

Interdisciplinary Methodology, University of Pittsburgh, 2015

ABSTRACT

This is a graduate-level course in interdisciplinary theory and methods, open to students enrolled in any field at the university. Its purpose is to go beyond the details of their primary discipline, to gain experience in learning and researching in several other disciplines, and to develop skill in a cross-disciplinary discourse on research and knowledge more generally. Students choose disciplines that they wish to explore, assign readings, give class presentations on two disciplines, and lead fellow students on exercises within each discipline. At the end of the term, students give presentations on disciplines new to them, articulating methods and applications.

Interdisciplinary Methodology, HIST 2020

University of Pittsburgh, Spring 2015

Cross-listed in **History, Cultural Studies**

Tuesday, 1:00 – 3:30 p.m.

3700 Posvar Hall

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hours: M & W, 1:00 – 2:00 p.m.

Course Description

This is an advanced graduate course in interdisciplinary theory and methods. It is to bring together students from widely varying disciplines to share the work of learning new disciplines. The course provides a key space in which the university facilitates cross-disciplinary discourse at an advanced level.

The course is scheduled for Spring 2015. It was previously given in 2009 (in History) and in 2012 (sponsored by Global Studies and scheduled in Cultural Studies). One student from the 2012 course received a graduate fellowship for research on the NSF-funded CHIA project; two students from the 2015 project are expected to receive similar research fellowships during 2015-2016.

Course Objectives

The overall objective of this interdisciplinary graduate course is to encourage the development of a multidisciplinary academic discourse at Pitt, particularly emphasizing global perspectives. Interested graduate students and faculty members participate from all sections of the university, under the aegis of the Global Studies Center and the World History Center. The specific course objectives are:

- To introduce students to a wide range of disciplines, theories, and methods. Discussion is to include the framework, data, method, and analysis for each discipline.
- To enable individual students to develop substantial strength in a new discipline and method of their choice.
- To compare and contrast the various disciplines, seeking out links and parallels among them.

- To consider the possibility of creating a global historical dataset reflecting many of these disciplines.

At the end of the course, students should:

- have gained literacy in disciplines in the humanities and arts, social sciences, natural sciences, and information sciences. By “literacy” is meant:
 - familiarity with elements of the scope (subject matter, variables and frameworks), method (types of analysis), and theory of multiple disciplines
 - familiarity with categories of empirical study in the same disciplines
 - familiarity with the similarities, links, complementarities, and contradictions of various disciplines and their theories
- have developed particular strength in one new methodology.
- have developed a language for cross-disciplinary discussion and analysis.
- Have gained experience in the combination of data from different disciplines to construct a global picture of aspects of human society.

Students will complete assignments on three levels.

- (1) Each week, students are responsible for completing the assigned reading, exploring optional readings, and gaining familiarity with the elements of the discipline under study in that week.
- (2) Each week, one or two students will select, assign, and lead discussion on readings conveying the nature of the method assigned for that week and the significance of its results. (Students will select their assignments at the start of the semester.)
- (3) Students will prepare to join actively in each week’s cumulative discussion by scrutinizing the epistemology apparent in each method and by working to develop a language for cross-disciplinary discussion.
- (4) Each student will select a method to learn in depth and submit, at the end of the semester, a substantial paper articulating that method and discussing an application. The paper will be posted and discussed.

Required Readings (especially for the History section of the course):

Peter Burke, *History and Social Theory*, 2nd. Ed. (2005)
 Patrick Manning, *Navigating World History: Historians Create a Global Past* (2003)
 Diego Holstein, *Thinking History Globally* (2014)
 Gary King, Robert Keohane, and Sidney Verba, *Designing Social Inquiry* (1994)

Plan for Term Paper.

The term paper for this course consists of an investigation and justification of a methodology you have chosen to learn, within a discipline you have selected. Please write a plan for your term paper of roughly two pages in length (600 – 800 words), and submit it by the evening of February 9 to pmanning@pitt.edu.

In your plan, you should address the following points. You may address them in any order you wish, but make sure to address each of them.

1. Your discipline and the methodology in which you are most expert.
2. The discipline and the methodology within it that you have chosen for study (You may choose the interplay of more than one methodology or discipline if you wish, if you can anticipate clear benefits from the additional complexity.)

3. Why this discipline and methodology are of interest to you.
4. Resources on which you expect to draw in preparing your paper.
5. The issues and dynamics that would be studied with your selected methodology.
6. Types of examples that your paper might include.
7. What type of conclusion to you envision writing for your paper?

Fields of students -13 students total

- 6 – History (World-3, Atlantic-2, Sport-1)
- 3 – Anthropology (Archaeology, Ethnography, Economic)
- 1 – Information Science / History of Art & Architecture
- 1 – Medicine / Public Health
- 1 – Education Management
- 1 – East Asian Studies (Literature)

COURSE SCHEDULE

Week 1. Jan 6. Introduction; Epistemological dynamics (Patrick Manning)

Week 2. Jan 13. Philosophy; organization of presentations (Patrick Manning)

Week 3. Jan. 20. Environment (Matt Drwenski, Aisling Quigley, Alex Mountain)

Week 4. Jan. 27. Social Sciences (Patrick Manning)

Week 5. Feb. 3. Art Criticism (Aura Jirau Arroyo, Rongqian Ma, Aisling Quigley)

Week 6. Feb. 10. History II (Amar Bahadur B K, Weiyan Xiong, Alejandra Sejas Portillo)

Week 7. Feb. 17. History I (Carlos Alberto Lopez, Rongqian Ma)

Week 8. Feb. 24. Systems (José Fernandez-Montes de Oca, Weiyan Xiong, Bennett Sherry)

Week 9. Mar 3. Genetics (José Fernandez-Montes de Oca, Jacob Pomerantz, Carlos Alberto Lopez)

Week 10. Mar. 10. Spring break

Week 11. Mar. 17. Political Science (Aura Jirau Arroyo, Ognjen Kojanic, Alejandra Sejas Portillo)

Week 12. Mar. 24. Economics (Matt Drwenski, Ognjen Kojanic, Amar Bahadur B K)

Week 13. Mar. 31. Information Science (Jacob Pomerantz, Alex Mountain, Bennett Sherry)

Week 14. April 7. Presentations

Week 15. April 14. Presentations

DETAILED SYLLABUS

Week 1. January 5. Introduction. Patrick Manning

Week 2. January 13. Philosophy. Patrick Manning

Week 3. January 20. Public Health: Matt Drwenski, Aisling Quigley, Alex Mountain)

Public health, according to the Centers for Disease Control and Prevention (CDC), comprises “all public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction.”^[1] As this definition suggests, public health penetrates social infrastructure in significant ways, and is inherently interdisciplinary. At the University of Pittsburgh, the School of Public Health is fractured into seven specializations: behavioral and community health practices, biostatistics, environmental and occupational health, epidemiology, health policy and management, human genetics, and infectious diseases and microbiology. For the purposes of this class, we will be examining the quantitative and qualitative methodologies employed in this field of research through introductory texts and specific case studies.

Please focus on the introductory textbooks first to gain an broad understanding of the field before moving onto the specific case studies.

Readings

Introductory texts

The following are excerpts from some commonly used textbooks for students new to public health. These short reading quickly sketch out the boundaries and approaches most common to the discipline.

(Files 1, 2) Yeboah, David A. *Research Methodologies in Public Health*. Hauppauge, N.Y.: Nova Science Publishers, 2010. (PDF attached)

(Files 3, 4, 5) Jacobsen, Kathryn H. *Introduction to Global Health*. Sudbury, Mass.: Jones and Bartlett Pub., 2008.

