

ANTHR 1: Introduction to Physical Anthropology

Lecture 1: Introduction and Chapter 1

Summary

1. Class red tape and introduction
2. Anthropology - An Overview
3. Physical Anthropology - A Survey
4. Physical Anthropology - A closer look
5. Science - How Anthro fits into the Sciences
6. The Anthropological Perspective
7. Course overview

1. Class red tape and introduction

*The syllabus - we're reading ALL of it

*Our book

Jurmain R, Kilgore L, & W Trevathan. 2013-14. *Essentials of Physical Anthropology*. (9th edition). Belmont, CA: Wadsworth/Thomson Learning.

*The website

<https://creasonanthro.wordpress.com/anthr-1-fall-lbcc/>

Me



2. Anthropology - A survey

Anthropology according to our book -

"The field of inquiry that studies human culture and evolutionary aspects of human biology; includes cultural anthropology, archaeology, linguistics, and physical, or biological anthropology" (5p).

*Four Subfields

1. Cultural Anthropology

2. Archaeology

3. Linguistics

4. Physical Anthropology



2. Anthropology - A survey - Cultural Anthropology

Subfield

1. Cultural Anthropology

Culture - The set of learned behaviors transmitted from generation to generation nongentially.

For the purposes of this course: the behavioral aspects of human adaptation. This includes technology, traditions, ritual, language, marriage patterns, and social roles.



2. Anthropology - A survey - Cultural Anthropology

Subfield

1. Cultural Anthropology

Focuses

Ethnographies - descriptive studies of human societies (economic, ecological, social patterns)

Cross-culture analysis - the accumulation of ethnographies allows cultural anthropologists to look at the similarities and differences among the different groups being studied

Help identify key human behaviors.



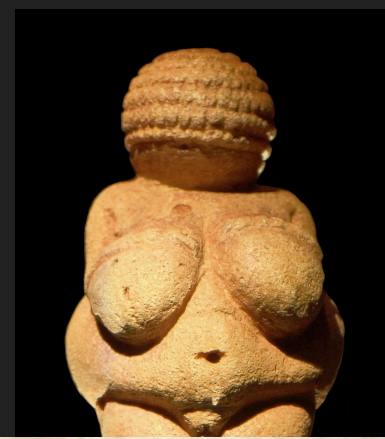
2. Anthropology - A survey - Archaeology

Subfield

2. Archaeology

Focuses

Material culture/artifacts - objects made or modified by hominins
-Examines past cultures through analyzing material culture



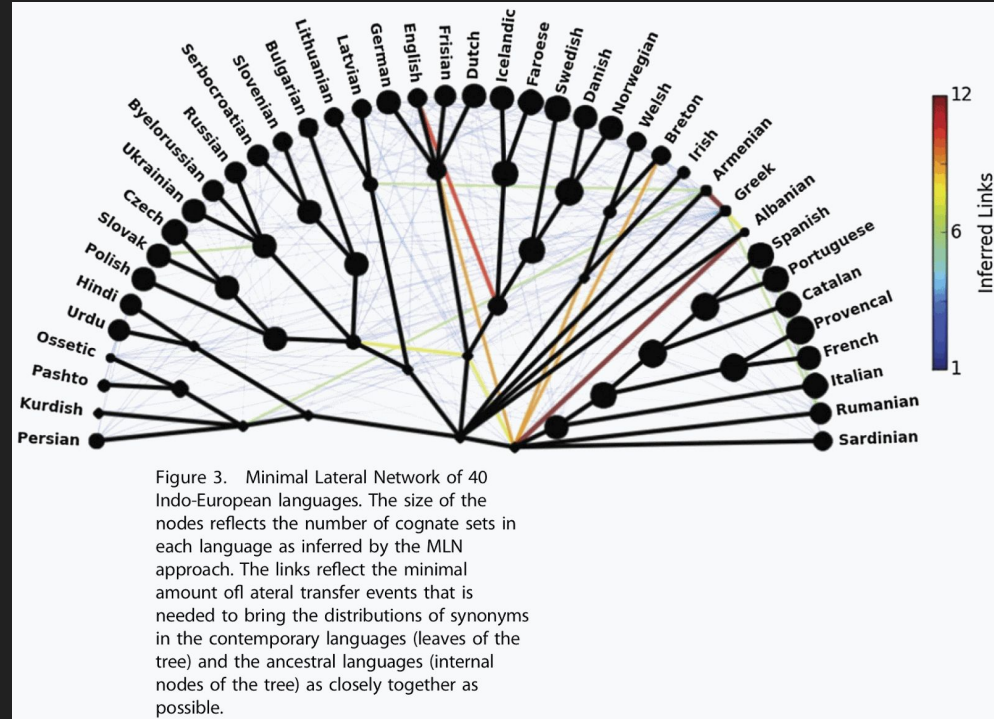
2. Anthropology - A survey - Linguistics

