George Mason University
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate:  ___X__ NEW    ____ MODIFY    ____ DELETE

Local Unit:  Center for Social Complexity  Graduate Council Approval Date:

Course Abbreviation:  CSS  Course Number: 620

Full Course Title: Origins of Social Complexity

Abbreviated Course Title (24 characters max.): ORIGINS SOC COMPLEXITY

Credit hours:  3  Program of Record: Computational Social Science

Repeatable for Credit?  
D=Yes, not within same term  Up to hours
T=Yes, within the same term  Up to  hours
X=Cannot be repeated for credit

Activity Code (please indicate):  ___X_ Lecture (LEC)  ___ Lab (LAB)  ___ Recitation (RCT)
___ Studio (STU)  ___ Internship (INT)  ___ Independent Study (IND)

Catalog Credit Format  3 : 3 : 0  Course Level:  GF(500-600)  ___X__ GA(700+)

Maximum Enrollment:  20  For NEW courses, first term to be offered: Spring 2004
Prerequisites or corequisites:  CSS 600 or permission of instructor

Catalog Description (35 words or less) Please use catalog format and attach a copy of the syllabus for new courses: Examines when, where, and how social complexity first emerged in human societies, with emphasis on long-term analysis and four civilizations of the ancient world: West Asia, East Asia, Andean Peru, and Mesoamerica.

For MODIFIED or DELETED courses as appropriate:
Last term offered: Previous Course Abbreviation: Previous number:

Description of modification:

APPROVAL SIGNATURES:
Submitted by:  ________________________________ email:  __ccioffi@gmu.edu__
Claudio Cioffi-Revilla

Department/Program:  ________________________________ Date:  __________________
Center for Social Complexity/CSS

College Committee:  ________________________________ Date:  __________________

Graduate Council Representative:  ________________________________ Date:  __________________
Approval from other units:

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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<th>Unit:</th>
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Graduate Council approval: __________________________________________ Date: ____________

Graduate Council representative: __________________________ Date: ____________

Provost Office representative: __________________________ Date: ____________
CSS 620 Origins of Social Complexity

Description

“Examines when, where, and how social complexity first emerged in human societies, with an emphasis on long-term analysis and four civilizations of the ancient world: West Asia, East Asia, Andean Peru, and Mesoamerica.” —George Mason University Catalog

Learning objectives

The puzzle of social origins has interested every discipline in the social sciences to a greater or lesser extent: anthropology, economics, geography, history, linguistics, political science, psychology, and sociology. The main objectives of this course are two: to learn the fundamental concepts and principles of social complexity and to use these ideas to explore and understand the origins and long-term evolution of civilizations in terms of:

- When, where, and how did social complexity (the first civilizations) emerge?
- What is truly new in the contemporary world system?
- What is truly ancient?
- What has changed in global society?
- What, if anything, has remained unchanged since prehistory?

To achieve these primary substantive goals a long-term perspective is needed; a view that looks at the ancient origins of civilizations and compares the world system today with the way our global interactions network originated (or how we think it may have formed!) thousands of years ago. Which were the first states, and when, where, and how did they originate? Are their descendants still around today? How do complex social systems evolve? Which states (“actors in the world system”) fought the first wars? Or formed the first alliances? Or established the first trade networks? Is trade, diplomacy, or warfare today different in any way from similar patterns in antiquity? If so, in which non-trivial respects? Is “power” in the world system exercised in truly new ways today? Or is the exercise of power a universal pattern? These and other key puzzles of comparative analysis in social complexity will be examined, with a view towards understanding what is new, what is ancient, what has changed, and what has not in the world system from a long-term perspective.

A second set of goals is more methodological, as required by graduate-level instruction in this area: how does one develop and employ a long-term comparative framework of analysis to investigate complex social phenomena, such as the puzzle of social origins? Which are the main methods available to the social science of long-term change? How is evidence found and interpreted? How are valid inferences drawn on the basis of
incomplete evidence? How are multiple lines of evidence developed? How are data integrated with theory? What are some recent methodological developments across the various disciplines that investigate the origins of social complexity? Computationally, how did the “Society class” of historical “objects” originate and evolve through “inheritance,” in the object-oriented meaning of class, objects, and inheritance. How are chiefdoms, states, and empires modeled as subclasses of the Polity class?

Course organization

The course is organized in four parts. The first part introduces basic concepts, principles, and methods for studying the origins of social complexity from a social science perspective that is global, long-term, and comparative both across societies (synchronously) and across time (diachronically). The second part examines each area of pristine origins in detail, while maintaining the comparative framework. In the third part students will conduct specific task-oriented field visits to area museums for the purpose of identifying and interpreting extant evidence of origins of social complexity; a brief written report is assigned. Details on this task will be provided. The fourth part of the course is organized as a workshop with student presentations and discussions of individual research projects leading to the final research paper. Readings and course requirements are described in the next sections (Required readings and dates).

