Fall 9-1-2001

ANTH 583.01: Theory and Concepts in Physical Anthropology

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THEORY & CONCEPTS IN PHYSICAL ANTHROPOLOGY

ANTHROPOLOGY 583

MW 3:40-5:00 in SS 238

Dr. Randy Skelton
225 Social Sciences Building
Office Hours: MWF 1:10-2:00, Phone: 243-4245

Goals and Purpose

This class will explore current methods, theories, and areas of research in Physical Anthropology. We will take a look at all 4 main branches of Biological Anthro (Human Variation, Paleoanthropology, Primatology, and Forensic/Osteological Anthropology), plus a few topics that don't fit into traditional categories.

Format

The format will be a non-traditional seminar. I will lead the first 3 sessions, the last session, and one or two other sessions in between. For the rest of the sessions one of you students will present the material and facilitate the discussion.

Grading and Requirements:

I. Readings. This class requires an enormous amount of reading. There are 7 sources of readings. Readings should be done before class.
   Any introductory physical anthropology text. If you don't have one, I've asked the bookstore to order several copies of Nelson, Jurmain, and Kilgore, 1992, Essentials of Physical Anthropology.

II. Participation. 20% of your grade will depend on participation. Barring excused absence, you should attend each class meeting. Each time you attend you will receive credit toward your grade. Each time you actively and intelligently participate in class discussion you will receive more credit toward your grade.
III. Presentations. You each must lead at least two class sessions by giving a presentation on that day's material. Each presentation will be worth 20% of your final grade, for a total of 40%. You will be graded on preparation, organization, and knowledge of the subject. For each presentation I have listed some additional readings that you should incorporate into your presentation. You can get these readings from me. The best presentations will go beyond the assigned readings and incorporate additional information and resources not listed. Plan your presentation to take up about 60 of the 80 minutes in each class period. You should present the material in such a way as to stimulate discussion. Plan to cover the "questions for discussion" but don't feel that you have to be bound by them.

IV. Syllabus. Design a syllabus for a course titled "Introduction to Physical (or Biological) Anthropology". The syllabus should include a course description, required texts, grading standards, lecture schedule, and reading schedule. Assume a 3 credit course held during the current semester, with all holidays that occur in the current semester. The course may meet MWF or TR - your choice. The syllabus will represent 20% of your final grade. Check the presentation and reading schedule on the following pages for the due date of the syllabus.

V. Term Paper. Write a term paper on the topic of your presentation or some other topic in Physical Anthropology. The final 20% of your grade in the course will be from your term paper. Your paper will be graded on mechanics (spelling, grammar, format, citations, etc.), effort and thoroughness, creativity and independent thought, accuracy, and professionalism. The term paper is due on the last day of class. **Grading Scale:** A = 100-90%, B = 90-80%, C = 80-60%, D = 60-50%, F = 50-0%.
### LECTURE & READING SCHEDULE

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<tr>
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<td>W</td>
<td>1. <em>Introduction to the course</em>. (Randy presents)</td>
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**QUESTIONS FOR DISCUSSION:** What are some of the concepts that unite anthropology as a whole. What are some concepts that unite physical anthropology. What does Skelton mean by "adaptation". What are some models for how populations change (biologically, culturally, linguistically, etc.).

| 9/10 | M   | 2. *The history of the physical anthropology*. (Randy presents) |

**READINGS FOR EVERYBODY:**
- Chapter in your 'Intro to Physical' text on the history of evolutionary thought.
- Tattersall: Chapters 1, 2, 7, 12

**QUESTIONS FOR DISCUSSION:** What are the origins of physical anthropology? When were the 4 fields of anthropology tied together? What was the main goal of physical anthro up to the 1950’s? Who are some historical figures in physical anthro? What is the "New Physical Anthro"? What are some historical turning points for physical anthropology.

| 9/12 | W   | 3. *The mechanisms of evolution*. (Randy presents) |

**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text on inheritance, genetics, and evolution.
- Angeloni, articles 1 & 2.