The Nurse’s Health Study

This is a significant longitudinal study well known in the field of public health. The following articles illustrates how data from this study was originally conceptualized and how it continues to be utilized in current public health research:

(File 6) Belanger, Charlene F., Charles H. Hennekens, Bernard Rosner and Frank E. Speizer. "The Nurses Health Study." *The American Journal of Nursing* 78, no. 6 (06, 1978): 1039-1040. <http://www.jstor.org/stable/3462013> (PDF also attached)

(File 7) James, Peter, Philip J. Troped, Jaime E. Hart, Corinne E. Joshi, Colditz, Graham A, Ross C. Brownson, Reid Ewing, and Francine Laden. "Urban Sprawl, Physical Activity, and Body Mass Index: Nurses' Health Study and Nurses' Health Study II." *American Journal of Public Health* 103, no. 2 (2013): 369-375. <http://search.proquest.com/docview/1312687934?accountid=14709> (PDF also attached)

Research topics and case-studies in Public Health

The following two chapters, one on food and nutrition and the other on global health, are from a reader for Public Health graduate students. Each chapter contains a brief overview of the history of one aspect of the discipline (which you may skim) and three scholarly articles detailing different approaches and case-studies.

(File 8) The readings are attached but they can also be accessed through Ebrary using the following link: [Public Health: The Development of a Discipline, Twentieth-Century Challenges](#).

(File 9) Schneider, Dona, and David E. Lilienfeld. *Public health: The development of a discipline, twentieth-century challenges*. Piscataway: Rutgers University Press, 2011.

Week 4. January 27. Social Sciences. Patrick Manning

King, Keohane, Verba, *Designing Social Inquiry* (1994)

The book is to provide "a unified approach to valid descriptive and causal inference in qualitative research."

Chapter 1. The Science in Social Science.

Please pay attention to all of the main definitions (including components of research design) and to the examples (Martin and Putnam p. 5, dinosaurs p. 11)

Chapter 2. Descriptive Inference.

Give attention to the difference between interpretation and inference, as with the difference between "twitch" and "wink" (pp.39-41) and comparative case studies (44-5).

Read in detail on summarizing historical detail (53-55) and descriptive inference (55-63). Be ready to discuss the meaning of "unbiased" and "efficient" inferences.

Please note that page 74 (the last page in Chapter 3) is included at the start of the file for Chapter 3.

Chapter 3. Causality and Causal Inference.

Give attention to "defining causality" (76-85); also to "alternative definitions of causality" (85-91).

Based on your readings and thoughts about causality and causal inference, to what degree do you think explanations (of processes you are trying to understand) should be causal explanations? Can you think of or do you tend to use other, non-causal types of explanations?

Week 5. February 3. Art Criticism. Aura Jirau Arroyo, Rongqian Ma, Aisling Quigley

Introduction

Jonathan Richardson (1667-1745), an English painter, introduced the term “art criticism” in the 18th century. Denis Diderot made a pivotal contribution to the field in the form of “The Salon of 1765,” and the mantle of art criticism was carried by a succession of male art historians who summoned the arrival of new art movements (abstract impressionism, etc.). Our readings focus on seminal writings in the field of art criticism, incorporating the voices of significant 20th century critics (Venturi and Greenberg) as well as contemporary scholars in the field (Elkins), including a piece about non-academic art criticism (*Pictures & Tears*). We also offer a reading from a feminist art historian (Raven) and a sampling of Chinese art criticism (Bush and Shih).

These readings will inform our conversation and discussion in class next Tuesday.

Readings

- 1. Venturi, Lionello. *History of Art Criticism*. Translated by Charles Marriott. New York: E.P. Dutton & Company, Inc., 1936, 19-40.**

Chapter 1

Lionello Venturi was an Italian historian and art critic. His impact is reflected in a broad bibliography of topics related to Art History, Criticism and Theory, as well as in the first *catalogue raisonné* of Paul Cézanne. As a political refugee, Venturi carried his teachings through various European countries and the United States.

Though almost eighty years old, this reading serves as a valuable introduction to Art Criticism, exploring its relationship with Art History and Aesthetics. Furthermore, it explores the three main factors of judgment (the pragmatic, ideal, and psychological factors) that will be used to further discussion on the basic methods of Art Criticism within its subjectivity.

- 2. Darracott, Joseph. *Art Criticism: A User's Guide*. London: Bellew Publishing, 1991, 83-120.**

Chapter 7-10

Joseph Darracott was a renowned art historian and critic. Trained in France, he was very influential in the British museum scene, coordinating several exhibitions and editing the publication, *Museum News*, in the United Kingdom. Throughout his life, he also taught art history in several institutions of higher education.

In these last four chapters of *Art Criticism: A User's Guide*, Darracott takes the reader through the specifics of the three main steps in creating an Art critique: description, interpretation and evaluation. Using several examples, he defines core concepts within each step and seeks to find concrete reasoning within the subjectivities of the field. The last chapter specifically deals with how art criticism should be written and how to identify and find proper art critiques.

- 3. Elkins, James. *What Happened to Art Criticism?* Chicago: Prickly Paradigm Press, LLC, 2003.**

James Elkins (1955-) is currently the E.C. Chadbourne Professor in the Department of Art

History, Theory, and Criticism at the School of the Art Institute of Chicago. Elkins has published several academic and trade books, including Art History vs Aesthetics (2005), and What Painting Is (1998).

What Happened to Art Criticism? (2003) is important because it contextualizes art criticism while also describing its shortfalls. Elkins references and takes apart the writing of contemporary art critics, but also incorporates historical figures of significance in the field. Elkins' introduction describes the dilemma that is evoked in the title of the book itself: why isn't art criticism taken seriously, even though it is everywhere?

4. **Alex Rule, David Levine. International Art English. Triple Canopy**
http://www.canopycanopycanopy.com/contents/international_art_english, 2012.

International Art English, available to read online (see link above), and also available as a PDF that we generated in this folder, caused quite a stir when it was published in 2012. The piece serves as an analysis of art-world-speak, examining every press release sent out by e-flux (a publishing company/artist project) since 1999, using the digital tool Sketch Engine. The publication playfully describes IAE, which they posit was disseminated by art critics but then adopted by the general population (to the chagrin of art critics).

CHOOSE ONE OR THE OTHER: (Western Art Criticism):

5. **Greenberg, Clement. *Clement Greenberg: the Collected Essays and Criticism*. Chicago: The University of Chicago Press, 1986, 14-18.**

9—Review of Exhibitions of Mondrian, Kandinsky, and Pollock; of the Annual Exhibition of the American Abstract Artists; and of the Exhibition *European Artists in America*

Clement Greenberg (1909-1994) was an archetypal 20th century art critic, heavily influenced by the writings of Immanuel Kant (1724-1804) (particularly his Kritik der Urteilskraft (1790)), Walter Pater (1839-1894), and Roger Fry (1866-1934), and the paintings of abstract expressionist Hans Hofmann. Greenberg espoused formalism through his writings about modern art, describing, in particular, the purity of art media (for example, emphasizing the flatness inherent of paintings). Greenberg wrote extensively on Jackson Pollock (1912-1956), but also wrote favorable reviews of William Bazotes, Willem de Kooning, Arshile Gorky, Robert Motherwell, and Barnett Newman.

For this class, we selected an exhibition review from Greenberg's Collected Essays and Criticism, including a foreword by John O'Brien, in order to provide a sense of how a seminal art critic of the 20th century actually reviewed art. This review encompasses the work of Jackson Pollock, Piet Mondrian, and Wassily Kandinsky.

For further information about Clement Greenberg, please see his entry (<https://dictionaryofarthistorians.org/greenbergc.htm>) in the Dictionary of Art Historians. I would also highly recommend his piece, "Modernist Painting," which originally aired as a radio broadcast in 1961 (here: <http://cas.uchicago.edu/workshops/wittgenstein/files/2007/10/Greenbergmodpaint.pdf>).

6. **Raven, Arlene. *Crossing Over: Feminism and Art of Social Concern*. Ann Arbor: UMI research Press, 1988, 102-112.**

Judy Chicago: Selections from *The Birth Project*

Arlene Raven (1944-2006) was a feminist art historian and art critic, who, along with artist Judy Chicago (1939-) and graphic designer Sheila Levrant de Bretteville (1940), founded the Feminist Studio Workshop. In an area largely dominated by male voices, Raven's writing provides a new perspective on art criticism. In this excerpt, Raven reviews the work of Judy Chicago, offering a voice that diverges significantly from that of Clement Greenberg.

