

## Chapter 1: What is Physical Anthropology?



## What is Anthropology?

- Holism
- United by **Culture**

“The sum total of traditions, values, and beliefs that groups of people learn and share through symbols”

- **Biocultural approach**

## Cultural Anthropology

- The study of human societies, especially in a cross-cultural context



- Ethnology
- Ethnography
- Applied Anthropology

## Archaeology

- **material culture** of past peoples

- **Artifacts**
- Prehistoric
- Historic



## Linguistic Anthropology

- language
- structural (descriptive)
- sociolinguistics
- historical linguistics



## What is Physical Anthropology?

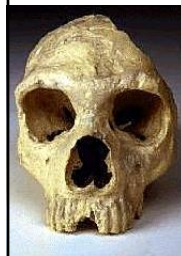
- Also called **biological anthropology**
- “Human biological evolution and biocultural variation.”
- Closest living ancestors as well
- 1) humans share phylogeny as **hominids**
- 2) we all have a unique ontogeny based upon our genes and environment
- Human genome is 20-25K genes!

## Biological Anthropology Subfields

- Paleoanthropology
- Human Biology
- Primatology
- Skeletal Biology (physiology, growth and development) and Osteology
- Paleopathology
- Molecular anthropology (genetics)
- Forensic Anthropology

## Paleoanthropology

Study **hominid** fossils, as well those of earlier **primates**

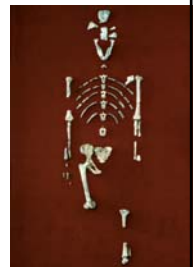


1856

- Began in the 1800s by a handful of eccentrics

- Has grown and continues to be fast growing

- Has been enormously successful



1974

## Skeletal Biology and Osteology

uncover the patterns and processes of human growth, physiology, and development



## Paleopathology

Causes?

## Paleopathology

parasites  
vitamin deficiencies  
poisoning  
routine behaviors  
risk



## Paleopathology

**Warning:** Some may be alarmed by pictures of mummified remains with diseased tissue.

Some skeletal remains with deformities and alterations may alarm as well.

## Paleopathology

Adult male mummy from the Cabuza culture  
(Northern Chile about 450 AD) with  
emphasema.

Too much smoking?

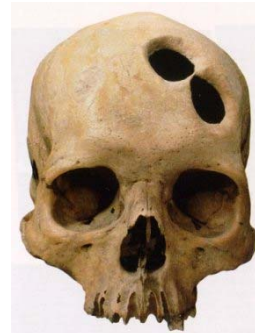
## Paleopathology



## Paleopathology

trepanation

## Paleopathology



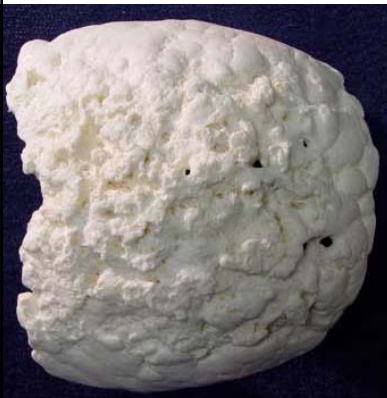
## Paleopathology

Head elongation and feet binding.  
Often done to elites, but not exclusively

## Paleopathology



## Paleopathology



Tertiary Syphilis

## Paleopathology

Homo floresiensis



Normal head size

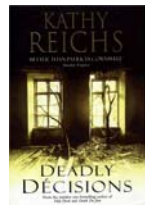


Microcephaly



## Forensic Anthropology

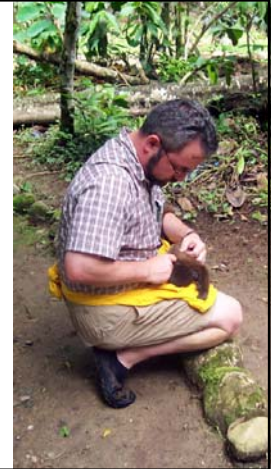
Identifying bodies, investigating war crimes, publishing crime novels to make a living.



## Primatology

primates

- Genetic similarities
- Behavioral complexities
- Ecological adaptations



## Primatology

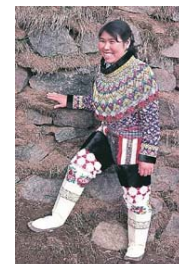
primates

- Genetic similarities
- Behavioral complexities
- Ecological adaptations



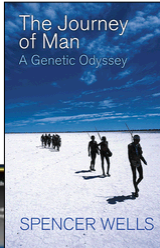
## Human Biology

- human growth and development, nutrition
- adaptation to environmental extremes
- human genetics, variation



## Human Biology

- molecular anthropology



What is so different about Humans from other animals? Six steps to Humanness:

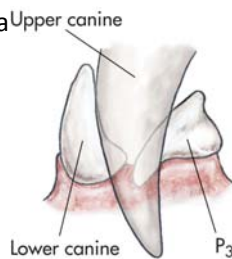
- 1) **Bipedalism** 6 mya



What is so different about Humans from other animals? Six steps to Humanness:

- 2) **Nonhoning canine** 5.5 mya

- 3) **Material culture** 2.5 mya

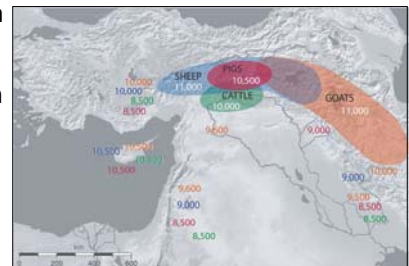


What is so different about Humans from other animals? Six steps to Humanness:

- 4) **Speech** (2.5 mya?)

- 5) **Hunting** 1mya

- 6) **Domestication**



## How We Know What we Know: The **Scientific Method**

- 1) **Empirical** observations to gather **data**
- 2) Use **data** to test **hypotheses**
  - explain, predict, can be refuted (falsified)
- 3) Hypothesis are rejected or confirmed
- 4) A **theory** has been tested over and over and has not been disproven

**Scientific Laws** are observations that are infinitely repeatable

Darwin hypothesized that human bipedalism originated in **arboreal** locomotion



**Data** was based on **anatomical** studies of **morphology** and **empirical** evidence of human and nonhuman locomotion

grassland vs. woodland hypotheses were competing hypotheses