



# **IF THESE BONES COULD TALK: FORENSIC ANTHROPOLOGY IN HUMAN RIGHTS INVESTIGATIONS**

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International Education Conference - Problem Solving: Classroom, Community & the World

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Image: So That All May Know by Daniel Hernández-Salazar

# THE FORENSIC ANTHROPOLOGIST AS POPULAR SCIENTIST DETECTIVE



# PROBLEM SOLVING WITH HUMAN REMAINS

- How do bones speak?
- Bear “silent” witness?
- What is the purpose in exhuming human remains?
- What problems can (the analysis of) bones solve?
- Who should forensic anthropologists be working on behalf of?

# TERMS & DISCIPLINES

- Physical Anthropology
  - Anthropology – Blumenbach 1775 – Varieties of Mankind (Race)
  - America – Boas - 4 Fields of Anthropology
- Biological Anthropology
- Bioarchaeology (American): biology + culture, population, contextual
  - 1990 NAGPRA → Standards (1994)
- Forensic Anthropology
- Forensic Archaeology

# HISTORY OF FORENSIC ANTHROPOLOGY

- Military Identification of War Dead
- T. Dale Stewart (1901-1997) at the Smithsonian + FBI
- 1972 - Physical Anthropology section of the American Academy of Physical Sciences (AAFS)
  - 14 founding members, but by 2006 – 300 members
  - Physical anthropology (primates, skeletal morphology, bioarchaeology), 1 MD
- 1977 – American Board of Forensic Anthropology (ABFA)
- Diplomates (DABFA) certified to engage in forensic anthro fieldwork (yearly)
  - 1978 – 22 diplomates; 2006 – 52 additional diplomates

# EMPLOYMENT

- Universities
- JPAC-CIL Joint POW/MIA Accounting Command Central (field, lab), FBI, Private, state, federal agencies
- NGO's (Physicians for Human Rights, etc.)
- Fictional and non-fictional television shows have introduced the public to various aspects of forensic anthropology, and many students have become interested in forensic anthropology as a result of this highly glamorized Hollywood interpretation of the field. To be a practicing forensic anthropologist you need a Masters Degree or Doctorate in Physical or Biological Anthropology, which usually takes between six and ten years.. There are very few opportunities for persons with a Bachelors degree to practice forensic anthropology. The majority of forensic anthropologists are employed by either academic or research institutions and consult on cases when and if the need arises. Others are employed in medical examiner's offices and the armed forces. Still others occasionally work for ad hoc tribunals and non-government organizations as part of teams investigating war crimes involving mass graves. Relatively few people practice forensic anthropology on a full-time basis. Does this mean you should not think of becoming a forensic anthropologist? Of course not, but you should realize that while there will always be a need for forensic anthropology the highly specialized nature of the field means that there has never been a high demand for the services of a forensic anthropologist. To be competitive, a student interested in forensic anthropology should consider obtaining a broad education in physical/biological anthropology or related fields.  
<http://www.theabfa.org/diplomates%202013a.html>

# HISTORY OF FORENSIC ANTHROPOLOGY

- T. Dale Stewart (1979)
  - Personal identification
  - Should not engage in fieldwork due to bias (objectivity)
  - Biological profile and expert witness
- Now...