CHOOSE ONE OR THE OTHER (Asian Art Criticism):

7. **Faure, Bernard. "The Buddhist Icon and the Modern Gaze", *Critical Inquiry*, 1998, 768-813.**
"The Buddhist Icon and the Modern Gaze" serves to open a window for Asian art criticism. In this article, Faure explores how Japanese Buddhist icon could (or could not) be aptly interpreted with western criticism and in a modern context. By examining both the limits and potential for applying western theory and perspective to Japanese Buddhist art, Faure makes valuable concerns for understanding Japanese art, and provides a possible path to further get a sense of Asian aesthetics and perspectives of art.
8. **Susan Bush, Hsio-yen Shih. *Early Chinese Texts on Painting*. Hong Kong: Hong Kong University Press, 2012, 1-17.**

Introduction

This piece introduces the basic philosophical and aesthetic ideas behind traditional Chinese art criticism. Bush and Shih excerpt and translate texts from Chinese classics to delineate a history of traditional Chinese art criticism and explains the major methodologies it employs. This article serves as an example of non-western art criticism, which may provide another way of understanding "art criticism" with its particular critical format.

OPTIONAL RECOMMENDED READING

9. **Elkins, James. *Pictures & Tears: A History of People Who Have Cried in Front of Paintings*. New York and London: Routledge, 2001, 1-39 and 220-225.**

Chapter 1 & 2 and Appendix

As its title suggests, Elkins' book tells stories about people crying in front of paintings. He collected materials from history and also from his correspondence with friends and colleagues, and found that paintings naturally have a power to move people. This book serves as an example of non-academic art criticism. It shows another way of writing about art and the relationship between people and art; it might also imply that even just crying could be a form of "art criticism".

Week 6. February 10. History 1. Amar Bahadur B K, Weiyan Xiong, Alejandra Sejas Portillo

In the presentation of History I Group, we will provide a broad picture of the historical methods. The readings are divided into two sections. The first section aims to give an overall introduction of models and methods of historical research (Burke, 1993), and a brief history of historical research methods (Howell & Prevenier, 2001). The second section contains three exemplary studies as showcases of three

specific areas of historical methods: quantitative method (Kleinberg, 2005), oral history (Yow, 2005), and subaltern studies and postcolonial historiography (Chakrabarty, 2003; Guha, 1997).

Section One: Overall Introduction

1. **Peter Burke. 1993. "Chapters 1-2." In *History and Social Theory*, pp. 1-38, Cornell University Press.**

The first chapter of this book deals with the discussions about social theory and history, and how can both contribute to each other. The author presents the scenarios in which both of them have been related to each other and also moments in which they have completely grown apart, under the dichotomy of theory and practice. The author advocates for a more integrative and collaborative approach between social science theory and history. The second chapter of this book presents a discussion about the use of four methodological approaches, comparison, the use of models, the use quantitative data, and social microscopy.

2. **Martha Howell and Walter Prevenier. 2001. "Introduction." In *From Reliable Sources: An Introduction to Historical Methods*, pp. 1-16, Cornell University Press.**

This chapter serves as the introduction part of this book, in which the authors talked briefly about the history of the development of historical methods, as well as the shift of the focus in history research. This chapter will provide a broad picture of how historical research method evolved to current status.

Section Two: Exemplary Studies

3. **S. J. Kleinberg. 2005. "Children's and mothers' wage labor in three eastern U.S. cities, 1880-1920." *Social Science History*, 29(1), 45-75.**

This article was the most viewed article in *Social Science History* which is one of the leading journals in the field of quantitative history, and it represents the breath and style of this field. In this study, the researcher explores the variations in children's and mothers' labor in three very different settings: Pittsburgh, Fall River, and Baltimore between 1880 and 1920. It finds that child labor and education legislation resulted in a decrease in children's employment and increased the likelihood that mothers would take paid jobs.

4. **Valery R. Yow. 2005. "Introduction to the In-Depth Interview." In: *Recording Oral History*, pp 1-34, Altamira Press.**

This is the second edition of one of the most consulted sources for scholars who want to conduct researches using oral history. The chapter highlights the importance of using non written sources, in this case oral recounts of events for writing history, mainly from sectors of the society that were oppressed or that did not form part of the dominant groups in different periods of time, such as women, indigenous populations, cultural minority groups, LGBT communities, among other. The chapter also presents a description of the principal characteristics of the methods that could be used in oral history, focusing mainly on the in-depth interview a qualitative method. The chapter provides a discussion about the advantages of using this method, its limitations and how to deal with them. At the same time, it offers examples of case studies and a nearly ten pages recommended readings for those who want to get more involved with this method.

Discussion questions:

What do you think are the main differences in the interpretation of written records in opposition to oral recounts? Would you consider the fragility of memory to be the main problem with oral history or can interpretation also be an issue? Would you be willing to use this methodology in your own research, why or why not?

5. **Dipesh Chakrabarty. 2003. "Subaltern Studies and Postcolonial Historiography." In Gerald Delanty and Engin F. Isin eds. *Handbook of Historical Sociology*, pp. 191-204. Sage Publications.**

This reading discusses the emergence of subaltern and postcolonial historiography and approaches to doing this kind of historiography.

6. **Ranajit Guha. 1997. "Chandra's Death." In Ranajit Guha ed. *A Subaltern Studies Reader 1986-1995*, pp. 34-60. University of Minnesota Press.**

This chapter sets an example of how can we write subaltern history. Guha examines a nineteenth-century crime report in India about a low-caste woman who died while aborting pregnancy, and analyzes nineteenth century Indian kinship, patriarchy and caste identity from the report.

Week 7. February 17. History II (World History). Carlos Lopez, Rongqian Ma

Prelude: Defining "World"...

Martin Lewis and Karen Wigen, 1997. "Chapter 5 & 6" in *Myth of Continents: A Critique of Metageography*. University of California Press.

We cannot be more familiar with the word "world", but what does that mean? Written by a cultural geographer and a social historian, this book argues that the "world"--the continents, oceans, nationstates and areas have no inherent and fixed boundaries, but can always be reshaped and reorganized. The excerpted two chapters trace the changing conceptions of geography and world regions in history and elaborate how geography influenced the historical analysis.

1. Introduction: What is world history?

Patrick Manning, 2003. "Chapters 1-6, 15-16, 23" in *Navigating World History: Historians Create a Global Past*. Palgrave MacMillan.

i. Part 1: The Evolution of World History

1. Chapter 1: Defining World History

- a. In the first chapter of the text, Manning provides a definition of World History and the scope of the field, arguing that as a discipline, it expanded "internally" as historians expanded their analyses from nations to regions to the globe, and "externally" as other disciplines began to think in more historical terms and developed new methods. Manning discusses how history fulfills different needs in society--what "need" does World History satisfy that previous traditions could not?

2. Chapter 2: Historical Philosophy

- a. Here, Manning discusses the intellectual precursor to world history, "historical philosophy," arguing that while previous thinkers had considered the entirety of human history in previous approaches and had similar ambitions of looking for broad patterns in human history as modern World Historians, they were limited by a paucity of data and thus had to rely on theory to guide them. In particular, he examines the impact of

the discovery of the Americas on Renaissance historians, the popularization of “Universal History,” Vico’s New Science, Herder’s “national genius”, and Hegel’s “idealism” as markers of this ambition to broaden the scope of historical analysis. He then explores the role of Comte’s positivism, Marx’s Materialism, and the rise of nationalist histories in shaping how history was created and taught. He concludes by discussing non-European historical traditions and the utility of understanding previous historical philosophies prior to studying World History.

3. Grand Synthesis: 1900-1965
4. Themes and Analyses: 1965-1990
5. Organizing a Field Since 1990
6. Narrating World History

ii. **Chapter 15: Scale in History: Time and Space**

1. Here, Manning draws parallels between natural scientists’ and historians’ need to choose a range of scale for their studies. He also argues that different disciplines construct specific “units / bricks” as models of study to deal with the problem of complexity (e.g. atoms, cells, etc). In addition to framing problems of world history along the dimensions of time and space, what other dimensions can world historians frame problems in?

2. Methodologies, Models, and Theories

a. Diego Olstein, 2014. “Chapters 2, 3, 4” in *Thinking History Globally*.

