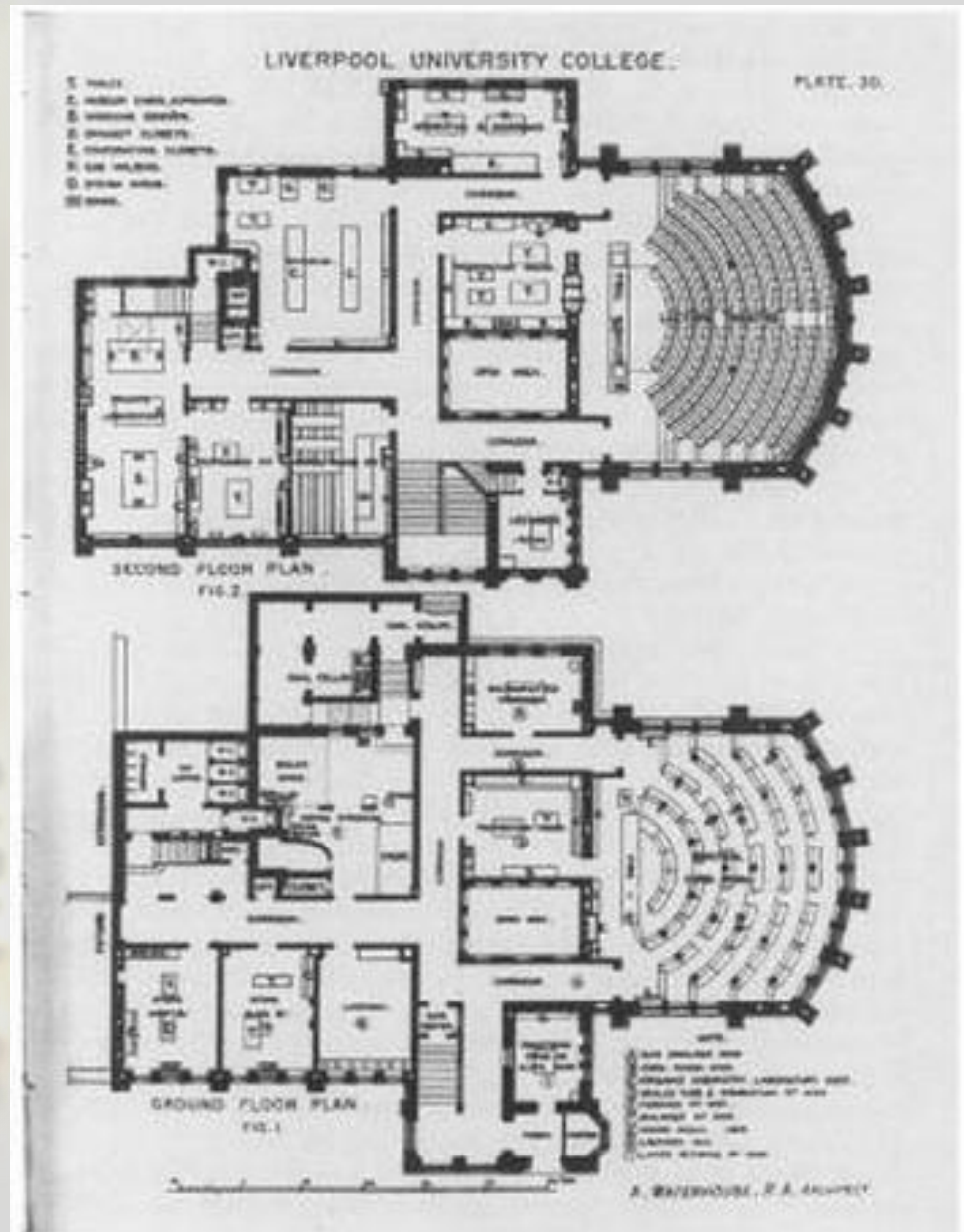