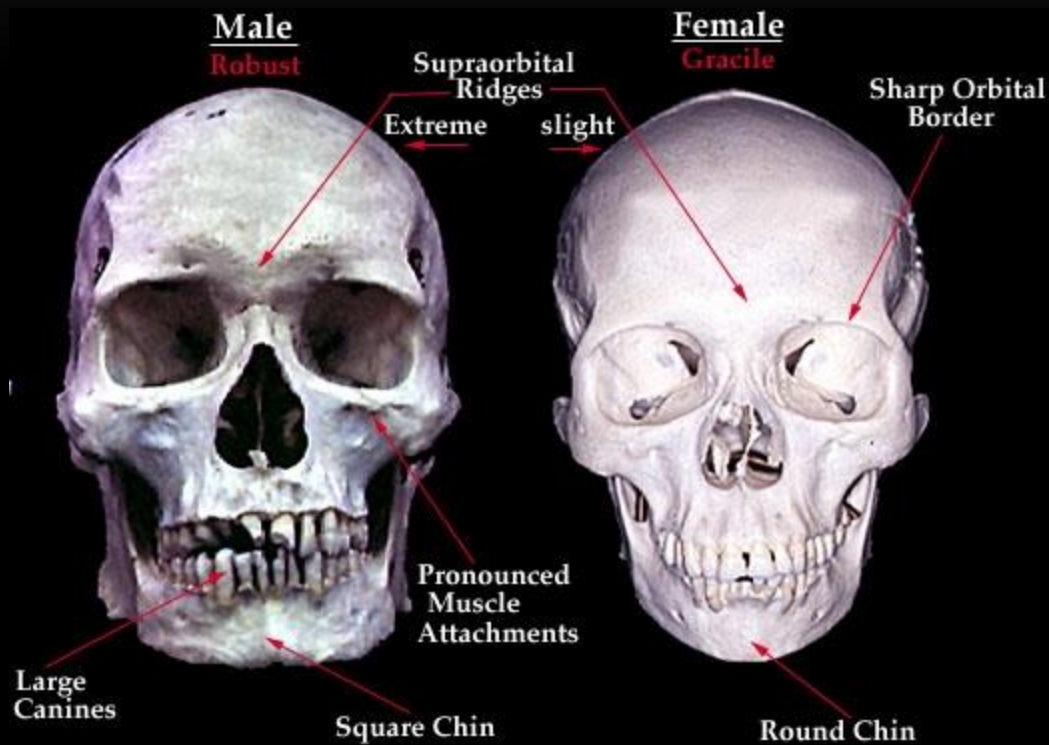
# WHAT IS FORENSIC ANTHROPOLOGY?

- The analysis of skeletal, badly decomposed, or otherwise unidentified human remains in both legal and humanitarian contexts.
- Forensic anthropologists apply standard scientific techniques developed in physical anthropology to analyze human remains, and to aid in the detection of crime.
  - locating and recovering human skeletal remains
  - Identification: Age, Sex, ancestry, Stature, unique features of a decedent from the skeleton.
  - document trauma (and abuse patterns) to the skeleton
  - estimate the postmortem interval

<http://www.theabfa.org/index.html>

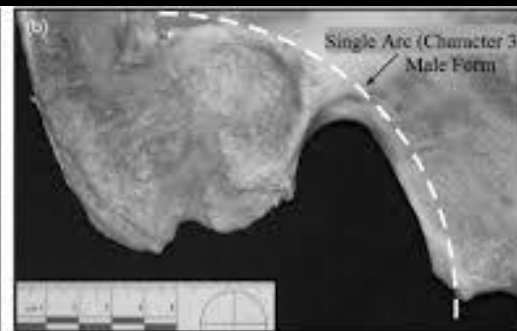
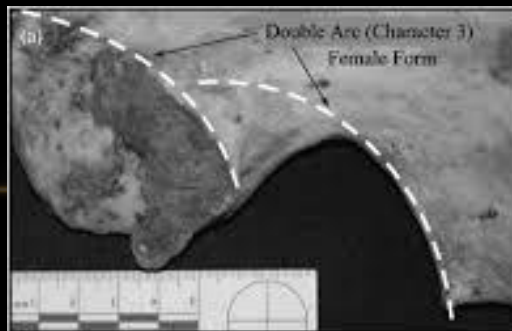
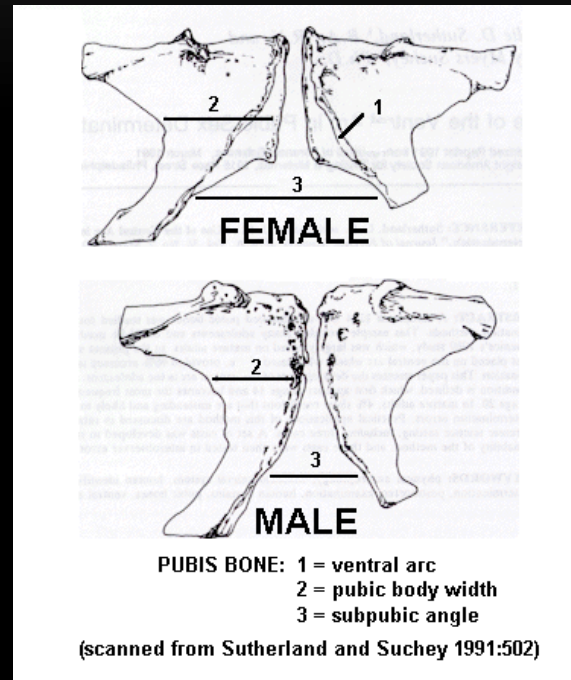
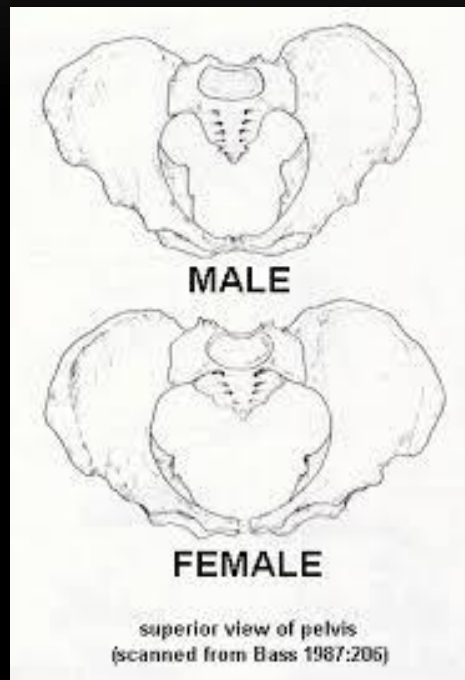