The Chapter 2 in Olstein’s newly published book introduces the 12 branches of world history: their origins and developments in the history as well as their relations with each other--what are their distinctive concern and features, and how do they overlap with each other in comprehensive historical analysis, etc. Chapter 3 and 4 introduce the two major methods to think about history globally. By elaborating and exemplifying the differences and distinctive concerns of “comparing” and “connecting”, Olstein evaluates the two methods within their historical developments, and raises a way to combine the “comparison” and “connection”.

b. Immanuel Wallestein, 1974. “Chapters 5-6” in *The Modern World-System*. Academic Press.

c. Onno Boonstra, “Barriers Between Historical GIS and Historical Scholarship.” *International Journal of Humanities and Arts Computing* 3 (1-2). 2009. 3-7.

This article discusses the role of geographical methods in historical science and the barriers that prevent historians from incorporating GIS into their analyses. He puts the role of GIS within the context of other methodologies (cliometrics, historical information science, geography, etc) and is skeptical of what it can bring to historians. Does this change your perception of the claims made by Manning and Holstein about the role of “borrowing” methodologies for the purposes of World History?

d. (Optional) J.B. Owens. 2007. “What Historians Want from GIS.”

<http://www.esri.com/news/arcnews/summer07articles/what-historians-want.html>

Starts off with a personal account of the author’s difficulty synthesizing complex, dynamic data and what different approaches can do. In light of the previous article, what would you be worried about when interpreting “visualizations” provided by historians, geographers, sociologists, etc.?

3. Case Studies

a. Peter Hopkirk (2006). "Chapter 1" in *Foreign Devils on the Silk Road: The Search for the Lost Cities and treasures of Chines Central Asia*. The University of Massachusetts Press.

The Silk Road was once important to bridge the "world", especially the west-east communications. Following the prologue that introduces the general background and the major theme in this book; the first chapter "The Rise and Fall of the Silk Road" briefly portrays a history of the silk road as well as the transitions of trades, art, and religion around it. By looking at the numerous archaeologists, monks and merchants traveling through this special route, we will get a sense of the brave explorations of the world in that "pre-modern" times.

b. John Arbeth, 2011. "Chapter 1: Plague" in *Plagues in World History*. Rowan & Littlefield Publishers, Inc.

In his monograph on infamous human pandemics, Arbeth looks at plagues across time and the effects they had on the communities that they affected. In his first chapter on the bubonic plague, he combines many different methods used in world and comparative history in order to establish how human society in general reacted to catastrophic incidents such as these. In presenting his case, what methods, models, and theories did you notice that he drew upon? How would you characterize the scope (in time and place) of his analysis? Are there any other historiographical "dimensions" that he explored in order to characterize the effects of these "events"?

c. Ken Pomeranz and Bin Wong, 2014. *China and Europe 1500-2000 and Beyond: What is "Modern"?* Columbia University. <http://afe.easia.columbia.edu/chinawh/web/s1/index.html>

How can we do "comparative history"? This website, co-authored by historians Ken Pomeranz and Bin Wong, provides an example of re-evaluating comparable units and . Contextualizing China and Europe from 1500 to 2000 in terms of "modernity", Pomeranz and Wong explain how the comparative criteria would change the historical analyses.

d. (Optional) Timothy Brook, 2008. "Chapters 2 and 4" in *Vermeer's Hat: the Seventeenth Century and the Dawn of the Global World*. Bloomsbury Press.

What can we see from a painting? Apparently in these two chapters, a historian sees the potential changes for the "world". Focusing on two paintings by Vermeer, *Officer and Laughing Girl* and *The Geographer*, Brook provides his perspective and thinking for the global development in the seventeenth century. Written in a literary and accessible style, these two chapters will take you on an interesting journey back to the world four centuries ago.

Week 8. February 24. Systems Theory. Bennett Sherry, Jose A. Fernandez, Weiyan Xiong
I Part: Introduction to General Systems Theory: Philosophy, Methods and Concepts

1) Ludwig Von Bertalanffy, *General System Theory: Foundations, Development, Applications* (George Braziller New York, 1968), 30-53.

- Ludwig von Bertalanffy is known as one of the founders of General Systems Theory. In the chapter "The Meanings of a General Systems Theory," he brings forth some of the main questions in modern sciences such as the general conceptions of wholeness, dynamic interactions and organization in scientific phenomenon. According to Bertalanffy, modern sciences share parallelisms of general cognitive principles which are organized and explained in

terms of interactions and relations. In his arguments, Bertalanffy aims to a General Systems Theory.

2) Ervin Laszlo, *Introduction to Systems Philosophy: Toward a New Paradigm of Contemporary Thought*. (New York: Harper Torchbooks, 1972), 15-32

- In these two chapters (Chapter 2: Method; and Chapter 3: Specifications), Laszlo shows the methodology, basic principles, categories, and philosophical problems behind General Systems Theory. Many of the concepts presented by the author can be seen in some of the case studies that we are reading for this session. Therefore, we should pay attention to some of Laszlo's arguments regarding the way in which Systems Theory builds models.

3) Ervin Laszlo, *The Relevance of General Systems Theory; Papers Presented to Ludwig Von Bertalanffy on His Seventieth Birthday* (New York: George Braziller, 1972), 3-11

- In this introduction to a set of essays honoring the late Ludwig Von Bertalanffy and his formative contributions to General Systems Theory (GST), Ervin Laszlo lays out the "disciplinary matrix" of GST – the collection of four practices and assumptions that systems theorists adhere to and which defines their "unity through diversity." Laszlo concludes with some thoughts on how the scope of GST "cuts across" the boundaries of traditional disciplinary limits, cultural-ideological barriers, quantitative-qualitative gaps, and pure vs. humanistic science distinctions.

4) Darrel Arnold, ed. *Routledge Studies in Library and Information Science : Traditions of Systems Theory : Major Figures and Contemporary Developments*(Florence, KY, USA: Routledge, 2013)

- This 2014 collection of essays provides a retrospective of twentieth-century developments in systems theory thinking and methodology. The collection attempts to grapple with diverse methodological traditions loosely grouped together by a shared focus on the features of systems.
 - a) **Darrel Arnold, "Systems Theory: A Secret History of the Twentieth Century," *ibid.*, 10-20**
 - ✓ Chapter 1 provides a look back at the main developments in systems theory, particularly general systems theory and cybernetics. This chapter argues that the history of systems theory is a secret history in that its major successes rest in the unacknowledged influence of systems theory on other fields. Despite the general assumption that systems theory was left behind after its propagation in the 1970s, it has had an important impact on other fields.
 - b) **Ranulph Glanville, "Cybernetics: Thinking Through the Technology," *ibid.*, 46-74**
 - ✓ Chapter 3, offers an introduction to one of the most prominent projects related to systems theory: cybernetics. Cybernetics does not have a universally accepted definition, but it is generally concerned with the communications and control systems in mechanical, organic, and social processes. Chapter 3 continues the debate, started by Von Bertalanffy, regarding the place of cybernetics in relation to the philosophy of general systems theory.

II Part: Application of Systems Theory

5) John H. Miller and Scott E. Page, *Complex Adaptive Systems : An Introduction to Computational Models of Social Life*(Princeton, NJ, USA: Princeton University Press, 2007), 3-31

- One of the most recent developments in systems theory, complex adaptive systems are complex macro-level collections of micro-level structures, which are able to adapt to changing environmental factors. Examples include: stock markets, ant colonies, and the human brain. The

introduction (reading #5a on courseweb) provides an overview of the field's development and influences. Chapter 2 (reading #5b on courseweb) lays out the fundamentals of complexity in systems as it relates to the social world.

- 6) **Melanie Boerries, Roland Eils, and Hauke Busch, "Systems Biology," in *Current Topics from the Encyclopedia of Molecular Cell Biology and Molecular Medicine : Systems Biology*, ed. Robert Meyers(Somerset, NJ, USA: John Wiley & Sons, 2012), 3-31**
 - In this article, the authors provide a comprehensive introduction of the application of systems thinking in biology, from distinguishing the biological systems to introducing current systems biology modeling, finally they give their perspectives on the future development of systems biology. This article is a good example of the application of systems theory in nature science

- 7) **Florian Cramer, "On Literature and Systems Theory," (2001). Lecture Note. Retrieved from: http://cramer.pleintekst.nl/all/literature_and_systems_theory/literature_and_system_theory.pdf**
 - This small article discusses the application of systems theory on literature. Even though it is short, I find it good to be an introductory piece for the further thinking on the relationship between systems theory and humanities.