**QUESTIONS FOR DISCUSSION:** What are the mechanisms of evolution. How is the Hardy-Weinberg formula used? What allele frequency and genotype frequency patterns are produced by natural selection, mutation, migration/admixture, genetic drift, and non-random mating.


**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text on human variation and/or race.
- Shanklin text (Yep, the whole thing!)
- Angeloni, articles 33, 34, 35, 36.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What is a race and how is it different from a population or a species? What is the prevailing concept of race among modern physical anthropologists? Why do forensic anthropologists use a different concept of race than other physical anthropologists? How many races are there really? Do some "racial" traits have value in terms of natural selection?
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<tr>
<td>9/19</td>
<td>W</td>
<td>5. Genetics and disease.</td>
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**READINGS FOR EVERYBODY:**
- Chapter(s) in 'Intro to Physical' text about genetics, inheritance, and adaptation to diseases.
- Angeloni: articles 3, 4, 5.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What are some reasons why genetic diseases remain in modern human populations? How do genetic diseases get started and how do they evolve? What sorts of new diseases can we expect to encounter in the future? Is it likely that we will ever completely eliminate disease?

| 9/24 | M   | 6. The biological basis of human nature and behavior. |

**READINGS FOR EVERYBODY:**
- Diamond, Prolog, Part One.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What aspects of human behavior and nature have a biological component to them? Evaluate the assertion that "culture transcends biology and modifies its effects, but neither eliminates it nor renders it unimportant". How might behaviors that seem disadvantageous or antisocial in modern society have been advantageous in prehistoric times?

| 9/26 | W   | 7. What's sex got to do with it? |

**READINGS FOR EVERYBODY:**
- Diamond, Part Two.
- Angeloni: articles 6, 15, 16, 17, 18.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What effect do the differences in costs of reproduction between the sexes have on male and female mating strategies. What are some of the possible explanations for human sexual "curiosities" such as large penises, large breasts, and hidden ovulation? Why do men usually have to be "made" via some ritual, but women don't?
### 10/1

#### M 8. Evolution through the apes.

**READINGS FOR EVERYBODY:**
- Chapters in your 'Intro to Physical' text pertaining to primate evolution.
- Tattersall: Chapter 9.

**EXTRA READINGS FOR PRESENTER:**
- Skelton's lecture notes for 'Human Evolution' and/or 'Primatology' and/or 'Intro to Physical Anthropology', on the UM WWW server.

**QUESTIONS FOR DISCUSSION:**
What is the evolutionary tree (phylogeny) for the human lineage from the beginning of life on earth through the apes. What human adaptations are associated with being: a vertebrate, a mammal, an archontan, a primate, an anthropoid, and a catarrhine. What is the evolutionary tree (phylogeny) for the apes and people? What is the ape adaptation? What are the implications of chimpanzees being more closely related to humans than to gorillas?

### 10/3

#### W 9. Background to paleoanthropology.

**READINGS FOR EVERYBODY:**
- Angeloni: article 28, 42.
- Tattersall: Chapters 3, 4, 5.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:**
How does the "paleoanthropology" approach differ from other approaches to human evolution? What is the history of paleoanthropology? To what extent has there been "progress" in human evolution, and what value should we attach to it? What effect did the Piltdown hoax have on paleoanthropology?

### 10/8

#### M 10. The origin of hominids.

**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about human origins and the origin of bipedalism.
- Angeloni: Articles 21, 22.
- Tattersall: Chapter 6.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:**
In what ways are humans unique? Which of these are more matters of degree than matters of kind? What are some of the models proposed for the origin of human bipedalism? What are some of the models proposed to account for changes in the human dentition?
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<td>10/10</td>
<td>W</td>
<td>11. Australopithecines.</td>
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**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about australopithecines.
- Tattersall: Chapter 11.

**EXTRA READINGS FOR PRESENTER:**
- Skelton's notes for 'Human Evolution' and/or 'Intro to Physical Anthro', on the UM WWW server.

**QUESTIONS FOR DISCUSSION:**
What species of australopithecines existed? During what times and at what places did each of the species live? What are the differences between "gracile" and "robust" australopithecines? Which australopithecines were more primitive (chimp-like) and which were more derived (Homo-like)?