# SKELETAL SEX: CRANIAL MORPHOLOGY

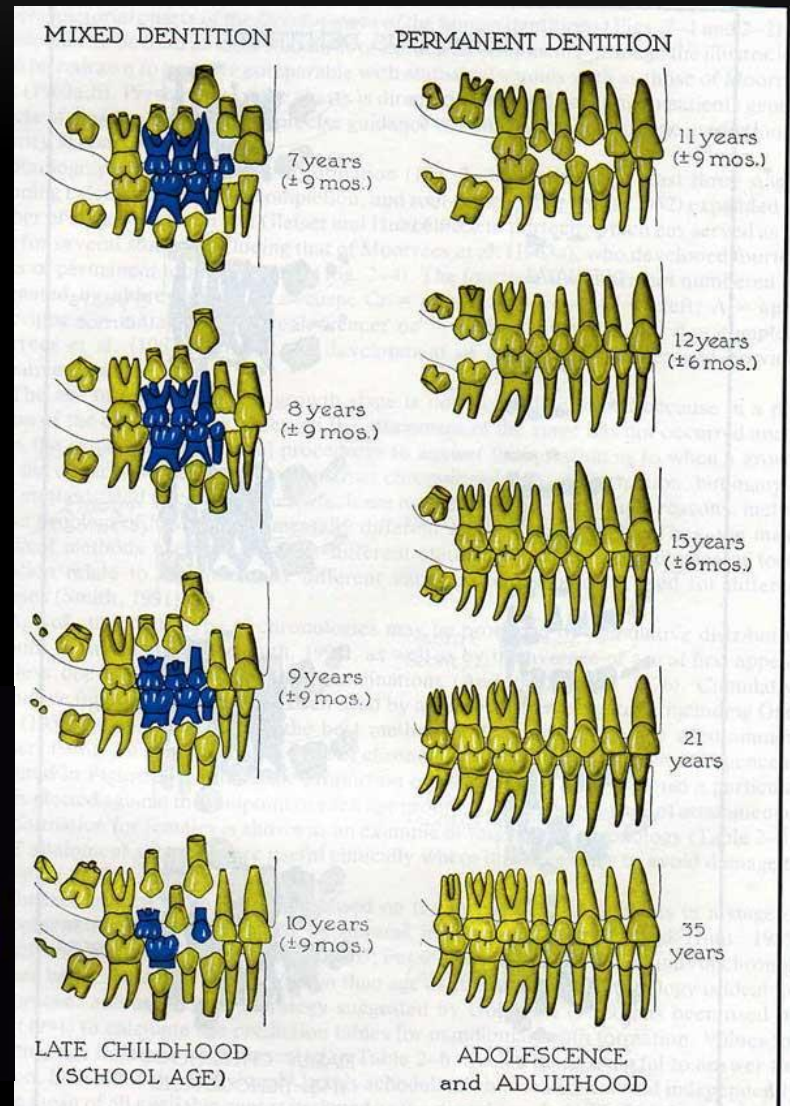
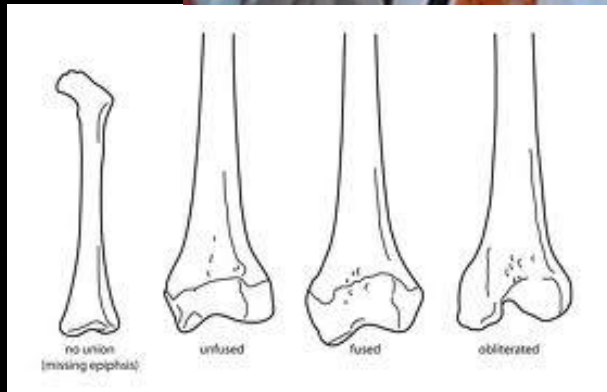


