U.C. Berkeley
Legal Studies 39G
Elephants, Silt, Mercury, and Law
Fall 2015
TuTh 8-9:30 a.m.
Stanley 179

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Elephants, Silt, Mercury and Law: Managing the Environment in East Asia

Course Description

"ESML" will examine resource management and environmental degradation in China and Japan with an emphasis on the period from 1500 to the present. The course will introduce students to the methods that history and the social sciences employ to identify and explain changes in social, political, and economic institutions that affect how people use and abuse the natural environment. The course compares the experiences of China and Japan over three time periods: before 1850, 1850 to 1970, and 1970 to the present. Both places faced important resource management challenges before the arrival of Western imperialism and the industrial revolution in the period prior to 1850. From 1850 to 1970, East Asia industrialized and experienced colonialism and decolonization, which created new demands for natural resources and more acute environmental degradation. After 1970 changes in society and politics brought new efforts to reduce environmental degradation in Japan and the rest of the industrialized world. At the same time, China made the transition to a market economy and replayed the problems of the earlier era of rapid industrialization, on a much larger scale and with serious global consequences. Students will learn how human institutions have affected the natural environment over a long period in East Asia, which historically has been a major part of the global economy and a first mover in responding to environmental challenges.

Course Objectives

By the conclusion of this course, students should be able to

1. describe the methods that historians and social scientists use to make and evaluate claims about the world and the differences among those methods;
2. explain how environmental change shaped society and policy, and how human institutions affected the environment, over the course of ten centuries in Japan and China;
3. show how culture (broadly defined) affected understandings of the environment and the effect of human activity on it across the cultures of East Asia, with an emphasis on China and Japan.

Texts

Texts for the course have been ordered through the bookstore, but there will be a lot of course reading in electronic format on bCourses. If you cannot find a reading for a particular date, just ask. Readings may be updated throughout the semester, and I will indicate that on bCourses. I

will post study questions to help guide you through the readings. The following texts have been ordered through the bookstore.

Brown, H. Azby. *Just Enough: Lessons in Living Green from Traditional Japan*.

Economy, Elizabeth. *The River Runs Black.*

Elvin, Mark. *The Retreat of the Elephants: An Environmental History of China*.

George, Timothy. *Minamata: Pollution and the Struggle for Democracy in Postwar Japan.*

Shapiro, Judith. *Mao's War against Nature: Politics and the Environment in Revolutionary China.*

Totman, Conrad. *Green Archipelago: Forestry In Pre-Industrial Japan*.

Note that the readings for each class session are from multiple texts, both paper and electronic (on bCourses), and that we may read partial chapters; check the page numbers in the assigned readings. Be sure to keep up with the readings and ask if anything is unclear.

Requirements and Grading

The course requires you to read the assignments (note: study questions and in-class writing will be collected without advance notice), participate in discussion, and a write a research prospectus of approximately 15-20 pages on a question about any aspect of the relationship between humans and the natural environment in East Asia. The research prospectus is a **team project** that accounts for half of the graded work in the course. The prospectus will consist of several parts, each of which will be graded. There are guidelines for the research prospectus at the end of this syllabus. The research prospectus will give you in-depth knowledge of a particular aspect of how humans and the natural environment have interacted, prepare you to do research at the graduate level or in a job, and may also help you do things like apply for graduate study or for a fellowship. There will be a handout on final exam format and expectations as we approach the exam. The relative weights of the assignments are as follows.

Reading responses, assignments, and quizzes	25%
Research prospectus	50%
Final examination	15%
Participation	10%

Please feel free to come to office hours (or use the bCourses discussion or email) with ideas and questions about the reading and the research prospectus. This is one of the virtues of the seminar format, so take advantage of it.

Each student is expected to prepare for each class. Note that the reading for the course is front-loaded, and there is a fair amount of it. Take notes as you read (and in class) and refer to the study questions posted on bCourses. Please be on time. Research shows that you learn more when you take notes on paper and leave your networked devices off, but I am not going to be a nag. I also will take a relaxed attitude about eating and drinking in class, unless it turns out to be a distraction. Basically, we are all adults here, so the expectation is that we will treat one another with respect.