**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about early Homo or Homo habilis.
- Angeloni: Article 23.
- Tattersall: Chapters 8, 10, 17.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:**
In what ways does early Homo differ from australopithecines? Does there seem to be a correlation between the appearance of Homo and the appearance of stone tools? What can we infer from ape language studies? What are some of the evolutionary trees (phylogenies) that have been proposed to relate Homo with the australopithecines?


**READINGS FOR EVERYBODY:**
- Tattersall: Chapter 15, section on "Man the Hunter" on pp. 126-137.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:**
What are some models for what the way of life of early hominids? What is the man the hunter hypothesis? What is the food sharing hypothesis? What is Binford's critique of the food sharing hypothesis?

| 10/22 | M | 14. The feminist critique and the scavenging hypothesis. |

**READINGS FOR EVERYBODY:**
- Tattersall: Sections on the scavenging hypothesis, pp. 208-209, 236.

**EXTRA READINGS FOR PRESENTER:**
- Lewin, R., 1989, Hunter or Scavenger (Ch 20) in Human Evolution: An Illustrated Introduction.
### Questions for Discussion:

- What is the scavenging hypothesis for the way of life of early hominids? Why is this a feminist issue? How can the various views of early hominid lifeways be synthesized?

- What was Middle Homo like? What were archaic (transitional) H. sapiens like? What were Neanderthals like? What are the multiregional (Candelabra) model and the African origins (Noah's Ark) model? How do these models relate to polygeny and monogeny? Who was "African Eve"? Given recent critiques of the African Eve hypothesis, what can we now say about the origin of modern humans?

- What are the controversies surrounding the origin of language, art, symbolism, and religion? Are the differences between modern humans and Neanderthals likely to be a matter of kind or a matter of degree. To what extent is it likely that Neanderthals had culture?

### Readings for Everybody:

- **15. Middle Homo through Neanderthals.**
  - Chapter(s) in your 'Intro to Physical' text about H. erectus, transitionals, Neanderthals, and moderns.
  - Angeloni: articles 25, 26, 29, 30.
  - Tattersall: Chapters 13, 14.

- **16. The origin of language, art, symbolism, and religion.**
  - Diamond, chapters 8 and 9 of Part Three.
  - Angeloni: article 27, 40.
  - Tattersall: Chapter 16.

### Extra Readings for Presenter:

- **Pp. 66-69 in Discover January, 1996.**

### Extra Readings for Presenter (cont.):


### Extra Readings for Presenter (cont.):

- **Diamond, Part Four.**
- **Angeloni: Articles 12, 13, 20, 31**
QUESTIONS FOR DISCUSSION: Does it seem that humans are naturally aggressive, conquerers and killers? What about the compromise argument that humans are naturally friendly to members of their group, but aggressive toward others. Why have European and Asian peoples been more successful in conquests than other peoples?


**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about Jane Goodall, Dian Fossey, Birute Galdikas, etc.
- Angeloni: articles 9, 10, 14.

**EXTRA READINGS FOR PRESENTER:**

QUESTIONS FOR DISCUSSION: What contributions have women made to the field of primatology? What sorts of behaviors did women find to be important that men were overlooking? What sorts of problems have women had in having their work accepted by their male colleagues? What do you think accounts for the observation that there are more women than men in primatology?


**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about primates and primate behavior.
- Angeloni: article 7.
- Smuts: Preface, Chapter 3.

**EXTRA READINGS FOR PRESENTER:**

QUESTIONS FOR DISCUSSION: What is the history of primate behavior studies? Why do we study non-human primates? What are the ethics of studying non-human primates in the lab and in the wild? What challenges exist in habituating a non-human primate group to a field researcher's presence? What are some of the hazards of life in the field?

11/12 | M | ***VETERANS' DAY HOLIDAY***

11/14 | W | 20. Chimps and Bonobos

**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text about chimpanzees and bonobos.
- Angeloni: articles 11, 19.
### EXTRA READINGS FOR PRESENTER:


### QUESTIONS FOR DISCUSSION:

1. In what ways are the behaviors of chimps and bonobos similar to those of humans? What is the basis for saying that chimps have "culture"? What are the advantages and disadvantages of using chimps and bonobos as models for the behavior of early hominids? What are the ethics of using chimpanzees in medical research?