# SKELETAL SEX:

## OS COXA MORPHOLOGY & TOPOGRAPHY

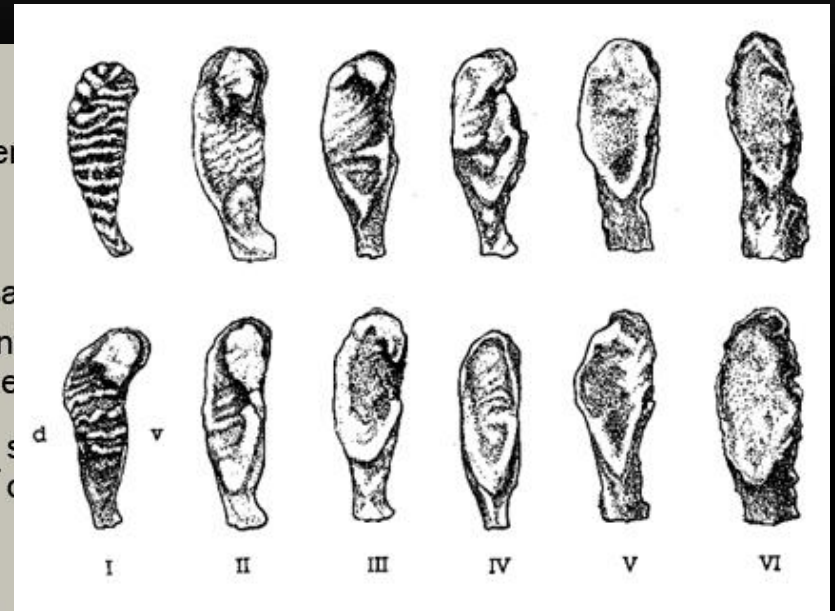
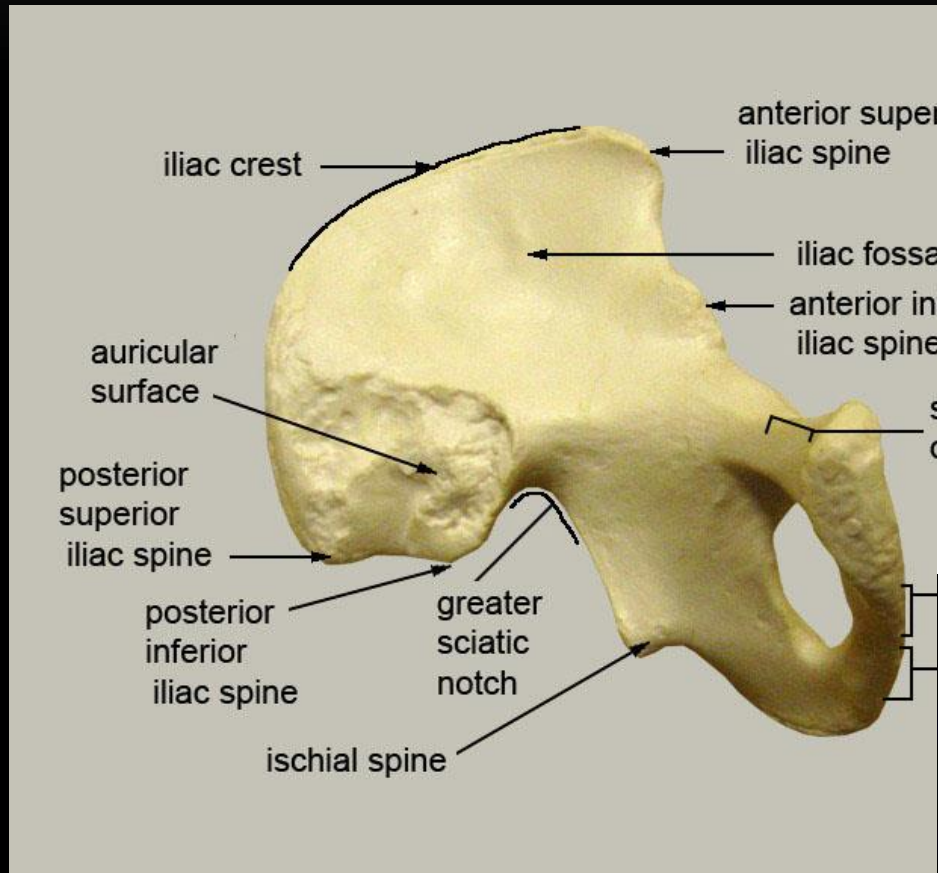