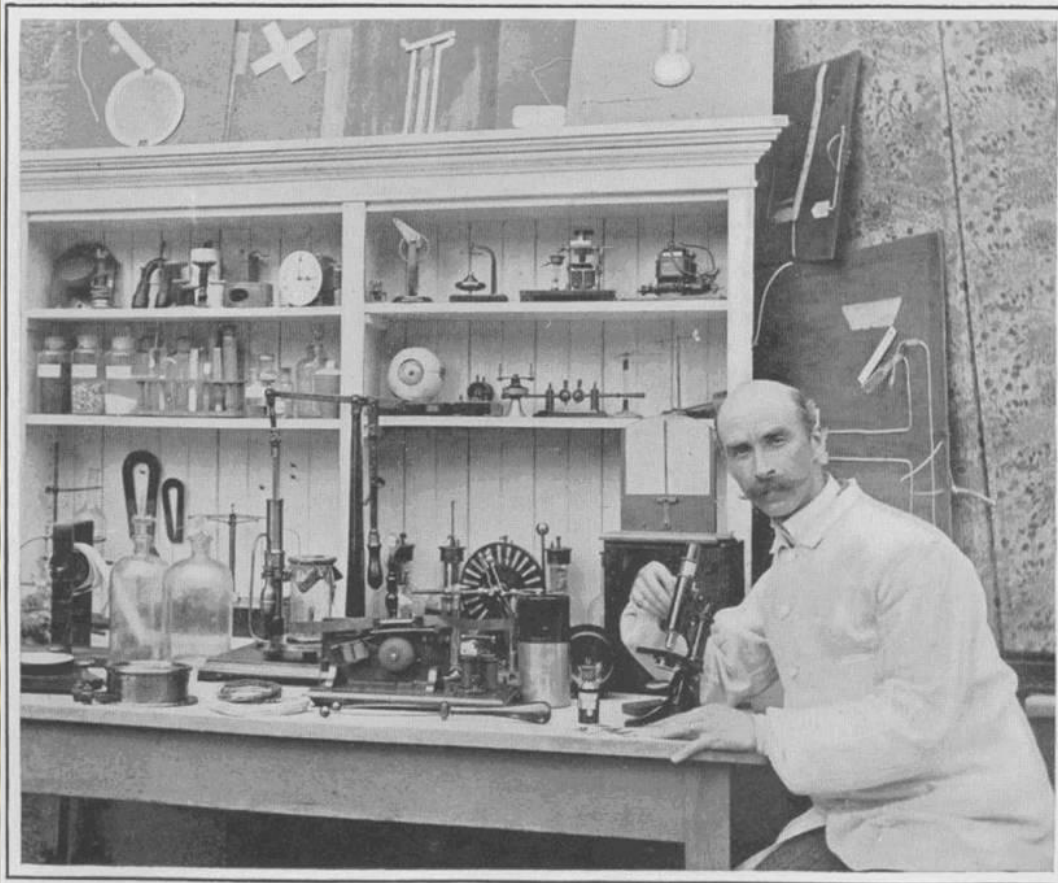