Finally, please refer to Berkeley's Academic Integrity policy (http://sa.berkeley.edu/conduct/integrity). *I take academic integrity and honesty seriously. If you plagiarize, cheat, or are otherwise*

dishonest, you will at fail at least the assignment in question, and I will file an academic dishonesty report. If you have any questions about this, please ask. Students requiring accommodation for disability should also see me as soon as possible. Make sure to check bCourses, since that will be our medium of communication.

Course Readings and Schedule[1]

1) Philosophy and theory (8/27–9/17)

   a) classical attitudes toward the natural world and human role in it

Date	Class topic	Assignments for class
8/27	syllabus & assignment overview	Syllabus, Research Prospectus guide
9/1	Classical Chinese views of nature *prospectus project team draw*	Tu (2001), "The Ecological Turn in New Confucian Humanism: Implications for China and the World" [bCourses] Goldin (2005), "Why Daoism Is Not Environmentalism" [bCourses]
9/3	Classical Japanese views of nature; developing a questions & writing a literature review *library tutorial with I-Wei Wang and Jesse Silva*	Swearer (2001), "Principles and Poetry, Places and Stories: The Resources of Buddhist Ecology" [bCourses] Shintō, Lu Sourcebook foundation myths [bCourses]

   b) tragedy of the commons and management of common-pool resources

9/8	Theories of common pool resources I	Hardin (1968), "The Tragedy of the Commons" [bCourses] Ostrom (1998), "A Behavioral Approach to the Rational Choice Theory of Collective Action" [bCourses] Study Questions 1
9/10	Theories of common pool resources II	Ostrom (1990), *Governing the Commons* ch. 1 "Reflections on the Commons" [bCourses] Study Questions 2 **RESEARCH QUESTION** due

[1] Readings subject to change at instructor's discretion. See bCourses for updates.

c) theories of state formation, modernity, rationalism, and markets

9/15	Resources and formation of the classical Chinese polity and the modern state	Wittfogel (1957), *Oriental Despotism* intro. & ch. 1 (pp. 1-21) [bCourses] Tilly (1985), "War Making and State Making as Organized Crime" [bCourses]
9/17	Rationalism and markets	Scott (1998), *Seeing Like a State* ch. 1 "Nature and Space" [bCourses] Study Questions 3

2) The Pre-Industrial Order (9/22–10/8)

a) Resource management before 1850

9/22	Extensive growth (through early medieval era) in Japan and China	Totman ch. 1 Farris (1985) *Population, Disease, and Land*, Intro., ch. 3 & ch. 4 [bCourses] Marks (1998) *Tigers, Rice, Silt, & Silk*, ch. 2 [bCourses] Study Questions 4
9/24	Era of exploitation: medieval economic revolution in China and feudal Japan	Marks (1998) ch. 6 [bCourses] Elvin chs. 1-3 Totman chs. 2 & 3
9/29	Premodern management of common pool resources *commons game*	McKean (1992), "Management of Traditional Common Lands" [bCourses] Ebrey sourcebook, Chinese water use contract & land trust [bCourses] Study Questions 5

b) Environmental degradation before 1850

10/1	Food/energy/water and urbanization	Brown part I (pp. 19-109) [easy reading and many illustrations]
10/6	Habitat destruction and ecosystem change I	Marks (1998) ch. 9 (pp. 277-308) [bCourses] Elvin chs. 5 & 6
10/8	Habitat destruction and ecosystem change II	Elvin ch. 8 Marks (1998) ch. 10 & Conclusion (pp. 309-345)[bCourses] Study Questions 6

3) Industrialization and its pressures: the century of exploitation (10/13–10/27)

a) Resource management 1850 to 1950

10/13	Imperatives of the modern state: Japan	Brown part II Totman chs. 4-6 Study Questions 7
10/15	China: dynastic decay and state building	Elvin chs. 11-12 Elvin "Concluding Remarks"

b) Environmental degradation 1850 to 1970 *(note: optional but excellent videos from the PBS series "People's Century" series—please see bCourses)*