# AGE AT DEATH: SUBADULT





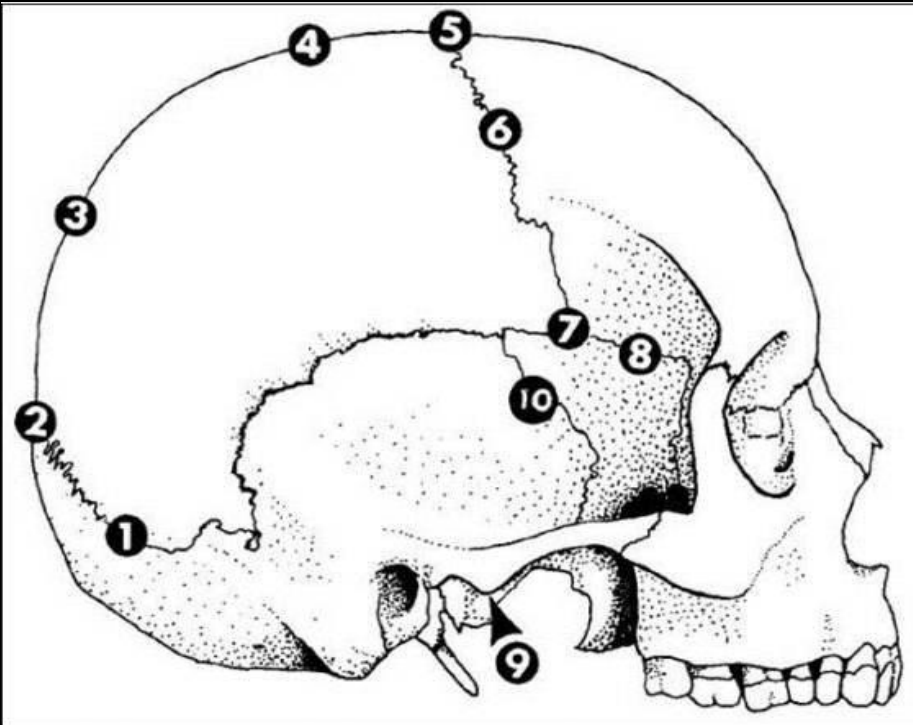
# PALEODEMOGRAPHY: AGE AT DEATH – PUBIC SYMPHYSIS



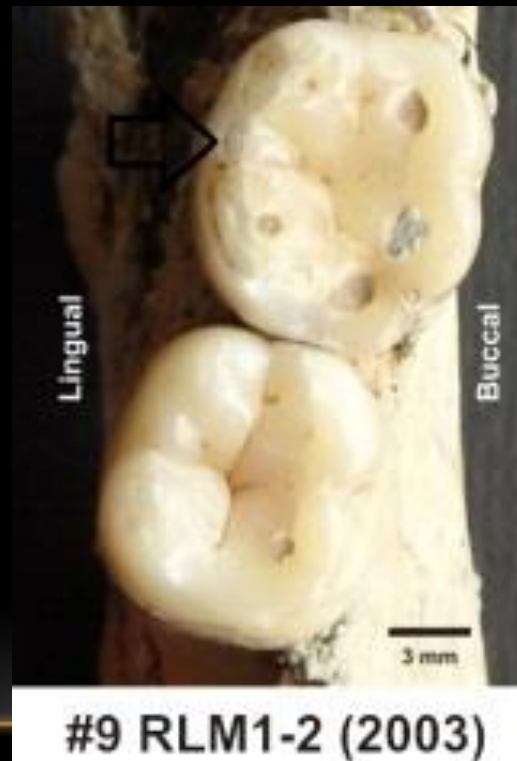
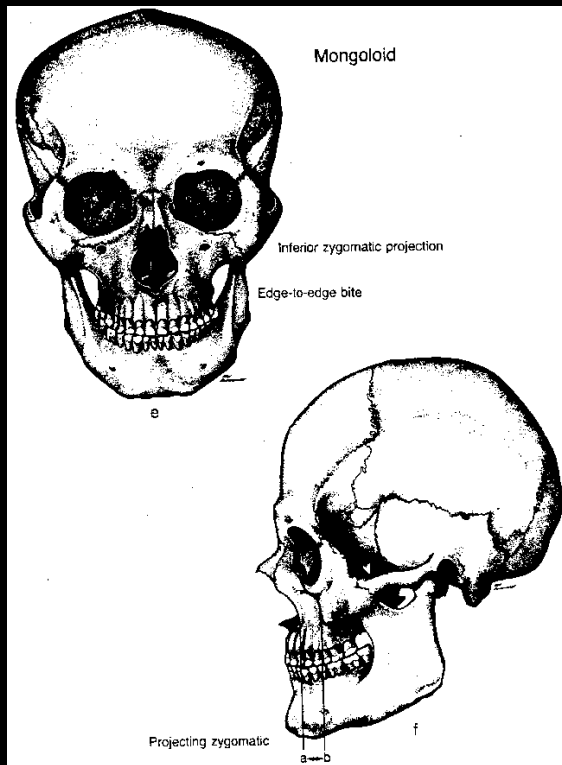
# AGE AT DEATH: OS COXA – AURICULAR SURFACE