Figure 3. Floor plans of the Liverpool University College, including the practical chemistry class. Forgan (1989) has noted how, in this class, laboratory benches were arranged in a tiered amphitheater around the lecturer's podium. Reproduced from

Laboratory studies tell us a lot about the world of science.



A Corner of the Author's Laboratory.

[Graeme Gooday, "Placing or Replacing the Laboratory in the History of Science?" *Isis* 99, no. 4 (2008): 792.]

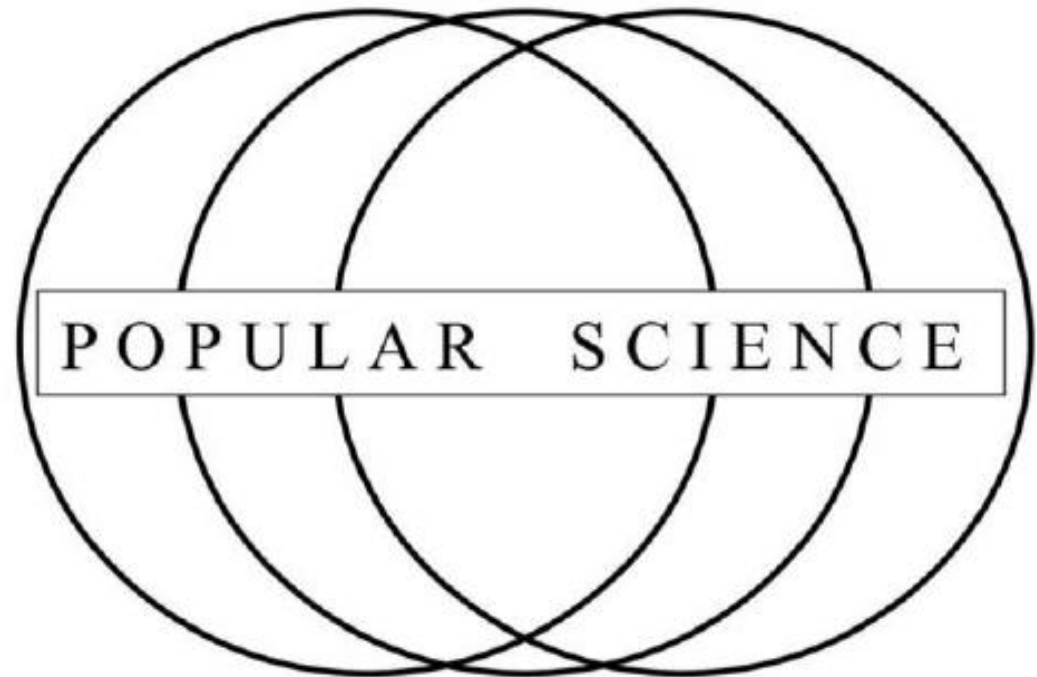
But laboratory studies are not narrow.

Historians need many different kinds of records in order to reconstruct what was happening in the laboratory, where different personnel were located, and how laboratory spaces were developed, planned, and funded.

Studies of popularization and popular science

Studies of popularization and popular science require access to materials quite far outside of the strictly professional arena.

Yet even here we can see how the scientist plays a central role.



1. Science designed for people outside a scientific elite (popularization)

2. What those people do with it (reception, transformation)

3. Non-elite scientific practices (ethno-science)

O'Connor, By Ralph. "Reflections on Popular Science in Britain: Genres, Categories, and Historians." *Isis* 100, no. 2 (2009): 341.

Textbook analysis

Many scholars now are analyzing textbooks and the changes that take place over different editions. In these studies we can learn about changes in science education related to both scientific and cultural circumstances.