- 8) **W. L. Goldfrank, "Systems Historicized: Wallerstein's World-Systems Analysis," in *Routledge Studies in Library and Information Science: Traditions of Systems Theory : Major Figures and Contemporary Developments*, ed. Darrell Arnold(Florence, KY, USA: Routledge, 2013), 242-52**
 - This chapter discusses Wallerstein's World-Systems Analysis from four aspects: genealogy, structured totalities, processual dynamics, and crises and transformation. When reading this article, we hope you can think about a question that what is or is not systems theory.

Week 9. March 3. Genetics. José Fernández, Jacob Pomerantz, Carlos Lopez

Introduction to Genetics

1. H. Sturtevant, *A History of Genetics* (New York: Cold Spring Harbor Laboratory Press, 2001), 1-16, 39-44

This book covers the History of Genetics from Aristotle to Mendel and post-Mendel thinkers. In the selected pages, the author narrates some of the methodological steps followed by the different thinkers, such as observation, description, and interpretation of a phenomenon. These pages, outline from Aristotle's first ideas on inheritance, to Darwin's pangenesis, to the concept of Linkage. From this first reading, we should pay close attention to how throughout history, some of the main thinkers have addressed their questions and how they have approached to hypothesis following a set of methodological stages.

2. Eberhard Passarge, *Color Atlas of Genetics* (New York; Stuttgart: Thieme, 2007), 1-14

This is an excerpt from an introductory textbook aimed at new students of biology and medicine. The introduction gives a thorough explanation of genetics as the science that deals with heredity and variation in organisms. Throughout the first pages, Passarge defines key terms and introduces the major concepts and themes that reappear in genetics, such as genes, DNA, RNA, and chromosomes, which are necessary to understand in order to approach to more complex analysis of the field. Furthermore, he provides a chronology of the major intellectual advances that led to the current state of the field. He discusses how Darwin's theory of evolution, Mendel's mathematical analysis of heritability, the

discovery of the gene, and the elucidation of DNA's structure all coalesced to create the paradigm under which geneticists operate today. As important as the concepts are, we should pay attention on how the development of a new experimental method has influenced the field and the diversification of genetics into various sub-fields.

3. James F. Crow, *Genetics Notes: An Introduction to Genetics* (Minneapolis, Minnesota: Burgess Publishing Company, 1983), 1-10

The reading focuses on the Mendelian Inheritance laws. It explains this experimental process, the main hypothesis and how Mendel came to his conclusions regarding inheritance. The reading offers a small section where it explains how to use Punnett Square as a system to diagramming all possible genotypes' combinations. Some methodological approaches such as dominance and environmental influence in the expression of a gene are discussed in this section.

This short reading was chosen to have a close look to Mendelian inheritance laws focusing not only on the concepts, but also in the experimental process and the formulation of hypotheses. For the moment we get to this reading, we must have developed a general knowledge of the history of the field, some of its main questions and how those questions were addressed in the early stages of the discipline.

4. George H. Shull, "Mendelian or Non-Mendelian?," *Science* 54, no. 1393 (1921): 213-16

This short reading from 1921 tries to establish some of the main differences between the Mendelian and non-Mendelian inheritance. From this reading, we should take some insights of Mendelian inheritance as patterns that involve genes that directly influence an organism's traits, while non-Mendelian laws describe that the traits are linked to single genes on chromosomes. This reading should be taken as a brief introduction to different approaches to the genetics, and how these differences are going to create a set of subfields, theories and methodologies.

Ethics and Genetics

5. Vani Kilakkathi, "New Born Screening in America: Problems and Policies" *Council for Responsible Genetics*, (2012) 1-43.

This article presents a useful case study for understanding one of the key ethical issues surrounding genetics. Written and published by the public interest group, Council for Responsible Genetics (CRG), this article examines consent and privacy issues raised by the screening, storage and use of genetic samples drawn from newborn bloodspots (NBS). It provides an overview of NBS screening in the United States, compares costs/benefits of storage and use of genetic samples, problems of parental consent, and discusses possible policy solutions.

6. UNESCO, "The Universal Declaration on the Human Genome and Human Rights: from theory to practice", (2000) 1-14.

This declaration from UNESCO outlines the basic principles and values of UNESCO in relation to the ethical issues raised by the study of the human genome. This declaration introduces us to the broad concerns over the practice and application of genetic research from the perspective of an international academic governing body. It succinctly articulates many of the concerns associated with the development of this field. Provides a basic outline for the practice of genetic research and the rights of individuals and groups. Also includes a guideline for implementing the Declaration.

Epigenetics

7. Virginia Hughes, "Epigenetics: The sins of the father." *Nature*, 2014. Mar 6; 507(7490):22-24.

Available online at :

<http://www.nature.com/pitt.idm.oclc.org/news/epigenetics-the-sins-of-the-father-1.14816>

This article written by science journalist Virginia Hughes for *Nature* summarizes some of advances in epigenetic studies that have led to Lamarckian evolution coming back in vogue in the scientific community. Though research in plants had long shown that transgenerational inheritance could be influenced by the environment, geneticists are now interested in seeing whether the same is true in mammals. The article briefly reviews some of the working hypotheses that are being investigated as well as some of the difficulties in establishing how methylation and epigenetics ultimately determine phenotype. The takeaway from this article is to see how this challenged the traditional conception that genetic information “flowed” in one direction, from gene to trait.

8. Edith Hearth, Robert Martienssen, “Transgenerational Epigenetic Inheritance: Myths and Mechanisms.” *Cell*, 2014 Mar 27; 157(1): 95-109.

This review paper (written after Hughes’ article) discusses some experimental evidence mentioned in the Hughes’ article more in depth. In particular, it chronicles how advances in plant epigenetics helped reinvigorate the debate of mammalian epigenetics. Though both domains of life undergo methylation procedures, mammalian cells undergo a “scrubbing” process to undo this, essentially removing methylation in the daughter cells’ gene for the next generation; some mice studies have called the totality of demethylation into question, as environmental exposures in mice have led to observable traits in their grandchildren. The authors summarize the possible evolutionary advantage of allowing this mechanism to exist, since it allows organisms to respond to a dynamic environment. In particular, notice the role that teleology plays forming novel explanations from new observations, as well as resistance on the writers’ part using it. In biology, what are the potential advantages and pitfalls of relying on teleology to guide investigation?

Nature or Nurture? Quantifying Heritability vs Environmentability

9. Tenessa A, Haley CS. “The heritability of human disease: estimation, uses and abuses.” *Nat Rev Genet*, 2013 Feb;14(2):139-49.

This review from *Nature Genetics* is aimed at helping researchers with a background in biology and statistics get acquainted with the mathematical and experimental tools used to determine heritability. It points out some of the erroneous interpretations that have been made in the past as a way for future researchers to be more wary when designing their study and interpreting their data. The authors describe how a disease is categorized, what heritability is (as opposed to liability), and what factors can affect what is observed. Note that heritability is a measure of the *population* phenotype variance attributable to genetic factors and not a measure of how much genetics influence an individual’s phenotype. The statistical methods described can get very complicated and we won’t go into them in depth, but as you are reading the paper, try to identify the assumptions for each approach: for instance, twin studies assume that environmental variance is the same between MZ and DZ twins, which might not be the case.

The next reading on intelligence applies many of these methods and re-introduces them, so don’t feel the need to dwell too much on this reading. The takeaway from this paper is to illustrate how environmental effects can make establishing (let alone interpreting) heritability an intrinsically difficult problem, even with “perfect” genetic information provided by genomic data and pedigrees that behave “ideally” according to Mendel’s laws. The paper concludes with how geneticists reconcile this with their duty to communicate epidemiological recommendations to the public.

Note: This site does a good job of describing heritability and providing some applets that you can play around with in order to see how different factors affect heritability. It might be helpful to have it open while you go through the review paper since the paper is otherwise very technical.

