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ANTY 553.01: Evolutionary Archaeology

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Anthropology 553: EVOLUTIONARY ARCHAELOGY

Anthropology 553, Evolutionary Archaeology is a graduate seminar designed to expose students to the fast-growing world of Darwinian evolutionary archaeology. The seminar will have two specific goals. First, students will gain a basic understanding of the major trends in current archaeological evolutionary thinking with a focus on cultural transmission theory, human behavioral ecology, and macroevolutionary approaches to archaeology. Second, students will gain experience in applying the tenets of Darwinian evolutionary theory to the development and analysis of archaeological data. Students will emerge from the course with enhanced abilities to link theoretical problems to strategies for collection and analysis of archaeological data within an evolutionary framework.

Professor: Dr. Anna M. Prentiss; Office: Social Sciences 205; Telephone: 243-6152; Message Telephone (Anthropology Department) 243-2693; email: anna.prentiss@umontana.edu; Office hours: Monday, Wednesday, Friday, 10-12, or by appointment.

Text Readings:

Richerson, Peter J. and Robert Boyd

Broughton, Jack and Michael D. Cannon

Hart, John P. and John Edward Terrell (optional)

Mesoudi, Alex

Prentiss, Anna Marie, Ian Kuijt, and James C. Chatters

Stark, Miriam T., Brenda J. Bowser, and Lee Horne

Learning Outcomes:

1. Knowledge of fundamental concepts and debates in evolutionary archaeology
2. Ability to develop and complete a research project in evolutionary archaeology.
3. Expansion of skills in data collection and analysis within an evolutionary framework.
4. Improvement in writing and speaking skills.

Grade Determination:

Seminar assignments are designed to develop student skills in reading and understanding the literature in Darwinian archaeology and designing and implementing research projects within this framework. Assignments are as follows:

1. Each student will develop a 5-10 page research plan or design for their seminar project (Assignment 2). This will include a discussion of the research problem, hypotheses to be tested, and proposed methods. This paper also provides you a chance to review and cite the literature relevant to your research problem. The paper should be approximately five pages in length and written using *American Antiquity* style. Due date for the paper: October 24. It is worth 100 points.

2. Each student is required to write a 20 page research paper (again using *American Antiquity* style). The research paper will present results of a study that will include an explicit analysis of archaeological data developed in an evolutionary framework (dual inheritance theory, selectionism, evolutionary ecology, macroevolutionary theory). The paper will include introduction to the problem, a discussion of theoretical background and previous research, methods, analysis, and final discussion. The goal is to stimulate each student to explore in depth one evolutionary model by developing it as a research tool for a context of your choice. The research paper is due December 8. It is worth 250 points.

Assignments must be well written with minimal grammatical problems, spelling issues, etc. If you have writing problems you should seriously consider visiting the university writing center for extra help. Assignments must demonstrate an attempt by you to obtain and cite the critical anthropological literature associated with your research topic. Assignments with minimal citation of the literature will be scored low (that is also what will happen to you in the “real world”).

3. All students will participate in seminar activities. Participation will include presentation of readings and research result. Participation is worth 50 points.

Grades will be determined on the basis of total points achieved:

<table>
<thead>
<tr>
<th>Assignments (see below)</th>
<th>350 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar Participation</td>
<td>50 Points</td>
</tr>
<tr>
<td>Total</td>
<td>400 Points</td>
</tr>
</tbody>
</table>

Students with 90% (360 points) or more will receive an "A," etc. Deadlines are extended only in cases of illness (with a doctor's note) or an emergency. The professor retains the option to use + and - grades when final scores are close (within a point on a 0-100 scale) to an up or down
transition.

Reading List and Schedule

(August 29) Introduction and Background

Reading:
Hart and Terrell
Mesoudi, Chapters 1 and 2

(September 5) Cultural Microevolution: Modeling Culture as an Inheritance System

Reading:
Richerson and Boyd, All chapters
Mesoudi, Chapter 3

(September 12) Cultural Transmission in Archaeology and Socio-Cultural Anthropology, Some Case Studies

Reading:
Stark et al., All chapters

(September 19) Microeconomics, Evolution, and Human Behavior: Introduction to Human Behavioral Ecology; Plio-Pleistocene Adaptations; Post-Glacial Adaptations

Reading:
Broughton and Cannon, Chapters 1-15

(September 26) Archaeological Case Studies in Behavioral Ecology: Technological Organization; Food Production Strategies; Cooperation and Competition

Reading:
Broughton and Cannon, Chapters 15-25

(October 3) Cultural Macroevolution: Introduction and Artifact Centered Macroevolution

Mesoudi, Chapter 4

Prentiss, Anna Marie
2011 Introduction to this Special Issue on Evolution of Material Culture. Evolution:
Prentiss, Anna Marie, Randall R. Skelton, Niles Eldredge, and Colin P. Quinn

Tehrani, Jamshid

Dagg, Joachim L.

Goodale, Nathan, George T. Jones, and Charlotte Beck

O’Brien, Michael J., John Darwent, and R. Lee Lyman

O’Brien, Michael J., Matthew T. Boulanger, Briggs Buchanan, Mark Collard, R. Lee Lyman, John Darwent

Collard, Mark, Stephen J. Shennan, and Jamshid J. Tehrani

Jordan, Peter and Stephen Shennan

Lycett, Stephen

Larsen, Anna W.
(October 17) **Cultural Macroevolution: Complex Cultural Packages**

**Reading:**

Mesoudi, Chapters 4 and 5  
Prentiss et al. (Chapters 1, 4-11)

Mace, Ruth and Clare J. Holden  

Tehrani, Jamshid J.  

Prentiss, Anna Marie, James C. Chatters, Matthew J. Walsh, and Randall R. Skelton  

Coward, Fiona, Stephen Shennan, Sue Colledge, James Conolly, and Mark Collard  

(October 24) **First Assignment Presentations and Discussions**

(October 31) **Darwinian Study of Social Relationships**

**Reading:**

Mesoudi, Chapters 8-10

Hawkes, Kristen  

Wiessner, Polly  

Bird, R.B. and E.A. Smith  

McGuir, K.R. and W.R. Hildebrandt

Bowles, Samuel

Boone, James L.

Henrich, Joseph and Francisco J. Gil-White

Roscoe, Paul

Mulder, Monique Borgerhoff et al. (25 co-authors)

Prentiss, Anna Marie, Thomas A. Foer, Guy Cross, Lucille E. Harris, and Michael Wanzenried

(November 7) Student Research Presentations
(November 14) Student Research Presentations
(November 21) Student research Presentations
(November 28) Holiday
(December 5) Student Research Presentations
(December 8) Research Papers Due (5:00 PM)
(December 12) Open Office Hours (If professor is in town)
Key Terms to research (see Hart and Terrell page xv for a longer list):

adaptation
analogous
homologous
character
clad
clade
culture
cultural virus
cultural trait
descent
drift
Darwinian population
essentialism
evolutionary individual
extrasomatic
exaptation
ecological hierarchy
genealogical hierarchy
genotype
fitness, inclusive fitness
individualism
interactor
meme
model
pathway
phenotype
reductionism
selection (natural, artificial, cultural, stabilizing, group)
“selfish” gene, meme
species
stasis
structural design (Bauplan)
trend (driven, passive)
transmission