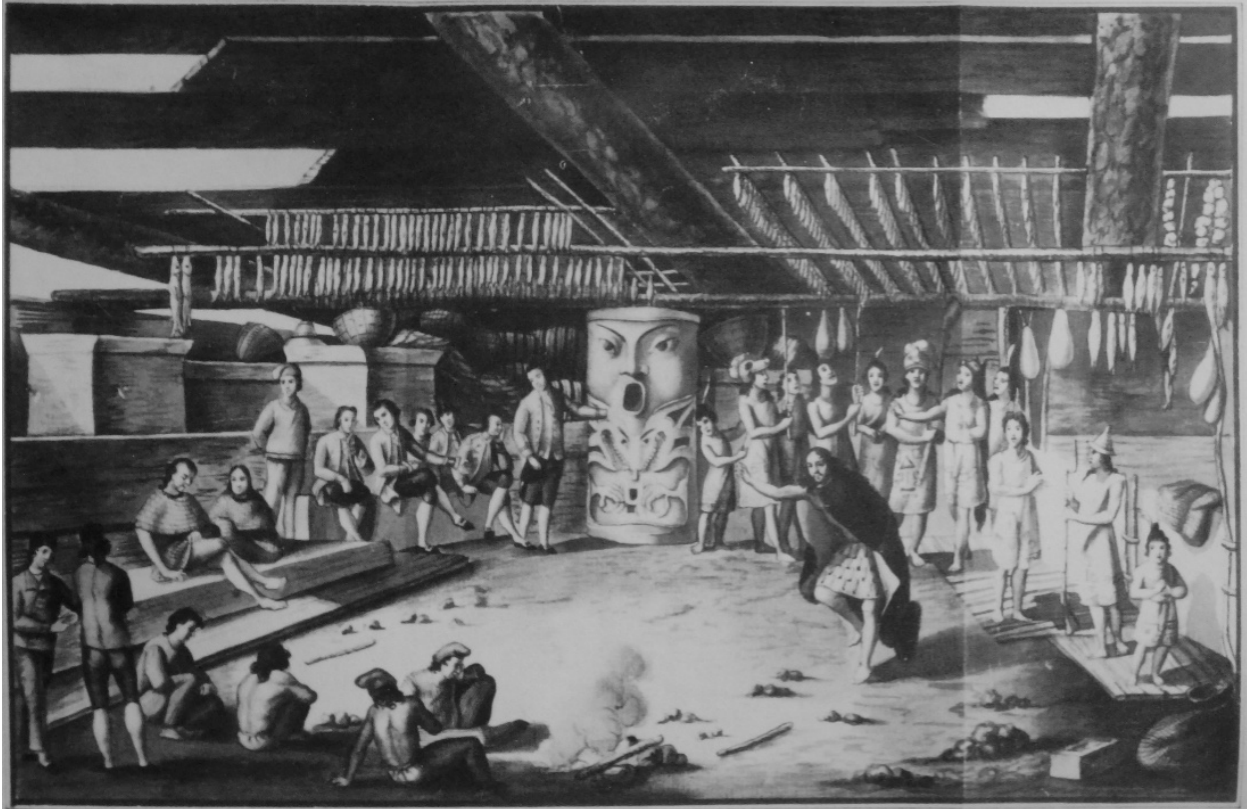


Enlightenment Science in the Empire



Chief Maquinna entertaining Spanish and British explorers and naturalists, Vancouver Island, 1782

What is the relationship of science to the path of European imperialism? This course considers this question in light of the developments and activities of science during the Enlightenment. Traditional interpretations hold that in this period science matured into its "rational" and "empirical" mode; then *truth* was disseminated across the world. This is the narrative that imperialists told themselves. But now as historians question it, Enlightenment science appears much less uni-directional. Rather than knowledge merely spreading *out* from London or Paris, we can also see ideas, artifacts, specimens, and people going the other way too. This course examines these networks of circulation and exchange in light of scientific developments, imperial objectives, cultural and social change, and economic interests.

Examining science in this way brings many new actors within our notion of *who does science*. Botanists in Uppsala, astronomers in Paris, zoologists in London all relied on information and specimens from the furthest reaches of empire. Not infrequently, these networks extended to include indigenous communities, frontier settlers, missionaries, soldiers, and slaves and maroons (runaway slaves). If we consider these persons as important contributors to science, then what is science? If these networks connecting Europe to the colonies were essential, then what was the relationship of science to imperialism? If slaves' knowledge of plants was so critical to botanists

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and doctors, then who got to be a "scientist" and when did knowledge become "scientific knowledge"? In an array of contexts and places, this course will begin to answer these questions that historians are only now starting to ask.