<http://psych.colorado.edu/~carey/hgss/hgssapplets/heritability/heritability.intro.html>

10. Peter McGuffin, “The quantitative and molecular genetics of human intelligence,” from *The Nature of Intelligence: Novartis Foundation Symposium 233*. Volume 233. Edited by Gregory R Bock, Jamie A. Goode, and Kate Webb.

In this symposium, attendees attempted to determine what research in animal and human studies showed about the possible link between intelligence, behavior, and genetics. Earlier chapters in this text discuss the caveats of measuring general intelligence *g* via traditional psychometric IQ testing, what we know about intelligence in animals, and teleological difficulties in explaining why intelligence isn’t more widely selected among different species besides humans (e.g. could the genes that promote intelligence be maladaptive except in certain circumstances?)

This chapter shows how the mathematical techniques discussed in Tennesa and Haley’s review of describing heritability can be applied to help explore the “nature vs nurture” debate regarding the development of intelligence. This reading serves as an illustrative example of the approaches taken to determine the inheritance of a highly complex non-disease trait, and points out some examples where even extremely high degrees of correlation can misguide the search for genetic influence. The discussion section ends with a Q&A between various symposium attendees and the speaker. Note the use of metaphor (“intelligence as a recipe”), the different opinions regarding the validity of twin studies, the exploration of confounding variables, and the (brief) discussion regarding the sociological implications of their research.

Week 10. March 18. Spring Break

Week 11. March 17. Political Science. Aura Jirau Arroyo, Ognjen Kojanic, Alejandra Sejas Portillo

Introduction

1.1. History of the Discipline

Grigsby, Ellen. 2011. "History of the Discipline." In *21st Century Political Science: A Reference Handbook*, John Ishiyama & Marijke Breuning, eds. Thousand Oaks, CA: SAGE. Pp. 3-11.

Grigsby explores the history of Political Science in this piece through a study of the main theoretical currents that have defined the discipline throughout time: traditionalism, behaviorism and post-behaviorism. She explains how they evolved through time as criticisms or modifications of each other. Moreover, she provides case studies to exemplify the methodological implications of each current in practice. While reading this article, think about the political influences inside your field and the other disciplines we’ve explored. Which theoretical current is most present? How does it affect the development of other social sciences that use political approaches? Does the development of theoretical thought in Political Science go on the same line as other fields’?

1.2. Qualitative and Quantitative Methods

Fearon, James and David Laitin. 2008. “Integrating Qualitative and Quantitative Methods”. In *The Oxford Handbook of Political Methodology*, Janet Box-Steffensmeier & Henry Brandy, eds. New York, NY: Oxford University Press. Pp. 756-776.

In this article the authors propose the use of qualitative and quantitative methods in political science investigations. They propose an integrative approach referred to as “random narratives”, and an applied example of its use in the analysis of civil war onsets using data from different countries. The authors explain the five steps proposed in order to study the factors and mechanism that influenced the occurring of a civil war, and the process that lead to the random selection of Algeria as the case study. This approach begun with the analysis of quantitative statistical data from which common factors related to the causes of civil war onset were detected, then the arguments that motivated a more in-depth study of a randomly selected case study, and finally the interpretative advantages of the use of this approach. Do you agree with the idea that choosing a random case study is the best way to avoid subjectivity biases? Can you think of any other problems in the random selection of a case study? Do you think that this methodological approach can be used in investigation of other disciplines?

Methods

2.1. Longitudinal Analysis

Nordyke, Shane. 2011. "Longitudinal Analysis." In *21st Century Political Science: A Reference Handbook*, John Ishiyama & Marijke Breuning, eds. Thousand Oaks, CA: SAGE. Pp. 497-506.

Nordyke describes longitudinal data, offers an overview of methods for its analysis and its historical development, discusses pros and cons of using longitudinal data, and gives an account of the statistical programs that can be used for it. When reading this chapter, try thinking about research design that is required for the longitudinal analysis. Nordyke is focusing on quantitative analysis, but can we think of designing qualitative research that would use longitudinal data? Nordyke discusses how longitudinal analysis can complement cross-sectional research. Can you think of other ways longitudinal analysis can complement different types of data? Is longitudinal analysis different from historical analysis?

2.1.1. Longitudinal Analysis (Optional)

Gallego, Aina, Franz Buscha, Patrick Sturgis and Daniel Oberski. 2014. "Places and Preferences: A Longitudinal Analysis of Self-Selection and Contextual Effects." *British Journal of Political Science*, No. 10. Pp. 1-22.

This optional reading deals with the influence of the place of residence on political beliefs and vote choices. It employs an 18-year long longitudinal study of 17,373 individuals (out of which number 4,100 individuals responded in all 18 waves). When reading this article, pay attention to the way the authors go about responding to the theoretical problem set forth in the beginning of the article. Is longitudinal data a good way of answering those questions? The authors discuss the limitations of their findings. Are there more limitations of such a study?

2.2. Game Theory

Woo, Byungwon. 2011. "Game Theory." In *21st Century Political Science: A Reference Handbook*, John Ishiyama & Marijke Breuning, eds. Thousand Oaks, CA: SAGE. Pp. 541-551.

This reading offers an introduction to Game Theory, offering an overview of this modeling method, its concepts, variations and examples for its applications within Political Science. While reading this chapter, give thought on the character of Game Theory within Political Science. Is it a quantitative or a qualitative method? What are the benefits of using a modeling method in this field? What relationship do modeling methods have to methods of testing? What types of data are necessary for the applications of Game Theory in the Social Sciences? Moreover, how could this abstract method be used to handle political discussions in everyday life?

2.2.1. Game Theory (Optional)

Munck, Gerardo. 2001. "Game Theory and Comparative Politics: New Perspectives and Old Concerns." *World Politics*, Vol. 53, No. 2. Pp. 173-204.

This article seeks to deconstruct and problematize Game Theory within the framework of Comparative Politics. The author's views toward it are mixed: he sees strengths and shortcomings in each area of Game Theory. Moreover, he stresses the fact that Game Theory is unable to provide full explanations of actions and that its scope is not as broad as one thought. While reading this piece think about the relationship between methodology and theory. Is it similar to the relationship we've seen in other fields discussed in Seminar? Which is more convenient: a purist or a pragmatic perspective on this method? How about regarding others? What is the advantage of model building inside Political Science? Any disadvantages?

2.3. Experimental Method

McDermott, Rose. 2002. "Experimental Methods in Political Science." *Annual Review of Political Science*, Vol. 5, No. 1. Pp. 31-63.

The experimental method in political science refers mainly to the study of cause and effect, examining the relationship between two or more variables. In this article the author explains the basic concepts of an experiment, the backgrounds of the methods and discusses its application to political science. This author also discusses the advantages and disadvantages of using this method, derived from biological field of study. What are the strengths of this method? Do you think this method can be used to study the complexity of the social world? What are some of the key issues regarding ethical concerns?

2.3.1 Experimental Method (Optional)

Fowler, James and Cindy Kam. 2007. "Beyond the Self: Social Identity, Altruism, and Political Participation. *The Journal of Politics*, Vol. 69, No. 3. Pp. 813-872.

This article analyses human behavior related to choices people make when voting for politicians. They seek to understand the relationship between social identity, altruism and political participation using a methods based on experimentation. The conclusion of this article remain controversial, especially regarding the idea of an altruist behavior motivating the participation of people in political process, rather than self-interest. In the same way, it shows a closer relationship between social identity and group solidarity. Do you think that the experiments carried out in this study are strong enough to support the conclusions about altruist behavior among voters? Do you think that the dictator game can be used to predict human behavior quarterly? What are some of the aspects of this experiment that were more relevant for you?

Concepts

3. The Concept of Democracy

Collier, David and Steven Levitsky. 1997. "Democracy with Adjectives: Conceptual Innovation in Comparative Research." *World Politics*, Vol. 49, No. 3. Pp. 430-451.

The authors argue that in the face of regime change from authoritarian to democratic regimes, political scientists pursue two opposite strategies: analytic differentiation (creating more concepts to capture the observed realities) and conceptual validity (keeping the concepts "pure"). Other strategies involve creating diminished subtypes, adding attributes to democracy or changing the overarching concept to lower or raise the standard for democracy. Where do political scientists search for inspiration when formulating definitions and creating concepts? While reading this article, try to think about the practical role of political science in the international relations of the US, especially in the aftermath of the Cold War. What kind of criticism can we formulate from that perspective?