10/20	Japan's pollution problem I	Notehelfer (1975) [bCourses] George Introduction–ch. 4 (pp. 1-124) Study Questions 8
10/22	Japan's pollution prob. II	George chs. 5–6 (pp. 125-176)
10/27	Designing research	**LITERATURE REVIEW** due
10/29	Mao and nature I	Shapiro Intro–ch. 1 (pp. 1-65)
11/3	Mao and nature II	Shapiro ch. 2 (pp. 67-93) Study Questions 9

4) Environmental Era—coming to grips with constraints after 1970 (11/5–12/3)

a) tackling pollution in industrial democracies

11/5	Japan: litigation & legislation I	Upham (1987) ch. 2 [bCourses]
11/10	Japan: litigation and legislation II	George ch. 7–epilogue (pp. 179-291)
11/12	Mao and nature III	Shapiro ch. 5 (pp. 195-215)
11/17	Putting the prospectus together	**RESEARCH DESIGN** due

b) Rise of China

11/19	Pollution & "market socialism"	Economy chs. 1 & 3

c) *research prospectus presentations* 11/24, 12/1, 12/3

FINAL PROSPECTUS DUE ELECTRONICALLY DECEMBER 11

FINAL EXAMINATION WEDNESDAY 16 DECEMBER 2015, 3:00 – 6:00 P.M.

Research Prospectus Guide

Most college students hope to enter professions in which they use their heads to answer questions about how the world works and then report the results back to their audience. These kinds of jobs are least likely to be outsourced and require analytical skills that are both qualitative (what? how? why?) and quantitative (how much? when? where?). The key parts of generating new knowledge that other people want are (1) discovering and outlining the current state of knowledge on the question you want to answer, and (2) designing a way to answer the question using evidence from documents or from the world itself.

College professors and researchers call step (1) a "literature review," and most course papers are literature reviews that try to find the best possible answer to a question, given the information that other people have gathered and then reported. Often, this is all that is necessary to answer a question—it is the quick, "Wikipedia" approach. Sometimes, though, there is no clear answer, and a person who wants to answer the question must find new evidence. That person needs to move to step (2), creating a research design. A research design attempts to determine whether or not an answer proposed by the existing literature is really the best answer. This is the interactive process by which science works: by rejecting, confirming, or modifying answers other scientists have proposed to problems.

The "scientific method" is the general characterization of this process of confirming, rejecting, or modifying answers; the scientist finds new knowledge by proposing one explanation for an event and eliminating all the competing explanations. The clearest way to do this is the scientific experiment. The experimenter holds constant all possible causes, except the one she wants to investigate, to see whether or not it brings about the expected result. This works in physics and chemistry (where it is possible to hold everything constant in laboratory conditions), and even sometimes psychology and clinical medicine (where the experimenter can randomly assign a relatively large number of subjects to treatment and control groups).

But it is hard to do in fields like history, economics, politics, or epidemiology because the researcher cannot hold constant all the variables but the interesting one, nor can she assign countries or people to treatment and control groups. For example, an epidemiologist interested in the effects of long-term smoking could not randomly assign children into a treatment (smoking) group and a control (non-smoking) group in order to find out whether or not they developed diseases decades later. Like epidemiology, the social sciences have to use other techniques for confirming hypotheses (cause and effect accounts of how the world works). Essentially, these techniques try to show that one explanation is superior to other possible explanations using logic, comparison, and statistical inference methods. History and political science both share this focus on explanation.

"Elephants, Silt, Mercury, and Law" is not a methods course, but the research prospectus will force each student to think of ways of confirming, or "disconfirming," a hypothesis that answers the question you want answered. We will discuss the ways to do this in class and in the course of writing the research prospectus. Consider it practice for the senior thesis, graduate school, or that high-paying marketing job you have always wanted.