Although any prior coursework on European imperialism or intellectual history will be helpful in this course, it is not necessary.

The **goals** for this course are for students to emerge with a strong understanding of the historical relationships between science and political power, of comparative and global methods in history, and of diverse modes of interpreting sources. Further, by the end of the semester students should feel that they are resourceful and capable interpreters of the past, with ample skills to analyze historical arguments and sources, to seek out and implement their own lines of inquiry, to represent their interpretations in engaging ways, and to work in a constructive group research environment.

Course Requirements

Class Participation. Students will be expected to participate regularly in class discussions. Additionally, once throughout the semester each student will open discussion of the week's readings with a short introduction and opening questions.

Reflection Essays. Each week students will be expected to submit a short (1 page) reflection essay on the readings.

Individual Projects. The final project for this course will be an individual work of historical interpretation relating to the main themes of the course. Although a term paper is welcome, I encourage students to think beyond the usual academic essay and imagine new ways to represent historical scholarship and interpretation. A podcast, popular non-fiction writing, or a historical dramatization are all valid options as are many other mediums. I particularly encourage students to apply their expertise in other genres to historical narration and argumentation.

If you were in my course last semester, you may choose to continue and build upon the project you already completed. We will work out together how to expand your work.

Our goal will be to foster a *collaborative research environment* in the classroom. Every week students will informally discuss their projects with the class and will be expected to help solve research, writing, or other problems with their classmates' projects.

Otherwise, final projects will advance in 5 steps:

Topic Proposal: Early in the semester students will work with me to define a theme, a historical focus, and research questions for their final projects. Students will write a very short explanation of the project.

Annotated Bibliography: The bibliography will be worked out with me to define primary and secondary sources for your project. The annotated bibliography will include brief descriptions of

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each source, how it is relevant to the project, and how you imagine you will use it in the final project.

Project Proposal: The project proposal will articulate with precision the historical context and the historical questions under examination. The proposal also *must* explain how the sources you have chosen will help answer your questions (we will spend a lot of time on this in class). Additionally, the proposal will describe the genre of your final product and how this genre will serve to represent the past.

A project proposal is just that: a proposal. It is an ephemeral document that represents a project at one point in time. We will be workshoping these in class and it should be expected that they will change.

(3 to 5 pages)

Early Draft: The early draft *must be complete*. It may lack an occasional paragraph or element, there may be parts that are unfinished, but it must accurately *reflect the full project*. These drafts will be shared with classmates and myself and students will be expected to provide each other thorough and constructive feedback.

Final Draft and Presentation:

The final product of your Individual Project will depend on the format you have chosen and will be worked out in consultation with me. In the last week of the course, students will share their work with their classmates.

All projects will be required to bring broader historical questions to bear on a specific site, time, persons, species, etc. Some suggested themes include (but are not limited to):

1. Expeditioning, or, doing science on the frontier
2. Scientists' encounters with native peoples, and vice versa
3. Indigenous/subaltern ways of knowing
4. Women and scientific knowledge
5. Gender and colonial scientific identities
6. The production of racial knowledge
7. Imperial ideas about nature
8. Public health measures in the colony
9. Bioprospecting in the colony
10. Networks of scientific practice
11. Thinking about history: archeology, geology, paleontology
12. Linguistics and/in the empire
13. Mapping *terra incognita*
14. Ethnography
15. Animals/Zoology
16. Botanizing in the colonies
17. Religion and science

Week 1. Introduction to the Course: Who Does Science?

Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (UNC Press, 2006) 1-10, 77-89, 215-226.