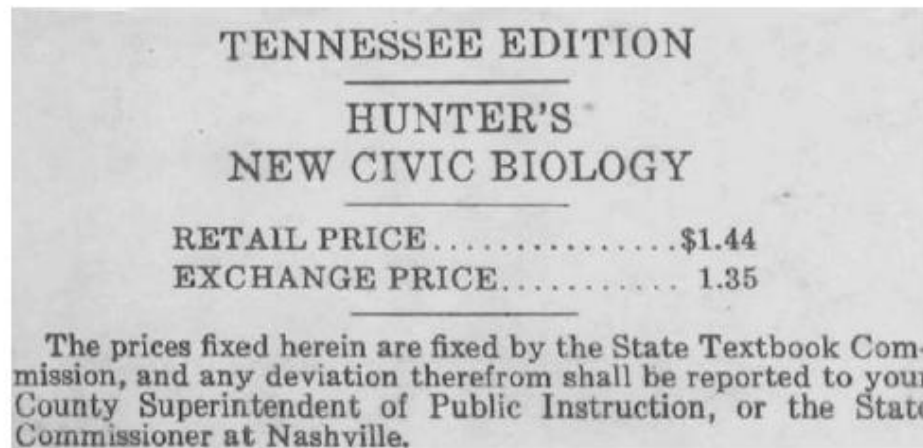
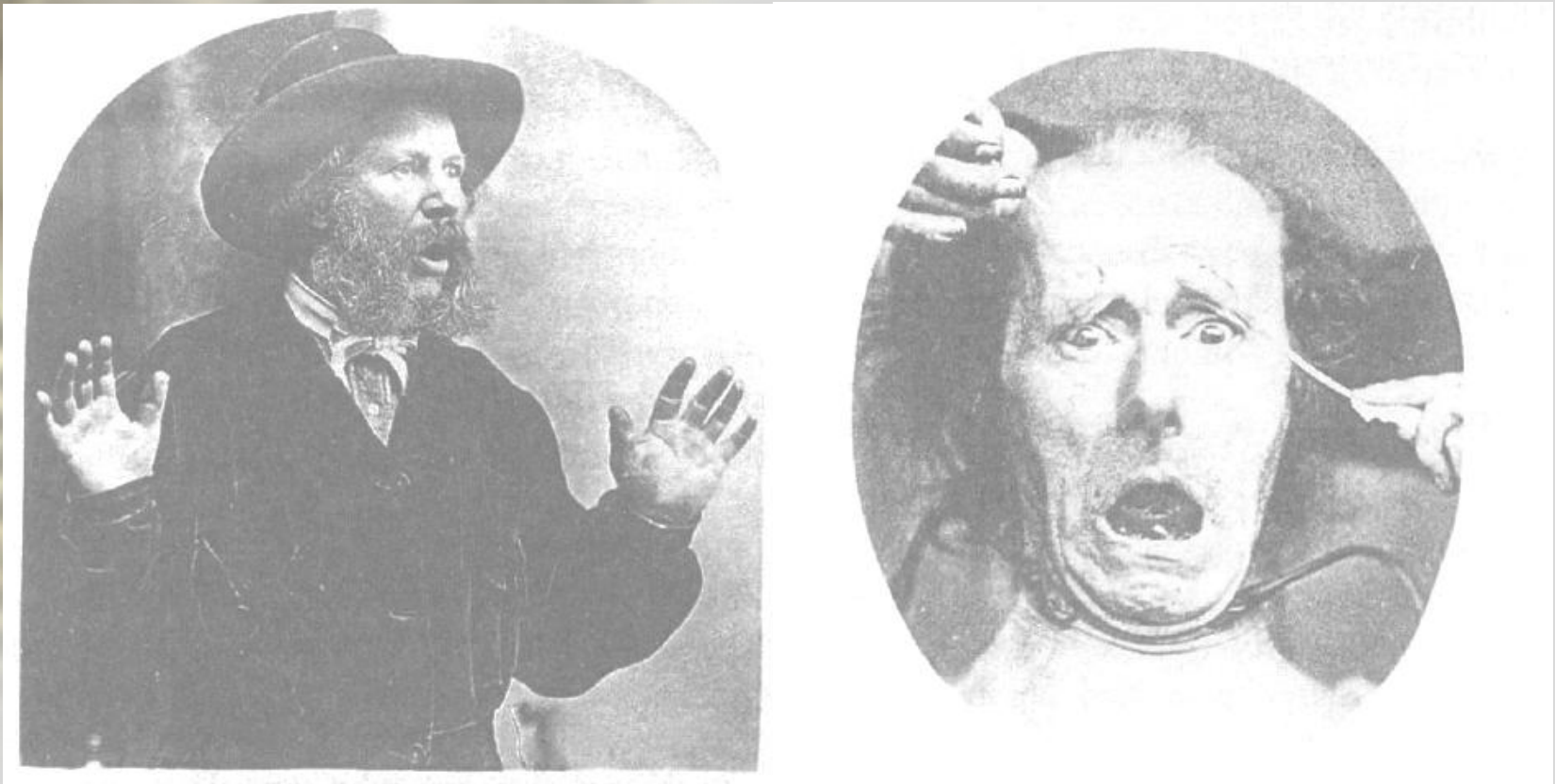