The research prospectus assignment is a team project in four parts:

a. a statement of the research question and an annotated list of at least five *peer-reviewed* sources that could help to answer the research question ("**RESEARCH QUESTION**");

b. a thorough review of at least eight high-quality sources[2] that shed light on the research question and a proposed answer (i.e., a research hypothesis) ("**LITERATURE REVIEW**"); and

c. a method that would allow you to evaluate whether or not the proposed hypothesis was better than competing hypotheses ("**RESEARCH DESIGN**");

d. a final prospectus incorporating all the revisions suggested by your peers and instructor ("**FINAL PROSPECTUS**").

We will use the American Political Science Association Style Manual for citation and reference format. An electronic copy is on the bCourses site for this class.

We will spend time in class discussing how to find sources, prepare the literature review, and create a research design. Your research idea could take you to China, Japan, or an archive, but the ultimate goal of the research is to add to our stock of knowledge about the relationship between human society and organization and the natural environment. Remember that you are *proposing* research; in this course you will not have time to actually conduct the research you propose. You may want to think ahead, however, to graduate programs or research fellowships. This assignment will give you experience in proposing research in school or at work.

The due dates, and proportions of the total ***prospectus*** grade, for the various part of the assignment are as follows:

RESEARCH QUESTION/SOURCES	**SEPTEMBER 10**	**5%**
LITERATURE REVIEW	**OCTOBER 22**	**20%**
RESEARCH DESIGN	**NOVEMBER 12**	**15%**
ORAL PRESENTATION	**NOV. 24—DEC. 3**	**10%**
FINAL PROSPECTUS	**DECEMBER 11**	**40%**

Consult with me early and often. The universe from which research questions may be drawn is wide open. The only requirement is that the question must have something to do with human-environment interaction in East Asia over the period covered by the course.

The thing to remember? *Revise, revise, revise.* You will get comments on each part of the research prospectus, and I will expect you to revise each part for incorporation into the finished product. The complete research prospectus assignment is worth **half** of the overall course grade.

[2] These eight sources must be peer-reviewed and may include all or some of the five peer-reviewed identified in the Research Question segment. You are free to use other sources in the Literature Review as long as you are critical about their quality and accuracy.

Literature Review Guide

A literature review tells the reader why the research question is important, how it fits into the realm of historical or political (or economic or social) phenomena, and what others have learned about the question. That means the literature review covers both theory (which explains why the question is important and how it fits into the universe of social reality) and evidence (what others have discovered). For example, if the research question is "What happened to soil conservation practices in arid parts of China once agriculture was collectivized?" the literature review should include theories about the connection between ownership forms and conservation as well as evidence on the state of farm soils in arid parts of China before, during, and perhaps even after the era of the People's Communes. For purposes of the Research Prospectus, the literature review should be about 6-8 pages, so that there will be room for the research design section. Remember that the existing scholarly literature will not fully answer the research question but will instead point would-be researchers toward unanswered questions and unexplored sources of new knowledge.

The secondary point of the literature review is to highlight gaps in the existing state of knowledge. That means the researcher needs to pay attention to the following attributes of a source (which can be a scholarly journal article, paper, or book, a journalistic report, official information, or the like):

- quality/reliability/reputation
- freshness
- ideological perspective
- data quality
- methodological quality

Note that the literature typically relies only on secondary sources. Secondary sources are created by scholars and include histories, journal articles, and so on. Primary sources are not mediated by some other researcher; examples include interview transcripts, diplomatic cables, and journalistic accounts. One way that scholars ensure the quality of secondary sources is through the review process: other scholars read and evaluate the work of an author. Refereed journals and books are therefore the "gold standard" for secondary sources. For primary sources, the burden of quality evaluation falls on the researcher alone. This is a particular problem for contemporary China, where official data (especially statistics) might have serious quality problems. Typically, reviews of the literature focus on secondary sources and include some discussion of a source's flaws as well as the unknowns that still need to be discovered.