# AGE AT DEATH: CRANIAL SUTURE CLOSURE

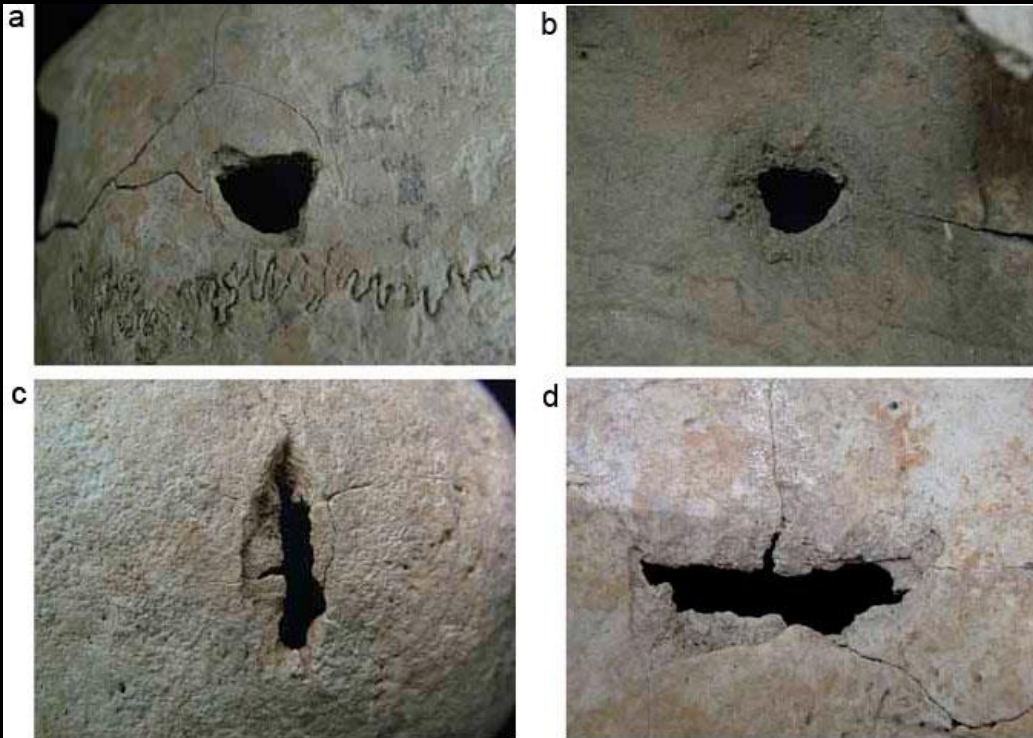


# BIOLOGICAL DISTANCE/ANCESTRY: METRIC (FORDISC 3), NON-METRIC TRAITS, DNA

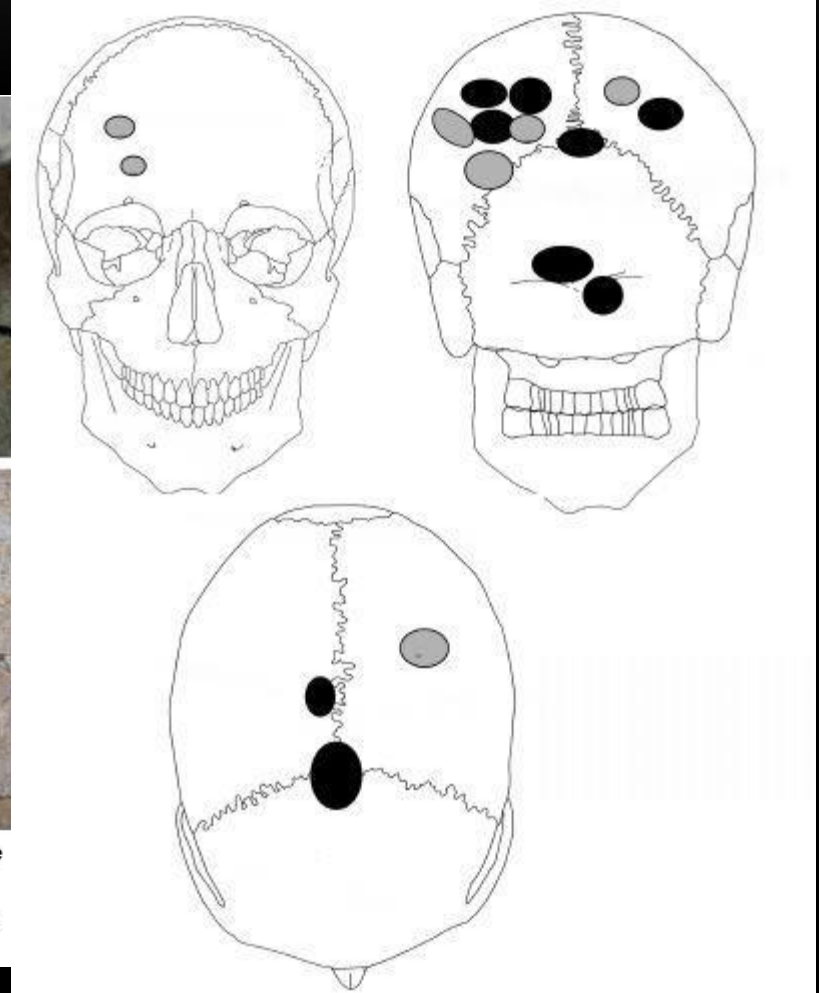




# TRAUMA & VIOLENCE



(a) An external view of puncture wound with fracture lines which was made by a sharp or projectile weapon on the individual TH80073. (b) An internal view of puncture wound with fracture lines which was made by a sharp or projectile weapon on the individual TH80073. (c) An external view of cleft wound which was made by a sharp weapon on the individual TH80079. (d) An internal view of cleft wound which was made by a sharp weapon on the individual TH80079. (Erdal 2012)



# MEDICOLEGAL SYSTEM

- Application of medical science to the law
- Coroner
  - does not need to be a physician or conduct autopsies
  - Can call for an investigation (K&B 26)
- or medical examiner
  - appointed public official who is a licensed, board-certified forensic pathologist
  - Performs autopsies
  - Can call for an investigation (K&B 26)
- Death Investigation
  - Death pronouncement
  - Scene Investigation
  - Establish Medicolegal jurisdiction
  - Triage
  - Autopsy → identification, toxicology, histology, serology, trauma
  - No autopsy → trauma, medical history
  - Determine cause and manner of death

# MEDICOLEGAL SYSTEM

- Cause of death:
  - Disease or injury responsible for initiating the sequence of
  - events that result in death
  - Cancer, gunshot wound, drug overdose, heart failure, etc.
- Manner of death:
  - Fashion in which the cause of death comes into being
  - Natural, accidental, suicide, homicide, undetermined
  - Intent, volition, motive

# TESTIFYING: EXPERT WITNESSES

- Federal Rules of Evidence
  - Validation of expertise of witness
- Frye (1923)
  - Expert qualifications of the presenting witness
  - Proposed testimony be generally accepted within the particular field in which it belongs
- Daubert (1993)
  - Whether the theory or technique used by the expert can be or has been tested
  - Whether the theory or technique has been subjected to peer review and publication
  - Known potential rate of error of the method
  - Degree of the method's or conclusion's acceptance within the relevant scientific community

# EVIDENCE

- Evidence: testimony, documents, physical evidence presented in court that proves or disproves an alleged fact
  - Fact: evidence that has been stipulated by both parties
  - Stipulation: voluntary agreement between opposing parties
  - concerning a piece of evidence (e.g. victim's identity)
- Objective evidence
  - Independent of a single mind, sense perception
  - E.g. bloodstain, fingerprint
- Subjective evidence
  - Perceived, in the mind
  - E.g. motive
- Circumstantial, material, physical evidence etc.

# FORENSIC EVIDENCE

- Descriptive information for identification vs. providing relative support for identification
  - Characteristics and estimates
  - inferences
- The “CSI” Affect – 2009 report
  - Who knows (decides) the truth?
  - Science (i.e. the expert witness)
  - The court (judge, jury)?