Figure 1. This sticker was affixed to the inside cover of a copy of George William Hunter's *New Civic Biology* (1926; New York: American Book Company, 1931), adopted by the State of Tennessee in 1931 (its first adoption since Hunter's original *Civic Biology* [1914] became notorious for its role in the 1925 Scopes antievolution trial in Dayton). State regulation of textbooks in the United States in this era was more concerned with managing costs and with legitimate competitive practices by publishers than with the oversight of textbook content.

Emotions and the history of science

It is not surprising to find people interested in the study of emotion as a subject of science.



Paul White, By. "Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity." *Isis* 100, no. 4 (2009): 821.

Emotions and the history of science



Figure 2. Darwin and his son William, circa 1842, Darwin Archive. Courtesy of the Syndics of Cambridge University Library.

Sometimes, however, the emotions of the scientist or the emotions of the layman or woman form a vital part of the story of how scientific knowledge and practice develop.

Paul White, By. "Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity." *Isis* 100, no. 4 (2009): 816.

Global, Colonial, and Post-colonial History of Science

One of the most important fields of growth in the discipline these days concerns colonialism and globalization. Cross-cultural analysis, including anthropological studies have influenced historians. More broadly, theoretical concerns and methods deriving from post-colonial studies have become extremely important to historians in this subfield.

Helen Tilley, By. "Global Histories, Vernacular Science, and African Genealogies; or, Is the History of Science Ready for the World?" *Isis* 101, no. 1 (2010): 135.