Subfield

3. Linguistics

Focuses

- Comparative analysis** of languages both within and outside various societies/social groups
- History and origins of language



3. Physical Anthropology - A Survey

-The study of human biology in an evolutionary context

Emphasize - genetics, nutrition,
development, ecology,
anatomical/morphological/physiological
adaptations

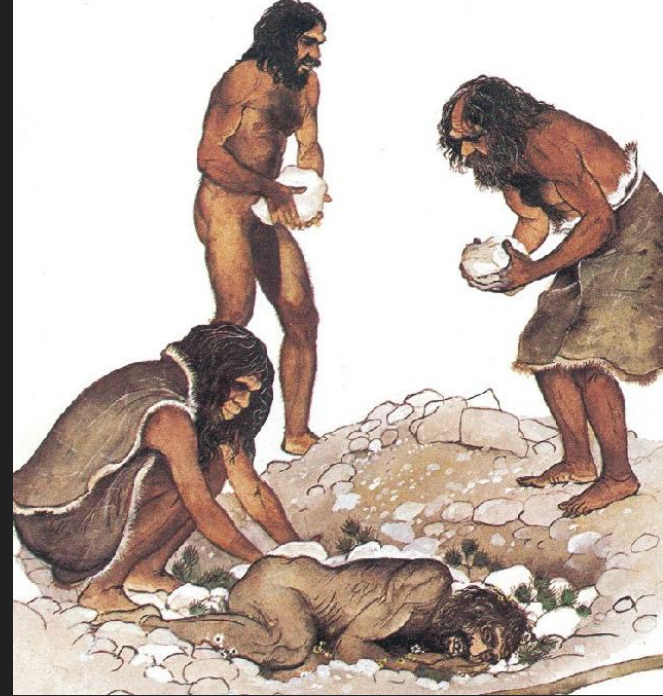
Especially concerned with the relationship
between culture and biology

Subfields of note

Paleoanthropology

Forensic Anthropology

Primatology



3. Physical Anthropology - A Survey

Physical vs. Biological

Forme générale de la tête vue de profil.



1. Nègre à prognathisme moyen. 2. Type d'Européen prognathe. 3. Prognathisme limité avec saillie labiale dans le prognathisme nasal.



4. Prognathisme accentué avec prédominance du menton. 5. Type d'orthognathe. 6. Profil fronto-nasal rectiligne.



7. Tête subbrachycéphale (microcéphale). 8. Tête en carène (scaphocéphale). 9. Tête en biseau (symbocéphale).

Tableau récapitulatif des formes séricées les plus caractéristiques à signaler sur la tête ou tout état de cause



1. Oreille sup. plate. 2. Oreille sup. très grande. 3. Oreille post. très grande. 4. Oreille post. très grande.



5. Oreille descendant. 6. Oreille à gorge. 7. Oreille très point. 8. Oreille très grande.



9. Anthragos horizontal. 10. Anthragos à profil concave. 11. Anthragos versé ou débile. 12. Crâne horizontal.



13. Oreille inférieure à coupe convexe. 14. Oreille inférieure à coupe concave. 15. Oreille sup. nul. 16. Oreille sup. accolée à la tête long.