The goal of social research is to advance what people know about human organizations and behavior, and so the process outlined above follows the model of scientific inquiry in areas like biology or geology. The literature review should establish that the answer to your research question addresses a gap in understanding and should show that the planned research project builds on the shoulders of others. Orthodox and imperfect, yes, but also a proven technique for learning about the world.

Research Design Guide

A research design tells your audience how you will answer your research question, or, in other words, how you will confirm (or disconfirm) your proposed hypothesis. Since the idea behind the Research Prospectus is to get you to think seriously about how you would conduct research on contemporary China, you need to cover at least five elements of your research that affect the confidence your audience has in your findings. It is fine to cover them explicitly by including headings and noting possible problems. By way of example, let's suppose the research question is "What effect did Great Leap Forward agricultural investment projects have on household incomes in the reform era?" The literature on the Leap shows that most investments were wasted but that irrigation investments often helped the communes that built them.

1. **variables**

   Sounds scary, but variables are just another name for causes and effects. In most social science research (as in most natural science research) we are telling a story about cause and effect in order to find the most plausible explanation and rule out alternative explanations. "Independent variables" are causes, "dependent variables" are effects. In our example, the independent variable is Great Leap Forward agricultural investment and the dependent variable is household income in the reform period. To actually come up with things you can measure you need to *operationalize* those variables. Here, measures you could use to operationalize the independent variable could include man-hours invested in irrigation works and land preparation in the period 1958-1960, for example. The dependent variable is easy to operationalize, although you would have to choose a time point during the reform period and say why you chose that point.

2. **data sources**

   Where will you find the information you need to confirm (or reject) your hypothesized answer? Think of this as your set of "primary sources," as opposed to the secondary sources that make up your literature review. There are a huge variety of data sources in history and social science, including archival records, official statistics, surveys, expert interviews, participant interviews, participant-observation, and sometimes even experiments. Multiple sources of data (that agree) will increase the level of confidence your audience has in your hypothesis. For our question above, data sources could include archival records (to find out what was constructed when), official statistics (reform era income) and perhaps interviews with local officials or peasants who could give first hand accounts.

3. **case selection**

   One helpful way of thinking about any sort of empirical research is as a set of rows and columns. To wit,

Variables

Cases	Brigade/village	person*hrs expended irrigation 1958	person*hrs expended terracing 1958	person*hrs expended reforesting 1958	number of households 1979	**Total household income from agric. sources 1979**
	Xiayu	1250	4590	300	400	**320000**
	Xiaxue	12500	0	3000	300	**170000**
	Pianyi	45000	23000	0	450	**450000**
	Ganjing	120000	0	0	300	**120000**
	Binlang	0	22000	7000	200	**240000**

In other words, you need to measure your variables (the measure need not be numbers, and in fact can be **qualitative** observations like yes/no, high/medium/low, and so on) for each of the cases you study. The cases for which you collect values are "units of observation" but you can draw your conclusion about China, or rural China, as a whole—that is your "unit of analysis." The unit of observation and the unit of analysis can be the same, of course.

The key here is to have a logic behind your selection of cases that supports the relationship you want to show. For example, if your unit of analysis is China and your unit of observation is the production brigade/village, then you need to have a sample of villages from throughout China to make a general statement. You would have to use a sampling technique to choose villages in such a way that would allow you to make such a general claim (and there are many statistical reference books that explain how to create such a sample). If you have too few units of observation to use a statistical sampling technique, though, you still need to have a logic of case selection. The easiest way to think about that problem is to make sure that the units of observation are at least different in terms of the outcome that interests you (the dependent variable). If all the villages in the example have the same level of household income, then it would not be possible to conclude whether or not the Great Leap Forward agricultural investments had any effect on income (unless you could gather additional information).

You may have just one unit of observation and analysis, too (for example, China). In that case you need to look for change over time, as you might in an experiment in which you vary a condition for the treatment group (but not the control group). This is difficult to do in the social sciences (since there usually is no control group) but researchers have given some thought to showing cause-effect relationships when experiments are impossible.[3] Remember that the overall goal is to come up with an explanation that is true in general and that is better than competing explanations.