Week 2. Paradigms

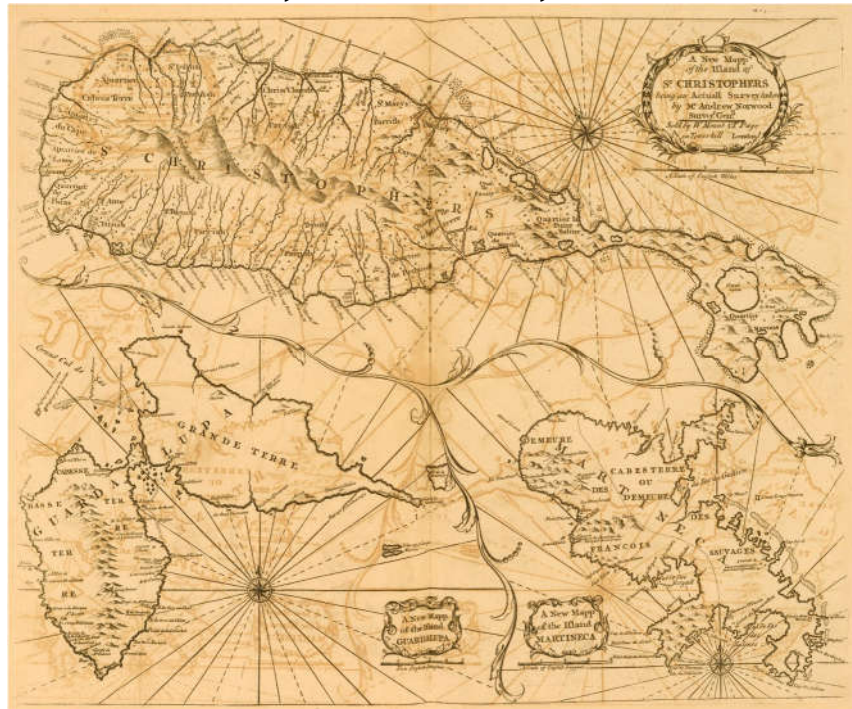
Max Horkheimer and Theodor W. Adorno, "The Concept of the Enlightenment," in *Dialectic of Enlightenment*, trans. Gunzelin Noeri (Stanford University Press, 2002).

George Basalla, "The Spread of Western Science," *Science* 156 (1967): 611-622.

Kapil Raj, "Beyond Postcolonialism ... and Postpositivism: Circulation and the Global History of Science," *Isis* 104 (2013): 337-347.

In-class discussion about topics for the Individual Project

Part 1: Networks, Distance, and Coordination



St. Kitts, 1784

For the next three weeks, we will consider the question of why expeditions and knowledge collected from afar were essential to scientific objectives in the 18th century. Focusing on cartography and the search for an effective method for measuring longitude (which was connected to many other sciences), we will also examine what it mean for the European man of science to *go out* into the furthest reaches of empire for the cause of increased knowledge.

Week 3. Cartography and Geospatial Coordination

Dava Sobel, *Longitude* (1998), 1-39

Short excerpts from Christopher Columbus, *Four Voyages*

Bruno Latour, *Science in Action* (Harvard University Press, 1987) chapter 6.

Jean-Baptiste Chappe d'Auteroche, *Voyage to California to Observe the Transit of Venus* (1778)

Primary Sources (in class): Maps

Topic Proposals Due

Be prepared to informally share your proposal with the class

Week 4. How to Play the Part of a Scientist in the Colony

Neil Safier, *Measuring the New World* (2008), Chapters 1 - 3

Primary Sources: Images of scientists in the colonies

Week 5. Indigenous Geopolitics, or, Triangulating Sources to Discern Indigenous Perspectives and Power

Short excerpt Marshall Sahlins, *Islands of History* (1985)

Short excerpt from Gananath Obeyesekere, *The Apotheosis of Captain Cook* (1997)