Factor	Speculated Influence	Comments
Carrying (objects, tools, weapons, infants) 	Upright posture freed the arms to carry various objects (including offspring).	Charles Darwin emphasized this view, particularly relating to tools and weapons; however, evidence of stone tools is found much later in the record than first evidence of bipedalism.
Hunting 	Bipedalism allowed carrying of weapons, more accurate throwing of certain weapons, and improved long-distance walking.	Systematic hunting is now thought not to have been practiced until after the origin of bipedal hominins.
Seed and nut gathering 	Feeding on seeds and nuts occurred while standing upright.	Model initially drawn from analogy with gelada baboons (see text).
Feeding from bushes 	Upright posture provided access to seeds, berries, etc., in lower branches; analogous to adaptation seen in some specialized antelope.	Climbing adaptation already existed as prior ancestral trait in earliest hominins (i.e., bush and tree feeding already was established prior to bipedal adaptations).
Thermoregulation (cooling) 	Vertical posture exposes less of the body to direct sun; increased distance from ground facilitates cooling by increased exposure to breezes.	Works best for animals active midday on savanna; moreover, adaptation to bipedalism may have initially occurred in woodlands, not on savanna.
Visual surveillance 	Standing up provided better view of surrounding countryside (view of potential predators as well as other group members).	Behavior seen occasionally in terrestrial primates (e.g., baboons); probably a contributing factor, but unlikely as "prime mover."
Long-distance walking 	Covering long distances was more efficient for a biped than for a quadruped (during hunting or foraging); mechanical reconstructions show that bipedal walking is less energetically costly than quadrupedalism (this is not the case for bipedal running).	Same difficulties as with hunting explanation; long-distance foraging on ground also appears unlikely adaptation in earliest hominins.
Male provisioning 	Males carried back resources to dependent females and young.	Monogamous bond suggested; however, most skeletal data appear to falsify this part of the hypothesis (see text).

3. Physical Anthropology - A Survey

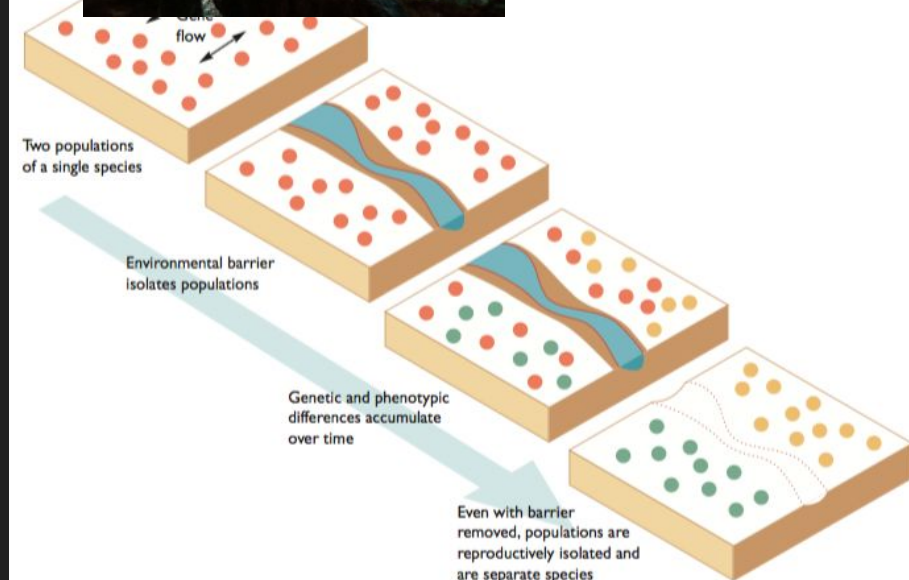
-The study of humans in an evolutionary context

Emphasize - genetics, nutrition, development, ecology, anatomical/morphological/physiological adaptations

Especially concerned with the relationship between culture and biology

Biocultural Evolution - Our predisposition for culture makes us unique from other species.