<table>
<thead>
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<th>Weekly meetings</th>
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| **Part One: Introductory cluster** | January 21
First meeting: reading assignments |
| | January 28
Introductory cluster: concepts, principles and methods |
| | February 4
Theories of the emergence of social complexity |
| **Part Two: Regions of origins of social complexity** | February 11
West Asian region: The Fertile Crescent |
| | February 18
East Asian region: China |
| | February 25
South American region: Peruvian Andes |
| | March 3
Mesoamerican region: Mexico and Central America |
| **Part Three: Museum field trips** | March 10
Paper abstract is due by e-mail
Museum field trip |
| | March 17
Museum field trip |
| **Part Four: Research workshop, presentations, and final research paper preparation** | March 24
Discussion of individual projects. Paper outlines due. |
| | March 31
Research paper-writing clinic |
April 7-14
Work-in-progress presentations

April 21-28
Final presentations

**Required readings and dates**

The following readings are required and consist of two groups: core readings for the initial part of the course (Part One), and readings that are more specific to each of the original or “pristine” regions of social complexity examined in this course (Part Two). These works should be read in the same order as listed.

**Introductory cluster (Part One of the course): Jan. 21, 28, and Feb. 4, 2004.**

This first cluster of readings in this course provides conceptual, theoretical, and methodological foundations for understanding social complexity, its origins, and long term evolution in the global system.

• The very first readings focus on the concept (definition) of social complexity (due Jan. 28). What does it mean for a society to evolve from a formative phase (chiefly), to a mature phase (state), to an imperial phase (empire), or to fail to do so? What are the defining or constituent features, in terms of social processes and institutions, that characterize each phase?

**(Simon 1996)** *The Sciences of the Artificial.* Pp. 1-24, Chapter 1. This classic coined the distinction between “natural” (e.g., physical and biological) systems and “artificial” (e.g., social or man-made) systems. Simon’s framework is important for understanding the nature of social complexity and how it may emerge and evolve.

**(Fernández-Armesto 2001)** *Civilizations.* Pp. 3-35, Introduction and Chapter 1. Other chapters are studied later (Part Two); all are recommended, not required. The main purpose of this reading is to understand Fernandez-Armesto’s concept of civilization, and compare it later with Simon’s notion of the artificial world. In subsequent weeks we will study region-specific chapters of this book, as they apply to the four areas.

**(Flenerry 1972)** (Flannery 1972) “The Cultural Evolution of Civilizations.” This social science classic explains origins and evolutionary forms of social complexity, based on systems theory. Compare with Simon’s and Fernandez-Armesto’s concepts of civilization and social complexity.

• The next readings outline the historical and empirical framework for studying the origins and long term evolution of social complexity (also due Jan 28). When, where and how did the first phases of social complexity (chiefdoms, states, empires) emerge in human history? Which methods are involved in making these empirical determinations? What are some of their limitations (for example, measurement error)?

**(Cioffi-Revilla 1996)** “Origins and Evolution of War and Politics.” This is a comprehensive survey that motivates the study of empirical (historical) origins of social complexity from a long term perspective and identifies the primary regions of West Asia, East Asia, South America, and Mesoamerica. Each of these is examined in greater detail in the next regional clusters.
(Cioffi-Revilla 2000a) “Ancient Warfare.” This chapter explains the main lines of evidence employed in long term social science research and applies the lines of evidence to investigate the specific origins of warfare, an important force that forged the emergence of social systems in early antiquity.

(Wilkinson 2000) “Civilizations, World Systems, and Hegemonies.” Provides another global perspective, less focused on the four pristine regions but valuable for providing a global context. Compare dates and phases with other chronological frameworks.

- The following readings propose theories—explanatory frameworks—for the emergence and evolution of social complexity (due Feb. 4).

(Carneiro 1970) “A Theory of the Origin of the State.” This is one of the classic theories on the origin of the state, based on the galvanizing effect of warfare and external security threats.

(Marcus 1998) “Peaks and Valleys of Ancient States.” Marcus explains a theory of origins of social complexity, focusing on the emergence of chiefdoms and states. The theory is applied to three of the four areas examined in the course, by way of overview.

(Read 2002) “A Multi-trajectory Competition Model of Emergent Complexity in Human Social Organization.” This paper takes a more in-depth view of the origin of social complexity, focusing on the role of kin groups and demographic dynamics.

(Axelrod 1997) “A Model of the Emergence of New Political Actors.” This was the first computational model (simulation) of a generative theory of political formation.

(Cioffi-Revilla 2002) “A Canonical Theory of Origins and Development of Political Complexity.” This model of the emergence of government integrates a set of alternative mechanisms for social aggregation with a substantial amount of indeterminacy and path-dependency.

**Origins clusters (Part Two of the course)**
The following are required readings for each of the four major regions examined in the course.