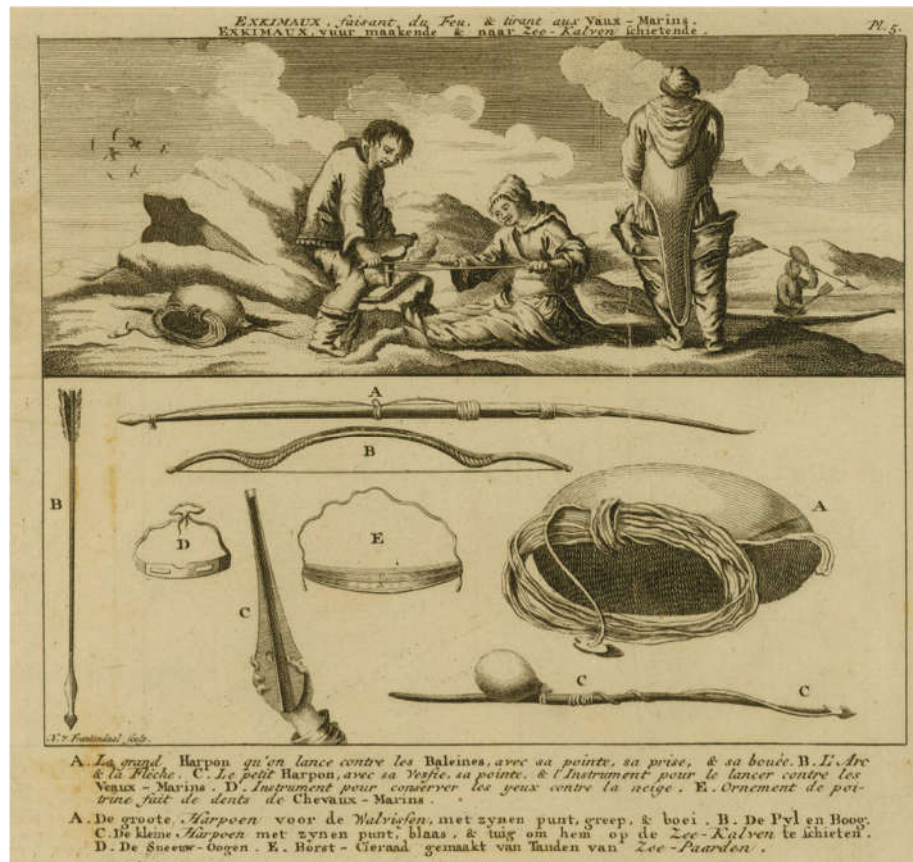
Excerpt from Alejandro Malaspina, *Journal* (1781)

Excerpt from George Vancouver, *Works*, (notes from 1782)

Excerpt from José Mariano Moziño, *Noticias de Nutka* (1782)

Annotated Bibliography Due

Part 2: Mobilizing Things, Mobilizing People



Artifacts and illustration of Inuit seal hunting, 1750.

The following weeks we will be examining the strikingly complicated interactions and networks between scientists, oppressed populations, and other important actors such as settlers and missionaries. We will be thinking about the ways in which Europeans sought to collect and transport home knowledge of the world, and how different populations reacted and/or participated in these endeavors. Questions we will ask and address include: Were Europeans able to simply steal and appropriate local knowledges? How and when did they require local help? At what price? How did scientific efforts relate to and affect wider conditions of power, exploitation, and control? Who had power over knowledge? How were racial and gender orders reflected in scientific practice in the colonies?

Week 6. Following Things, Collecting Things, Ordering Things

James Delbourgo, *Collecting the World* (2017), chapters 1 & 2

Primary Source: Excerpt from Hans Sloan, *Voyage to Jamaica*, 1725

Raj, Kapil. "Surgeons, Fakirs, Merchants, and Craftsmen: Making L'Empereur's Jardin in Early Modern South Asia." In *The Brokered World: Go-Betweens and Global Intelligence, 1770-1820*, edited by Simon Schaffer, James Delbourgo, and Lissa Roberts, 27–59. Sagamore Beach, MA: Science History Publications, 2009.

Week 7. Bioprospecting and Scientific Seeing in the Empire

Bleichmar, Daniela. *A Visible and Useful Empire: Visual Culture and Colonial Natural History in the Eighteenth-Century Spanish World* (2009).

Mary Louise Pratt, *Imperial Eyes* (1992) select pages.

Botanical Drawings from the Royal Botanical Expedition to New Spain (1787-1804)

Herbarium of the Royal Botanical Expedition to New Spain (1787-1804)

Please bring a laptop to class today

Project Proposals: *Students will workshop their project proposals with the class*

Week 8. Native Knowledge and the Global Emporium

Lance Thurner, "Indigenous Participation in the Royal Botanical Expedition to New Spain"

Cook, Cook, Harold J. "Global Economies and Local Knowledge in the East Indies." In *Colonial Botany: Science, Commerce and Politics in the Early Modern World*, edited by Londa Schiebinger and Claudia Swan. Philadelphia: University of Pennsylvania Press, 2005.