### READINGS FOR EVERYBODY:

- Smuts: Chapters 2, 4, 5, 6.

### EXTRA READINGS FOR PRESENTER:


### QUESTIONS FOR DISCUSSION:

What part do dominance, aggression, and competition for mates play in the life of female baboons. How is the female baboon dominance hierarchy different from that of the males. What part do social skills play in the lives of male and female baboons.

### SYLLABUS IS DUE!!!!

### 11/19 M 21. The female baboon way of life

### 11/21 W ***THANKSGIVING HOLIDAY***

### 11/26 M 22. The male baboon way of life and a synthesis..

### READINGS FOR EVERYBODY:

- Angeloni: article 8.
- Smuts: Chapters 7, 8, 9, 10.

### EXTRA READINGS FOR PRESENTER:


### QUESTIONS FOR DISCUSSION:

What part do dominance, aggression, and competition for mates play in the life of male baboons? Why do male baboons move from one troop to another, and what is
involved in this process? What role does length of time spent in a troop play in dominance for male baboons? Can any of these observations be extended to male human life?


**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text on conservation of primates.
- Angeloni: article 38.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** How are humans and baboons in conflict over resources? Which non-human primates are threatened worldwide? What is the most common threat to wild populations of non-human primates?

12/3 | M | 24. Background to forensic anthropology.

**READINGS FOR EVERYBODY:**
- Chapter(s) in your 'Intro to Physical' text on forensic anthropology.
- Angeloni: article 37.
- Ubelaker & Scammell: Chapters 1, 2, 3, 4, 5.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What is forensic anthropology? How did forensic anthropology develop as a subfield of physical anthropology? What is forensic anthropology like today? What are some of the special concerns of forensic anthropology?

12/5 | W | 25. Techniques for determining the identity of the deceased.

**READINGS FOR EVERYBODY:**
- Angeloni: article 32.
- Ubelaker & Scammell: Chapters 6, 7.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** How are age, sex, race, height, and weight estimated from skeletal material? How reliable are these techniques? Police officers always want to know the deceased’s race, but given what you know about race how reliably can forensic anthropologists match the race categories that exist in the minds of police officers? Is making a positive identification of the deceased within the realm of expertise of an anthropologist?
### 12/10  M  26. The crime scene.

**READINGS FOR EVERYBODY:**
- Ubelaker & Scammell: Chapters 9 through 13

**EXTRA READINGS FOR PRESENTER:**
- Chapters 1, 2, and 6 in Morse, D., Duncan, J., and Stoutamire, J., 1983, Handbook of Forensic Archaeology and Anthropology.

**QUESTIONS FOR DISCUSSION:** What is a "crime scene"? What steps should be taken at a crime scene to preserve evidence. How do forensic body recovery techniques differ from archaeological excavation techniques? What steps does a forensic anthropologist need to take in the lab to make sure that all evidence is collected and documented? What processes (natural and cultural) affect the condition and preservation of human remains? How easy or difficult is it to estimate time since death?

### 12/12  W  27. Pathology and trauma.

**READINGS FOR EVERYBODY:**
- Ubelaker & Scammell: Chapters 14 through 25.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What is paleopathology, and how is it used? Which diseases may have been spread from the New World to the Old World, or vice versa, soon after Columbus. Is it normally within the area of expertise of an anthropologist to determine cause and manner of death?

### 12/19  W  28. The future of human evolution and Summary of Physical Anthropology (Randy presents)

Meet at the regular time and place: 3:40-5:00 in SS 238.

**READINGS FOR EVERYBODY:**
- Diamond, Part Five.
- Angeloni: Articles 39, 41.

**EXTRA READINGS FOR PRESENTER:**

**QUESTIONS FOR DISCUSSION:** What does the future hold for our species? What evolutionary mechanisms operate on populations in the 21st century. What recurring themes have we see throughout the semester? What does physical anthropology contribute to anthropology as a whole and to the study of other subfields?