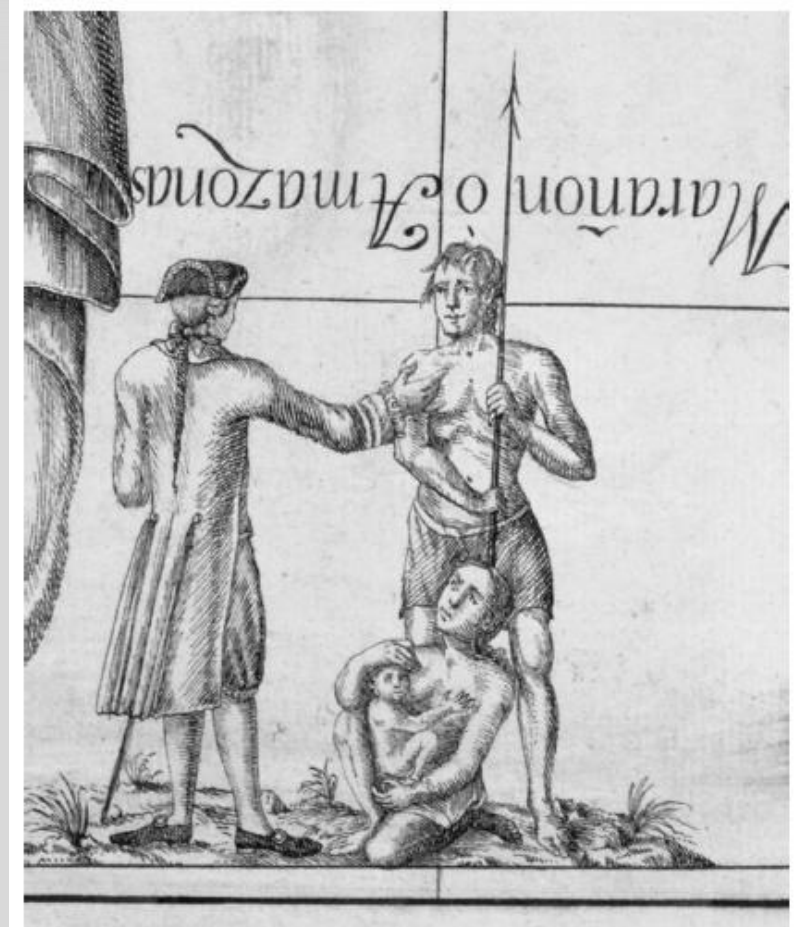


Figure 1. With his back to the viewer, a fully clothed European man engages in conversation with an Amerindian family. The exchange of geographical knowledge about the Amazon River and its tributaries often took place in ephemeral moments like the one depicted here even though Europeans frequently denied that Amerindian knowledge was commensurable with European scientific norms. Francisco Requena, "Mapa de una parte del Rio Yapura: Comprehendida desde su entrada en el Rio Marañon por su boca mas occidental hasta el pueblo de San Antonio de Manjoi," detail. Courtesy of the Geography and Map Division, Library of Congress, Washington, D.C.

The Cold War, Science, the Military, and Beyond

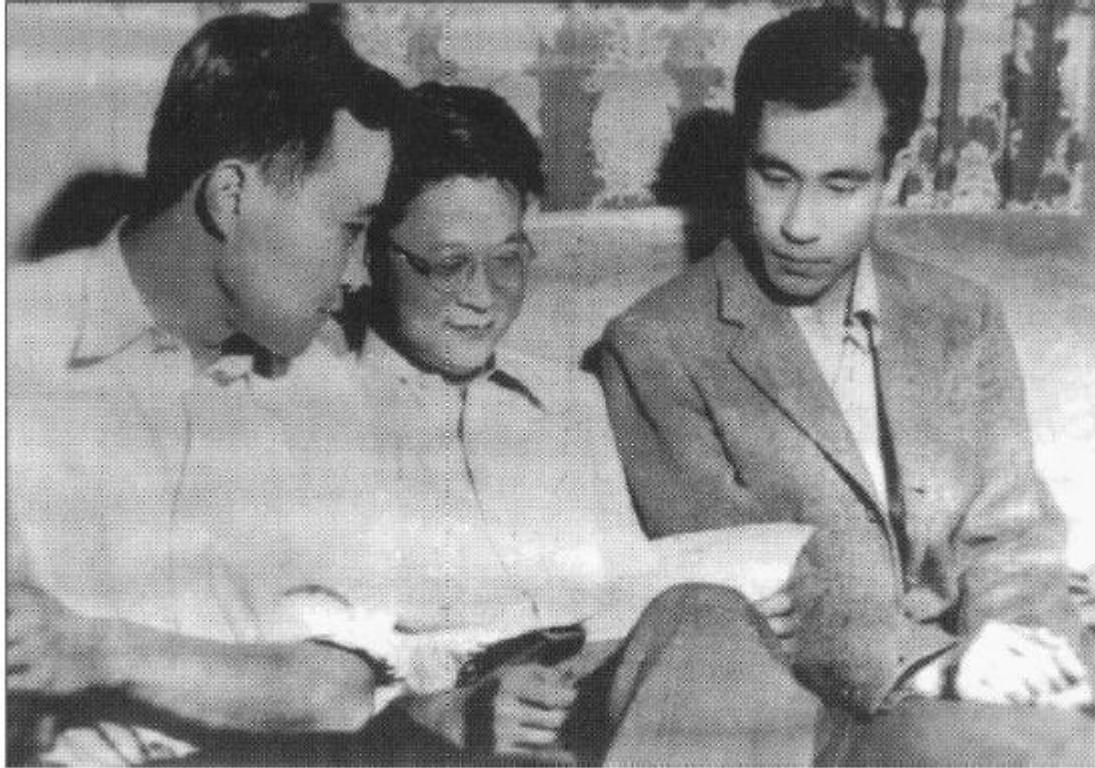
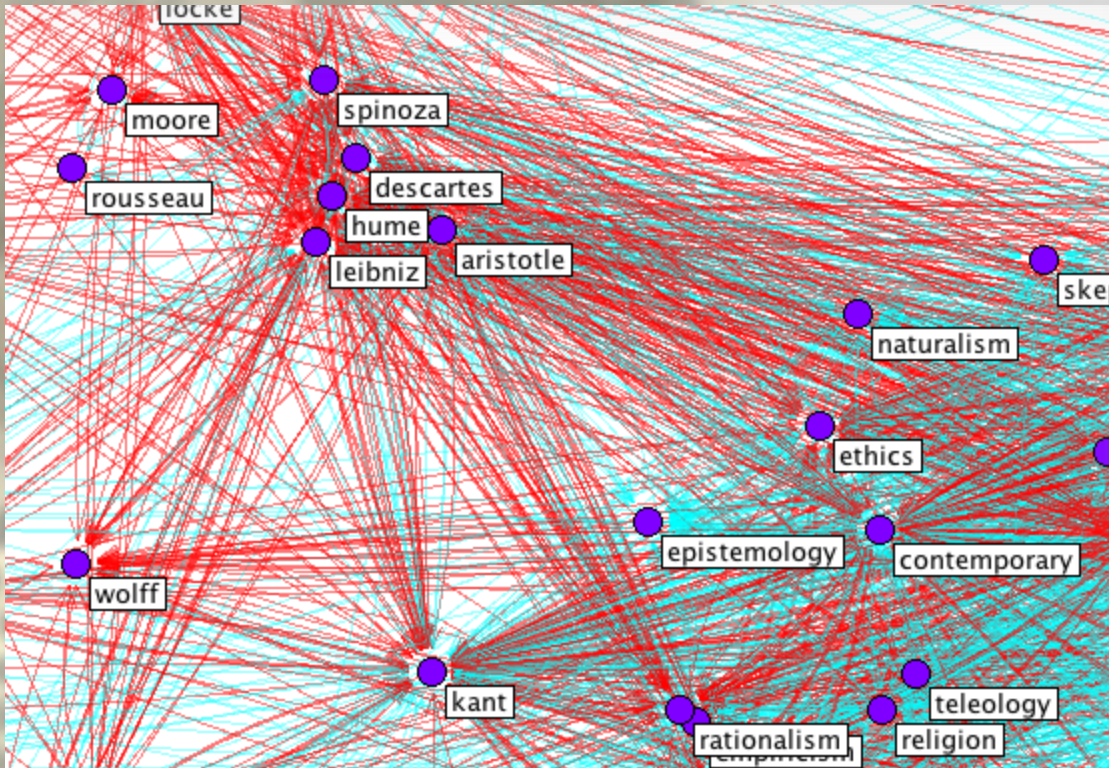


Figure 2. Chinese students/scientists Shi Changshu, Lin Zhengxian, and Zhang Xingqian in Boston in 1954, after they signed an appeal to President Eisenhower. From *Jianguo chuqi liuxuesheng guiguo jishi* [Chronicles of Journeys Home by Students Studying Abroad during the Early Years of the People's Republic of China] (Beijing: China Culture and History Press, 1999).

Studies of the Cold War include many different kinds of analysis, some purely scientific, some more geographical, some dealing with popular culture, and many dealing with the military-industrial complex in all of its *complexity*.

Wang, By Zuoyue. "Transnational Science During the Cold War: The Case of Chinese/American Scientists." *Isis* 101, no. 2 (2010): 372.

Big Data and Computational History of Science



As we seek to understand contemporary science, we need new historical methods to analyze the new scientific methods.

Indeed, computational methods applied to historical data can inform our understanding of the past as well.

From Colin Allen and the InPhO group, "Cross-cutting categorization schemes in the digital humanities," accepted for publication in *Isis* (September 2013).]



... enim non est in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet
... quodlibet in mundo quodlibet

Thank you.