Refined Project Proposal Due

Week 9. Alternative Knowledges, Colonial Fears (Part I)

James Sweet, *Domingos Álvares, African Healing, and the Intellectual History of the Atlantic World* (2011) chapter 6

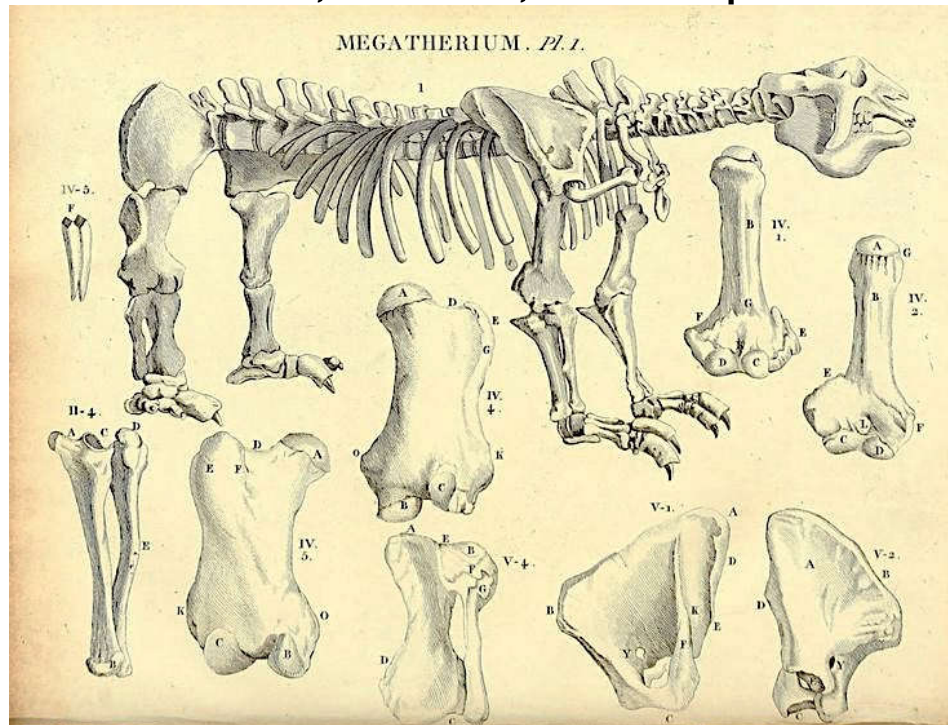
François Regourd, "Mesmerism in Saint Domingue," in *Science and Empire in the Atlantic World* (2008)

Inquisition record in James Sweet, *Domingos Álvares, African Healing*

Week 10. Alternative Knowledges, Colonial Fears (Part II)

Susan Scott Parrish, "Diasporic African Sources of Enlightenment Knowledge," in *Science and Empire in the Atlantic World* (2007)

Part 3: Facts, Truths, and Superstition



Georges Cuvier's illustration of a giant sloth skeleton unearthed in Patagonia, 1804.

In the final weeks of the course we will be examining how European men of science attempted to discern truth, facts, data, and knowledge from the lore, stories, artifacts, images, and experiences brought back from the colonies. Whose words could be trusted? How did one verify knowledge received from slaves? How did men of science take credit for the knowledge produced and how did they erase the slaves, Indians, and others who were also part of the process? Finally, we will consider the development and colonial consequences of the idea

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that the world contained *technologically advanced people with science* and *technologically backward people without science*, a distinction that has shaped global affairs all the way into the 21st century.

Week 11. Bring It All Home: Experimentation, Verification

Londa Schiebinger, *Secret Cures of Slaves* (Stanford, 2017) Chapter 2

Benjamin Breen, "No Man Is an Island: Early Modern Globalization, Knowledge Networks, and George Psalmanazar's Formosa," *The Journal of Early Modern History*, 17/4 (August, 2013), 391-417.

Juan Pimentel, *The Rhinoceros and the Megatherium* (Harvard, 2017) Chapter 4

Discussion about progress on Individual Projects

Week 12. Revolutionary Identities, Epistemologies

Jorge Cañizares-Esguerra, *Nature, Empire, and Nation: Explorations of the History of Science in the Iberian World* (Stanford, 2006) chapter 3.

Early Draft of Individual Projects Due: *Drafts will be workshopped in class*

Week 13. Race, Science, and "Science"

Michael Adas, *Dominance By Design* (2006) Chapter 1

Marwa Elshakry, "When Science Became Western: Historiographical Reflections," *Isis* 101, no. 1 (2010): 98–109.

Week 14. Presentations

This week students will present their final projects to the class