-Interactive and mutual evolution of biology and culture informed human evolutionary history



3. Physical Anthropology - A Survey - Paleoanthropology

Paleoanthropology - studies hominin anatomical and behavioral evolution via the fossil record

-Studies early human and humanlike species

-organize a chronological sequence -
-assess the relationships between fossil specimens

Hominins - Members of the evolutionary group which includes us and our now-extinct biped relatives

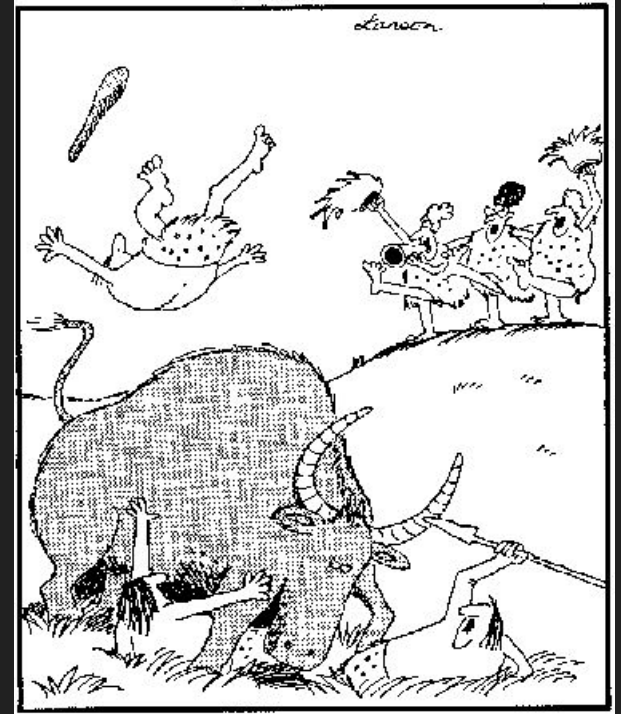


3. Physical Anthropology - A Survey - Paleoanthropology

***Osteology** - study of human skeletal material

***Paleopathology** - Specialized branch of osteology studying evidence of disease and injury in human remains - skeletal and even mummified.

Neandertal Example - trauma comparable to rodeo riders?



3. Physical Anthropology - A Survey - Forensic Anthropology

Forensic Anthropology - Applied anthropology dealing with legal matters - specifically identifying and analyzing human remains.

Applied Anthropology - Anthropological research and methods applied to address current issues and practical problems.



3. Physical Anthropology - A Survey - Primatology

Primatology - Studies the biology and behavior of non-human primates (lemurs, lorises, tarsiers, monkeys, and apes)

-nonhuman primates help us better understand the earliest stages of our own evolutionary history among other things.