[3] Campbell, Donald T., and Julian C. Stanley. 1963. *Experimental and Quasi-Experimental Designs for Research*. Boston: Houghton Mifflin Company.

4. analysis method

Your analysis method is what allows you to come to a valid conclusion that could be repeated by anyone else looking at the data. Often, in political science, the researcher has too few cases to use statistical techniques of generalization (unlike the example above). What do you do if you have few cases ("small N") or only one case? There are a number of comparative techniques that help researchers draw out causal relationships from a small number of cases; examples of these include "most similar systems" and "most different systems" types of analysis.[4] I will be happy to discuss these and any other methods. Statistical and data analysis techniques (e.g. content analysis) are also something you should explicitly discuss if they are an integral part of confirming your hypothesis. If you have only one case for which you want to show a causal relationship you will have to approach it as a "quasi-experiment" (see above).

5. confounds & problems

The overarching goal in the research design is to show that, if the data warrant, you will be able to do an adequate job of confirming your hypothesis and showing that competing hypotheses are not as good (because they are more complicated or less general explanations, typically). Occasionally the real world gets in the way and introduces a variable that confounds the causal relationship you are interested in. For example, factors other than Great Leap Forward agricultural investment can affect 1979 household income in a village—what about brigade enterprises? village prosperity prior to the Great Leap? You should therefore discuss how you will control for other causes that may influence the effect you are interested in. Statistical methods like multiple regression are one way to control for confounding factors (and alternative explanations). There are ways of handling confounds when you have only one case that changes over time. Showing that you have considered alternative explanations, possible confounding factors, and problems with data collection and data quality will make your proposed research much more worthy of investment, whether the funding decision is made by the Luce Foundation, the U.S. government, or Procter & Gamble.

Even if you do not become a professor of history, political science, sociology, or for that matter economics or psychology, you still may find yourself using social science research methods in fields like marketing, public policy, business analysis, or public health. Think of the research design part of your Research Prospectus as a way of thinking about the problem that interests you and as a way of creating new knowledge about the world. Feel free to talk to me, and remember that any major research project is a work in progress. It is fine to be wrong; that is how knowledge develops.

[4] Collier, David. 1991. "The Comparative Method: Two Decades of Change." In Dankwart Rustow and Kenneth Erickson (eds.), *Comparative Political Dynamics: Global Research Perspectives.* New York: Harper Collins (pp. 7-31).

Putting It All Together into the Final Prospectus

Once you have developed a research question (and revised it as appropriate), found sources, organized the explanations in those sources into a literature review, and developed a research design that will allow you to fill in the gaps in explanation for your question, you will have to put the question, literature review, and research design together into the prospectus. The simplest way to do this is to think of the prospectus as an argument for doing the research you propose. I think of a research prospectus as having four parts, to wit:

1. The motivation for the research (and the question), where you introduce what you want to find out and make an argument for the importance of the question. In the Great Leap Forward example above, you would probably want to say that scholars view the GLF as one of the most overheated attempts to use the "big push" to raise investment levels and as one of the least successful programs for economic growth on record, in light of the famine and drastic retrenchment. But the researcher in the example wants to challenge the conventional wisdom, since it is entirely possible that the right sorts of investment led to agricultural output gains later on. That is pretty strong motivation to do the research, since it will improve our understanding of the Great Leap Forward.
2. The literature review, where you organize what other scholars have said about the question and identify what still needs answering.
3. The research design, where you explain how you will find the answer to your question (and why it is feasible for you to find the answer in the way you describe).
4. A brief conclusion, where you explain why the particular research you have just proposed is worthwhile (as though you were writing an application for a grant, perhaps).

A good research prospectus convinces the reader that the research question is important, that the author has a good idea of how to develop information to answer the question, that the research is feasible, and that the conclusions from the research will improve our stock of knowledge about history, politics, society, economics, or all of these. Writing a prospectus is difficult, but it helps the writer pursue new knowledge systematically and efficiently, by building on what other have learned and thinking carefully about where to go next.