

Humankind Evolving: Science, Scenario, Story and Myth
(draft 10/05)
Spring 2006; Thursday 6:8:50 Triad Center
Dr. Mary K. Sandford

OVERVIEW. What does it really mean to be human? Can you offer a simple definition of humankind based upon a single characteristic? How – and when – did our species arrive at that place in time? These are questions that many disciplines have addressed across the sciences and the humanities. In this course, we lead with scientific approaches to these questions, grounding ourselves, first, in evolutionary theory and satisfying ourselves in the fact of biological change over time. We will study the fossil record, focusing on the evolution of such taxonomic groups as the vertebrates, mammals, primates and, finally, the hominids (or hominines), or members of our own taxonomic family. We will pay special attention to the beginnings of those characteristics that many consider the most fundamental in our evolution as “human,” including bipedal locomotion, encephalization (increase in relative brain size and complexity), culture, tool use, and language. Then, taking a humanistic approach, we will also consider the potential ways in which the scientific study of human evolution – and our evolution as a species – have been informed or deterred by other ways of knowing, including scenarios (or reconstructions), narrative (or personal story), and myth (religious/philosophical traditions). Specific areas that we will explore include 1) how do our cultural beliefs influence the kinds of evolutionary scenarios that paleoanthropologists envision, 2) what are some ways that personal story or narrative can benefit the process of “doing” science, learning science, or engaging others in scientific endeavors, 3) how can reflective writing aid us in the process of learning about human evolution, 4) how should society approach conflicts between worldviews and ideology involving science, religious and political institutions, and, 5) when we contemplate the future evolution of our species, are there ways in which we can – or should – try to integrate or balance alternative ways of knowing?

STUDENT LEARNING GOALS

At the conclusion of this class you should be able to

1. Discuss the processes through which species change over time, including natural selection.
2. Describe scientific methodology, particularly as it relates to studies of human evolution and distinguish science from pseudoscience approaches as well as other ways of knowing about natural phenomena
3. Describe the major stages of human evolution by referring to key paleontological sites, fossils, events and artifacts.
4. Discuss key paleoanthropologists and their contributions to our understanding of human evolution, referring to both scholarly critique and public perception of their work.

5. Describe the roles of personal narrative and reflective writing in promoting learning about evolution, and in helping scientists and students gain a better understanding of how we know what we know.
6. Compare and contrast scenarios and myths as they relate to human origins.

TEXTS. We will use a basic text pertaining to human biological evolution, Roger Lewin and Robert Foley, *Principles of Human Evolution* (2003), 2nd Edition, supplemented with a CD, Hominid Fossils: An Interactive Atlas. We will also use a new text on science and creationism *Evolution vs Creationism: An Introduction* (2005) by Eugenie Scott, to help ground us in scientific approaches to the study of evolution and make us aware of the techniques used by pseudoscientists and ideologues. We also will be learning the ways that a reflective component can further our development as students of science – and as human beings. Story can help us learn how we “know” what we “know” and it can help us retain new concepts as we are learning.. And we will be considering how narrative genres can shed light on scientists and their contributions, thus helping us frame anthropological and sociological questions about the study of evolution and human origins. To guide us – and motivate us – in our use of a reflective component, we will be using *Storycatcher: Making Sense of Our Lives Through the Power and Practice of Story* by Christina Baldwin to aid us in cultivating the ability to learn reflectively and to help us consider humanistic and sociological questions about evolution. A variety of other readings, including original articles pertaining to the discoveries of specific fossils, will be available through e-reserves and the class Blackboard site.

ASSIGNMENTS

You will keep a portfolio for this class. At the end of the term you should have the following in your portfolio:

- 1) Paper #1: A paper, 12-14 pages (double spaced) based upon a key individual, topic, site or event pertaining to human evolution. The primary focus of this assignment is upon scientific information pertaining to the subject of your information, and should include primary, scientific sources relating to the topic. Where available, I encourage you to reference other genres (autobiography, memoir, narrative nonfiction) that have been used to explain or provide insight about the subject. Has material from other genres been successful in providing a greater understanding of your subject? Why or why not? Lists of possible topics are attached; you may choose your own topic, but all topics must be cleared with me.
- 2) Paper #2: A paper, 6-8 pages (doubled spaced) based on a mythological or pseudoscientific approach to human origins. What specific facets of human origins are being addressed by the sources you are consulting? What is the cultural context of this material? Do you consider the material to run counter to or be complimentary of science?
- 3) Reflective Writing Exercises: A minimum of ten reflective writing exercises. I will provide some prompts for these based upon the topics that we are exploring in class and the questions posed by Baldwin at the conclusion of each chapter in

Storycatcher. Reflective writing can be quite variable in length. I expect at least a single, double-spaced page for each one.

- 4) Information writing assignments: These will include exercises that we conduct in class using fossil casts or skeletal materials. They will also include brief reaction papers to films or questions posed at the beginning or end of class. These are written in class, usually on your own paper.

GRADES

Participation in class (measured through attendance, online discussions, class discussions and informal writing assignments/class exercises): 50 points

Paper #1 = 100 points

Paper #2 = 100 points

Reflective Writing: 50 points

COURSE OUTLINE

WEEK OF	Topic	Assignment/Reading
1/12	Introductions/Telling our own stories Class Objectives/Assignments Basic definitions: Science, Scenario, Story and Myth	Lewin: Part I-II Baldwin Chapter 1
1/19	Science, Evolution, Natural Selection: Historical and Cultural Perspectives Paleoanthropology: introduced	Complete: Lewin Part 1 Scott first 1/3 Baldwin Chapters 1-5
1/26	Science, Pseudoscience, Scenario, Story, Myth; The Politics of Science Modern Evolutionary Theory; Evolution and Earth Science	Scott second 1/3 Complete Baldwin's book
2/2	Complete Out of Class Assignment: Work to develop 1-2 ideas for each paper topic with references	Complete Scott's book
2/9	Methods in Paleoanthropology	Lewin: Part II
2/16	Vertebrates, Mammals, Nonhuman Primates and Evolution	Lewin Part III
2/23	Hominine Origins Bipedalism	Lewin Part IV
3/2	Hominine Adaptations Early Tool Use	Lewin Part V
3/9	Adaptations and early Hominies Early Tool Use	Lewin V
3/16	Homo erectus: Out of Africa 1 Cultural Evolution and Dependence Brain Expansion	Lewin VI
3/23	Origins of Modern Humans	Lewin VII

	Neanderthals Draft of Papers 1 (optional)	
3/30	Origins of Modern Humans Modern Homo sapiens	Lewin VIII
4/6	The Human Milieu Language, Art, Brain, Intelligence Draft of Paper 2 (optional)	Lewin VIII
4/13	New Worlds/New Technologies/The first villages	Lewin IX
4/20	Discussions of Class Portfolios	
4/27	Discussion of Class Portfolios	