3. Physical Anthropology - A Survey

Extensive focus on these two subfields for this course

Subfields

***Paleoanthropology**



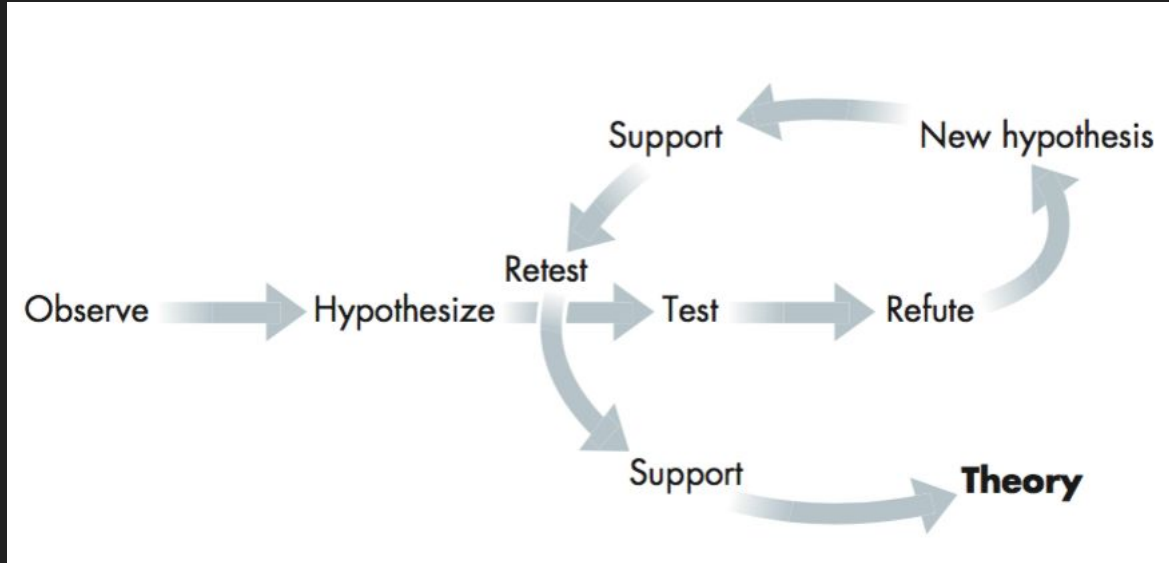
***Primateology**



4. Scientific connects with Physical Anthropology

Science and Scientific Tools

- *Empirically orientated
- *Scientific Method
- *Hypotheses v Theories
- *Data collection
- *Disconfirmation falsification



4. Scientific connects with Physical Anthropology

Scientific Method

1. **Observe** a new phenomena/Identify a problem
2. Develop a **tentative explanation - a hypothesis** explaining the observation
3. Test/analyze/research/collect data to **test the hypothesis**

"Hypothesis testing is the very core of the scientific method" (20p)

-Data - scientific information - the collection of observations, evidence, facts that inform our conclusion

4. Develop a **theory** - revise hypotheses into a broader assertion about scientific relationships or a collection of facts which informs research and withstands repeated scientific tests

4. Scientific connects with Physical Anthropology

*Science and Scientific Tools

-Method to gather information in order to best explain the world around us.

Induction - bottom up, probability, degrees of confidence

Deduction - top down, necessary truths, possibility

Abduction - Hypotheses compete for the title of "best explanation" for a given collection of evidence, observations, and/or data