**West Asian region (Feb. 11)**
- (Stein and Rothman 1994) Selected papers by Henry Wright, Gil Stein.
- (Wright 1977) “Recent Research on the Origin of the State”

**East Asian region (Feb. 18)**
- (Loewe and Shaughnessy 1999). Chapters by K.-C. Chang, R. Bagley, and D. Keighley.
- (Liu 1996) “Settlement Patterns, Chiefdom Variability, and the Development of Early States in North China”
South American region (Feb. 25)
(Moseley 1992) The Incas and Their Ancestors.
(Fung Pineda 1988) Survey of 3500-800 B.C. Andean Peru.
(Berger 1998) “Unity and Heterogeneity Within the Chavin Horizon”

MesoAmerican region (March 3)
Fernandez-Armesto (2001, pp. 146-152 [Olmec], 158-162 [Maya], 237-246 [Aztec]).

Grading

The final grade will consist of the following four components:

1. Several brief take-home assignments (10%) early in the course to obtain an assessment of performance in Part I (Introduction) and Part II (Origins).

2. Museum field research report on origins of social complexity (40%). The purpose of the museum field visits is to learn how to draw valid inferences on social complexity based on archaeological material using multiple lines of evidence. Further instructions on this assignment will be given in preparation for this exercise.

3. Seminar presentations (10%) during Part IV (Research Workshop). Presentations will be evaluated for focus, clarity, information, argument, delivery, timing, and other common criteria for evaluating scholarly presentations. Use the RAND presentation guidelines (on reserve).

4. Research paper or web site (40%) for Part IV. The research paper is written in sections covering specific aspects of the research (motivation, method, findings, discussion, summary, and bibliography). Additional instructions and guidelines are discussed in class.

All assignments are expected on time. Delays will affect grades. Only medical emergencies or emergency events beyond one’s control constitute valid excuses.

References


CSS 620 Origins of Social Complexity

Justification for the proposed course

Course objectives: substantive and methodological

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Necessity for adding course

This course is needed for three reasons. First, this course is part of the core of graduate courses being developed to implement the Provost’s Initiative in Computational Social Science and Social Complexity. (Other extant courses already being taught include CSS 600 Introduction to Computational Social Science [since Spring 2003], and CSS 610 Computational Analysis of Social Complexity [since Fall 2003].) From an interdisciplinary
perspective, this course is to the field of CSS and Social Complexity as a course on the origins of the universe (cosmology) is to Astronomy, a course on prehistory is to History, a course on genetics is to Biology, or paleontology within Anthropology. In each case the focus is on the formation or first emergence of the subject matter of the field. In this case, the broader subject matter is social, as opposed to physical or biological, and therefore (as stated in the catalog description) the course is needed for students to learn “when, where, and how social complexity first emerged in human societies.” The computational perspective is implemented by emphasizing the emergence of complex social organization through information processing mechanisms and norms and institutions of social interaction and governance. This course is as necessary as courses on cosmology, prehistory, genetics, or paleontology are for Astronomy, History, Biology, or Anthropology, respectively.

Second, this course is also needed as a point of entry into Computational Social Science (where modeling the origins of civilization is one of the most important research frontiers) for students from across the social sciences: anthropology, economics, history, linguistics, political science, sociology. This is because the course covers material and contributions from each of these disciplines, within the context of origins of social complexity. At present, few social science graduate students are aware of the fact that the origins of civilization is an established and rapidly expanding focus of investigation in computational social science.

Third, this course offers students in the Computational Sciences (physical and biological) an opportunity to understand how social scientists (computational and not) investigate the puzzle of origins of social complexity from theoretical, empirical, and methodological perspectives. Cosmology and the origins of biological complexity are investigated through very different models and methods, but physical and biological scientists also have made some important contributions to interdisciplinary research that investigates the origins of social complexity. Examples include Nicholas Rashevsky, John Christiansen, Murray Gell-Man, and “our own” Harrold Morowitz (in this recent book *The Emergence of Everything*, Oxford University Press, 2002), among a significant number of physical and life scientists collaborating with social scientists in the investigation of origins of social complexity.

**Relationship to other courses in the Provost’s Initiative on Computational Social Science (CSS)**

This is a core course in the CSS curriculum. The pre-requisite course is CSS 600 Introduction to Computational Social Science, where students learn the foundations of CSS in terms of elementary concepts, principles, theories, models, methods, and main areas of research. In CSS 620 students learn how to apply a computational social science framework to understanding the origins of social complexity. While most other CSS courses focus on principles and methods, this course also covers a large amount of empirical material from the known prehistory and early history of human societies. This course is also designed as a requirement for the future Ph.D. program in Computational Social Science, which is in preparation. Inter alia, CSS 620 will inspire students to select topics on origins of social complexity for their dissertation research.

**Anticipated audience and enrollment**

This course is primarily for students interested in the Computational Social Science curriculum (Certificate in CSS and also the future Ph.D. degree program). However, some students are also expected to enroll as an elective in their respective degree program if they so chose (e.g., anthropology, history, economics, CSI). Enrollment should be limited to 20 students, given the importance of the seminar component (research workshop, presentations).
Resources necessary

Existing faculty resources are sufficient. Professor Claudio Cioffi-Revilla, Professor of Computational Science and Director, Center for Social Complexity, will teach this course. In addition, as a service course that should stand fairly independent of the instructor, in the future this course may also appeal to faculty members from other appropriate units (anthropology, sociology, history), with proper coordination with the CSS Provost’s Initiative.