Case Study

4. The Arab Spring

Ismael, Jacqueline and Shereen Ismael. 2013. "The Arab Spring and the Uncivil State." *Arab Studies Quarterly*, Vol. 35, No. 3. Pp. 229-240.

The article describes the Arab Spring* as a revolt against the uncivil state that is an outcome of the colonial order in the region. The authors interpret the uprisings as voicing discontent with the present political systems in the Arab World and a wish to achieve democracy and civil rights. What the authors offer to support their claims? When reading about this case, think about the possibilities for empirical research that the methodological toolkit of political science has to offer.

* If you want to acquaint yourself with the complex regional developments referred to as the Arab Spring, this website might offer a lot of valuable information

<http://www.theguardian.com/world/interactive/2011/mar/22/middle-east-protest-interactive-timeline>

Week 13. March 24. Economics. Matt Drwenski, Ognjen Kojanic, Amar Bahadur B K **Section 1: Introductory Readings**

Wunder, Timothy A. 2010. Economic Methodology. In *21st Century Economics: A Reference Handbook*, Rhona C. Free, ed. Thousand Oaks, CA: Sage Publications. Pp. 23-33.

This article has been assigned to give a brief introduction to economic theories and approaches and to the historical roots of the emergence of those theories and approaches. There are three major theories in economics, namely classical economics, neo-classical economics, and monetarism. I will pose two questions about methodology. (1) Deduction seems to be a main approach to doing economics, more particularly, to these three theories. Why the discipline of economics may have given emphasis on deduction? (2) The article seems to treat both theory and methodology as if they are same thing. Are theory and methodology different thing or same thing? What is relationship between theory and methodology?

Sen, Amartya. 2004. Economic Methodology: Heterogeneity and Relevance. *Social Research*, Vol. 71, no. 3: 583-614.

The aim for assigning this article is to get familiar with how certain concepts and approaches such as verifiability and testing, counterfactuals, value-free judgement, and prediction have been used in economics, and to understand whether they have been used differently in economics than in other disciplines. Sen's objective in the article is to identify issues and challenges facing by the discipline of the economics with regards to its methodology, but understanding how these concepts and approaches has been used in economics can be useful. So, you may want to ignore the issues and challenges of the approaches, and to just give attention on how the concepts have been used. My questions will be: (1) Is the meaning of "value judgement" is different in economics from other disciplines? (2) How is the concept of "determination" (in page 588 2nd para) different from "causal relationship"? (3) Is the role of mathematical analysis (quantitative?) withering in economics?

Orientation

After beginning our selections on Economics, we suggest that you orient yourself to some of the basic concepts in the discipline that are used in these papers. Important terms to familiarize yourself with include: *market, Pareto optimality/efficiency, equilibrium, returns, economies of scale, increasing/diminishing returns to scale, supply and demand, aggregate supply and demand, firms,*

externality, pecuniary externality, utility, consumption, elasticity, fixed and marginal costs, perfect competition.

Below are three links that we found useful for review when we needed help clarifying a term in its context within the discipline. We suggest you look up or watch a short video for any of the above terms that you are unfamiliar with.

- Khan Academy Economics Course: <https://www.khanacademy.org/economics-finance-domain/microeconomics>

- The Economist's glossary: <http://www.economist.com/economics-a-to-z/>

- A Microeconomics Textbook:
<http://site.ebrary.com/lib/pitt/reader.action?ppg=43&docID=10160618&tm=1426714189499>

Section 2: Important Challenges

Gigerenzer, Gerd and Reinhard Selten. 2001. Rethinking Rationality. In *Bounded Rationality: The Adaptive Toolbox*, Gerd Gigerenzer and Reinhard Selten, eds. Cambridge, MA: MIT Press. Pp. 1-12.

Gigerenzer and Selten present the idea that bounded rationality can be viewed as adaptive toolbox of heuristics that help actors deal with complex situations in simple and efficient ways without computing all the information. They build on the metaphor of bounded rationality as a pair of scissors where one blade presents the cognitive limitations of humans and the other blade the structure of the environment. When reading this article, think about the challenge that bounded rationality presents to the idea of the rational choice of agents that has been central to mainstream economics. How can this model, which takes into account imperfect knowledge, culture, and emotions, advance research on economic problems? Although interdisciplinary in its scope, the argument set forth in this article has found its application in the recent trends in behavioral economics for understanding the behavior of human agents. Can it be applied to other economic problems?

Ostrom, Elinor. 2007. Challenges and growth: the development of the interdisciplinary field of institutional analysis. *Journal of Institutional Economics*, Vol. 3, no. 03: 239 – 264.

Ostrom discusses the outcomes of the interdisciplinary dialogue between economics and political science, as well as other social sciences and biology. This dialogue is described as potlatch in which gifts are exchanged between disciplines and appropriated in new disciplinary contexts. Ostrom discusses four approaches that have been fruitful: the public choice, the tragedy of the commons, the new institutional economics, and behavioral game theory. Crucial contributions to the economic theory made by institutional economics were to expand the range of economic institutions that economists were discussing (by including polycentric political systems and common-property institutions), revising the underlying microeconomic assumptions (maximizing, non-cooperative), paying more attention to understudied aspects of economic behavior (transactions instead of production). In the end of the article, Ostrom discusses puzzles that are still unresolved by institutional analysis. Can you identify more issues that might benefit from viewing them from the perspective of institutional analysis? Ostrom was awarded a Nobel Prize for her work on the governance of common resources which challenged dominant microeconomic ideas (famously embodied in the Science article by Hardin titled “The Tragedy of the Commons”). Those microeconomic ideas continue to shape economic theories, research, and policy recommendations. Why did the ideas of institutional economics remain relatively marginal for the practice of economics?

Section 3: A Case Study

Krugman, Paul. 1991. **Urban Concentration: The Role of Increasing Returns and Transport Goods.** *Journal of Political Economy*, Vol. 99, no. 3: 483-499. [Link to pdf.](#)

We selected this article, by Nobel prize-winning economist and prominent blogger Paul Krugman, because it is a newer article that address a classic economic problem, trade among countries. This paper builds on the idea of “New Trade Theory” laid out in several influential papers a decade earlier. If you are interested in the overall trajectory of Krugman’s work within the discipline, from [David Ricardo](#) to [his most recent work](#), we direct to his Nobel Prize [Lecture](#) and [video](#) (we would highly recommend the section on his “rules of research” around minute 14). We found it useful, as we read this article, to keep running notes that list the definitions of the different variables on hand, and refer back to the links in Section 1 of this summary when you encounter an unknown term. If you are having difficulty with this article, I suggest watching the Krugman’s video (linked above) or review the second chapter of King’s *Designing Social Inquiry* and then re-reading.

Krugman attempts to answer why manufacturing becomes concentrated in some regions while others become undeveloped. There are obvious parallels that connect this article to our discussion of the role of space in World History and our discussion on formal modelling in Political Science last week as well as a small opportunity for intersection with our class on Systems Theory. Krugman argues that the role of economies of scale and the cost of transportation, illustrated by the differing examples of agricultural and manufacturing, create production-specialized regions.

The author lays out his thinking in an informal narrative but completes the argument using a formal model. Do we find one or another approach more convincing? In what way does this author’s understanding of concepts used by other disciplines (core-periphery, equilibrium, space, forward and backward feedback/circularity) differ from earlier works we have read?

Alternate Case Studies

If you find our mere hundred pages too few, then here are too supplemental case studies. These readings are completely optional, but will give you more ammunition for our discussion. We also recommend anyone who is writing their paper on Political Science or History might find benefit in models presented here.

George A. Akerlof, “The Market for “Lemons”: Quality Uncertainty and the Market Mechanism,” *The Quarterly Journal of Economics*, Vol. 84, No. 3. (1970), pp. 488-500.

George Akerlof presents a model that accounts for “dishonesty” and asymmetric information through a rationalist paradigm. Do his conclusions have implications for Genetics and or Political Science?

Thomas Piketty, *Capital in the Twenty-First Century* (Harvard University Press, 2014).