4. Science connections with Physical Anthropology - Disconfirmation

- *Evidence is symmetrical

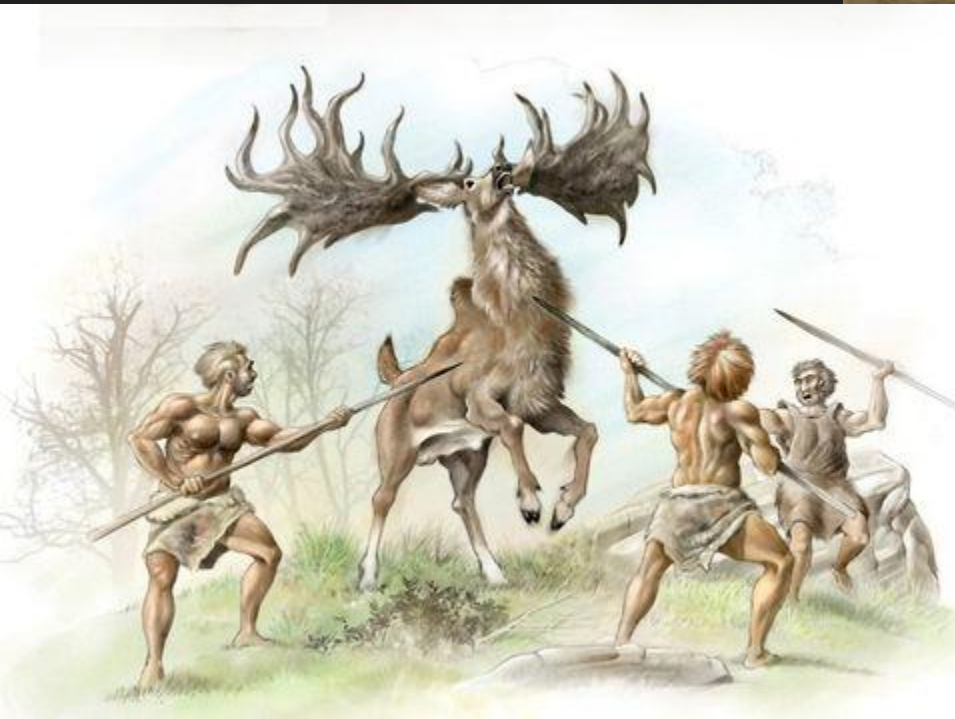
If you have evidence that can confirm a hypothesis you should have evidence that can disconfirm a hypothesis

- *Generate testable predictions

- *Ask what should we expect to see if our hypothesis were true?

- ***Disconfirmability but still unfalsifiable** - science does consider these types of hypotheses, though it is much more difficult.

4. Science connections with Physical Anthropology - Testing a hypothesis

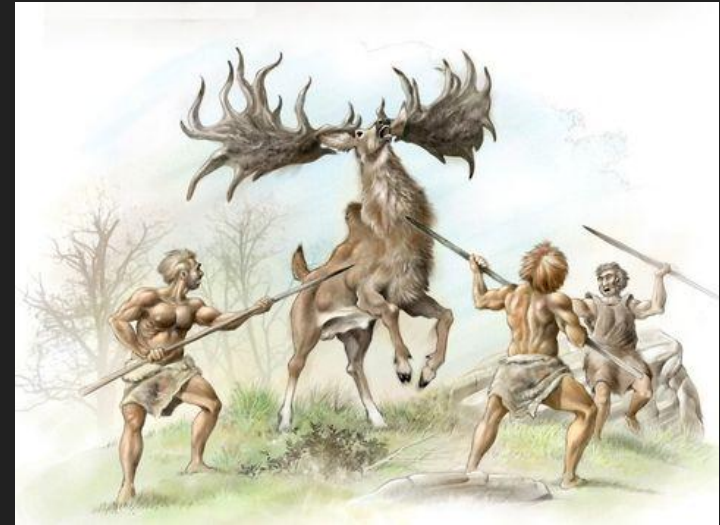


4. Science connections with Physical Anthropology - Testing a hypothesis

Confirms the hypothesis - high frequency of head and neck injuries in Neandertal compared to humans

Disconfirms the hypothesis - no difference in frequency of head and neck injuries between two groups

Since the hypothesis was first postulated...



5. How Physical Anthropology fits into the Sciences

Physical anthropology examines many important questions looking at a broader context of our human evolutionary history across space and time.

- Comparison of our characteristics to other species
- Better understand the diverse human experiences biologically and behaviorally
- Avoid **ethnocentrism** with a broader perspective

***Holism** - an emphasis on completeness and a consideration of the complex whole - important to all of anthropology!

SO MANY TOPICS SO MANY GOALS

7. Course Overview

Topics

- *A survey of evolutionary biology and genetics
- *A survey of non-human primates
- *A survey of hominin evolutionary history
- *A survey of modern human adaptations and genetics



7. Lecture Recap

- *Introduced myself
- *Went over the syllabus
- *Introduced anthropology
- *Brief survey of sub-fields
- *Focus on Physical Anthropology
- *Science informs PA