Thomas Piketty lays out a general law of economic growth and inequality (his “iron law of capitalism”) in this chapter, supported by historical evidence. How does his use of data and approach differ than those laid out in the other case studies?

Note: all the readings can also be found at this [link](#).

Week 13. March 31. Information Science. Jacob Pomerantz, Alex Mountain, Bennett Sherry
Section 1: Information Science Orienteering

(2 Articles) in Chen, Chuanfu, and Ronald Larsen (eds.). *Library and Information Sciences: Trends and Research* (Springer Open, 2014).

The collection from which the first two articles were selected was initiated by the Wuhan University's School of Information Management in China. One of its co-editors is Ronald Larsen, a dean and professor at Pitt's own iSchool, and Daqing He, also from Pitt, is an associate editor. Authors from the U.S. and China are represented in the collection.

- **Wright, Alease J. "So What's the Big Deal With Information Literacy in the United States?"**
 - We chose this article to provide a background on the general relevance of information sciences in the public sphere of the twenty first century. Feel free to skim this for a brief discussion of the trends information education in the last 35 years. Alease Wright discusses the changes in the fields of library and information sciences since the 1980s. With the advent of the world wide web humans have an unprecedented ease of access to vast quantities of information. The problem is, the ability to access a lot of information does not indicate an ability to select the correct information. The author address the importance of training students in "information literacy" to better prepare them to contribute to the workforce. She pays special attention to the influence this has had on the role of libraries. Some questions to consider: (1) Does information literacy mean different things in different disciplines? (2) How have the disciplines we discussed this semester been changed by the shifts that Wright discusses? (3) After reading this article, how do you think the role of librarians will change in the next 35 years?
- **Liddy, Elizabeth D. "iSchools & the iSchool at Syracuse University"**
 - The purpose of this article is to introduce us to the academic organization of Information Sciences. Liddy provides an overview of the "iSchool movement." She write generally about the growth of the iSchool "caucus" and discusses the organization of the Syracuse University iSchool. As you read, think about how the organization of iSchools (both internally and their inter-school relations) differs from that of your own disciplinary organizations.

Webber, Sheila. "Information Science in 2003: A Critique," *Journal of Information Science*, 29 (4) 2003, pp. 311-330.

With this article, we wanted to provide a more general overview of the discipline of Information Science. Of the three "orienting" articles we selected, please read this one the most carefully. Webber provides a critical overview of Information Science as a discipline in general and within the United Kingdom in particular. Thinking in relation to the Liddy article's discussion of the iSchool movement, consider Webber's assertion that IS is an "international discipline." Do you agree? Is it more so than other disciplines? Further questions: (1) Do you think of Information Sciences as its own discipline? (2) Webber identifies the issue of including "science" in information science. We have encountered other disciplines that adopt science either in name or, ostensibly, in method. Does IS "deserve" the title? (3) Do you agree with Webber's definition of what makes a discipline a discipline? What about her typology of disciplines (pg. 316).

Section 2: Information Architecture

As the field of information science is, like so many others we have studied this semester, rather overwhelming and vast, we have decided to focus upon the sub-field of information architecture in order to highlight the practical methodology of the discipline.

5 chapters in Peter Morville and Louis Rosenfeld, *Information Architecture for the World Wide Web*, (Cambridge: O'Reilly, 2005).

Chapter 1: Defining Information Architecture (3-15)

This chapter serves as a crucial introduction to the field of Information Architecture in relation to the Internet. These chapters are highly readable and the authors approach their topic with concision, clarity, and good humor. The authors provide basic definitions for the field of Information Architecture as well as key terms and concepts. This chapter also includes a brief history of information science comparing the systems of organization from books and libraries to web sites. This also starts the discussion of what is and is not an information architect and information architecture including the grayer areas bordering the field, such as graphic design. Morville and Rosenfeld are interested in the roles of information architects as professionals. When reading the chapters from this book, keep in mind the institutional differences that might arise from working in sectors outside of academia. How might these institutional differences effect a field or discipline?

Chapter 2: Practicing Information Architecture (16-29)

Chapter two begins from the premise that information architecture occurs naturally with or without information architects. This starts a more detailed discussion of who's qualified to be an information architect and what role they play in various professional sectors. Information architects can come from a multiplicity of intellectual backgrounds. Information architects can be further specialized along industry lines, functional department, type of system or software, and audience. The chapter ends with a discussion of context, content, and users of information architecture. From this chapter we get a sense of what are the professional activities of a information architect.

Chapter 3: User Needs and Behaviours (30-38)

Chapter three focuses on the variable information needs of users and how information architecture is a product, in certain ways, of the individual's information-seeking behavior. The authors argue that information architecture should be consciously designed to respond to the various information-seeking behaviors generally outlined. They outline various models used to understand information-seeking behavior. The chapter ends with a brief word on how information architects go about learning users information-seeking behaviors. This chapter begins a discussion about the relationship between information architect and information-consumer.

Chapter 4: The Anatomy of an Information Architecture

This chapter represents a shift away from the conceptual perspective of the previous chapters. Instead, chapter four focuses upon the tangible and concrete reality of information architecture. The chapter aims to give readers the tools to recognize and visualize information architecture. It also introduces the concept of top-down information architecture, where information architects have worked hard to determine the most common questions, and have thus designed the site to meet these needs. Finally, this chapter provides an outline of four key information architecture components: organization systems, labeling systems, navigation systems, and searching systems.

Chapter 5: Organization Systems

This chapter is perhaps the most technical of the readings we assigned, but make an effort to engage with the concepts. The authors write in a very accessible manner. Pay particular attention to the section on database structures. As the title would suggest, the authors here provide an introduction to methods of organizing information. We have all encountered a horribly designed website. With this in mind, the authors begin with the difficulties faced in any organizational system. They then provide a

typology of organization schemes and the grey areas in between. Their introduction to organization structure/hierarchy provides an easy-to-understand introduction to database modeling that will feature in our class discussion. Some questions to consider: (1) How are organization schemes distinct from organization structures? (2) The authors mention that “our classification systems inherently reflect social and political perspectives and objectives.” Can you relate this to any of our past disciplinary discussions? What does the classification system of the disciplines say about academia? (3) Can you think of ways that you create organization schemes and structures in your own work or daily life? What about the five paragraph essay?

Section 3: Case Studies in Information Architecture

L. Andrew Coward and Nikos A. Salingaros, “The information architecture of cities” *Journal of Information Science*, 30 (2) 2004, 107-118.

Coward and Salingaros is a particularly interesting case study that views cities as information architecture systems drawing connections between urban structures and information networks. The authors recognize that city structures facilitate and optimize the exchange of information. In order to do so, cities evolve heuristically. This article on city structure connects the study of information architecture to system theories by examining the interactive and adaptive dynamics of urban nodal points. While the authors focus on discussing cities as information networks and systems, could we connect this discussion of urban information flow and system adaptability to Krugman’s case study on economic geography?

Jung-Chi Pai and Gwo-Guang Lee, “Towards a strategic information architecture (SIA) and its initial application” *Journal of Information Science*, 31 (2) 2005, 149-160.

Pai and Lee succinctly outline the urgency for strategic information architecture, arguing that current information architectures focus upon information systems and information technology perspectives, but largely do not consider information management. Current information architectures also have a tendency to ignore cross-department, cross-organization and customer reach functions that are necessary in an e-commerce context. Their study proposes a strategic information architecture, where information systems, information technology and information management are integrated. It looks at the results of the implementation of a strategic information architecture in a large hospital in Taiwan.

Week 13. April 7. Cross-disciplinary communication

Discussion of disciplinary interaction

Week 14. April 14. Presentations 1

Amar B K – Textual analysis

Matt Drwenski – Systems

José Fernandes-Montes – Cultural Studies

Aura Jirau Arroyo – Theology

Ognjen Kojanic – Marxian economics

Carlos Lopez – Health literacy

Rongqian Ma – History and literature as practiced in the 1980s

Week 15. April 21. Presentations 2

Alex Mountain – Information Science

Jacob Pomerantz – Public Health
Aisling Quigley – Methods of aesthetic judgment
Alejandra Sejas Portillo – Ethnohistory and oral tradition
Bennett Sherry – Relational datasets, social networks
Weiyang Xiong – History, narrative and quantitative