# THE DISAPPEARED: ARGENTINA



- 1976 – 1983 Military Dictatorship  
“Dirty War”
  - Population: est. 15-30,000 dissidents, urban, young
- 1983: CONADEP established and decided to exhume bodies
- w/ Grandmothers of the Plazo de Mayo – American Association for the Advancement of Science
- Eric Stover, Science and Human Rights Program at American Association for the Advancement of Science
- Clyde Snow to Argentina where he trained a team that became EAAF
- EAAF established methods:
  - 1.) Prelim – collect written and oral accounts
  - 2.) Analysis/research – identify potential location
  - 3.) Excavation & DNA
- By 2000, EAAF had succeeded in identifying sixty sets of remains, while a further 300 cases were still under investigation



# OTHER LATIN COUNTRIES & THE DISAPPEARED

- Guatemala
  - Civil War 1960 - 1996
  - Population: Mayans (supported leftists)
  - est. 40-50,000 disappeared
  - By October 2004, the FAFG had investigated a total of 349 clandestine burial sites and had recovered 2,982 sets of human remains
  - 2013 Montt convicted for genocide, overturned
- Chile
  - 1973 – 1990 Pinochet's dictatorship
  - Vs. communism
  - est. 3,000+ deaths
  - Call for forensic anthro: Cannot complete
  - transition to democracy without to locate and identify desaparecidos



# PERU

- 1980's & 1990's democratic government vs. Shining Path
- est. 15,000 people missing
- Population: "peasants"
- EPAF Video (2:40-4:54)
  - The Peruvian Forensic Anthropology Team (EPAF) promotes the right to truth, justice, and guarantees of non-repetition in cases of forced disappearance and extrajudicial execution. EPAF seeks to contribute to the consolidation of peace and democracy where grave human rights violations have taken place by working alongside the families of the disappeared to find their loved ones, gain access to justice, and improve the conditions affecting their political and economic development.
  - Forensic Investigation, Historical Memory, Forensic Training, Human Development
  - South-South Cooperation

# BALKANS / FORMER YUGOSLAVIA

- 1991 tensions between the ethnic groups in SFR Yugoslavia
  - War in Slovenia (1991)
  - Croatian War of Independence (1991–1995)
  - Bosnian War (1992–1995)
  - Kosovo War (1998–1999)
- 1993 UN declared Srebrenica a “safe zone” but in July 1995 VRS (Mladic) captured the town, massacre the men, and forcibly transferred women and children
- Populations: differing ethnic groups
- ICTY established May 1993 in The Hague
- Called forensic anthropologists in to Kosovo (1998-1999)
  - Need for standardization,
  - organization, professional code of ethics
- Haglund Testifying



# RWANDA

- 1994 - mass slaughter of between 500,000 and 900,000 ethnic Tutsi and politically moderate Hutu by government-directed gangs of Hutu extremist soldiers and police
- Population: Tutsi & moderate Hutu
- ICTR established in 1994 in Tanzania
- 50 trials and convicted 29 accused persons.
- Another 11 trials are in progress.
- 14 individuals are awaiting trial in detention
- 16 judges in four "chambers" - three to hear trials, and one to hear appeals. In addition, there are 9 ad litem judges, making 25 in all. At present, all 9 *ad litem* judges are assigned to Chambers II and III. There is an additional pool of 9 further *ad litem* judges who may be called on in the case of a judge being absent
- Kigali Memorial Center Art: One Million Bones Barefoot Artists



# INTERNATIONAL CRIMINAL COURT

- ICC established 2002 under the Rome Statute
  - (a) The crime of genocide;
  - (b) Crimes against humanity: Murder; Extermination; Enslavement; Deportation or forcible transfer of population; Imprisonment or other severe deprivation of physical liberty in violation of fundamental rules of international law; Torture; Rape, sexual slavery, enforced prostitution, forced pregnancy, enforced sterilization, or any other form of sexual violence of comparable gravity; Persecution against any identifiable group or collectivity on political, racial, national, ethnic, cultural, religious, gender as defined in paragraph 3, or other grounds that are universally recognized as impermissible under international law, in connection with any act referred to in this paragraph or any crime within the jurisdiction of the Court; Enforced disappearance of persons; The crime of apartheid; Other inhumane acts of a similar character intentionally causing great suffering, or serious injury to body or to mental or physical health.
  - (c) War crimes;
  - (d) The crime of aggression

# PHR

- <http://physiciansforhumanrights.org/justice-forensic-science/>
- Physicians for Human Rights advocates that victims of violations of human rights and/or humanitarian law have a right to justice, the right to know the truth, and to have history recorded accurately in order to establish a historic record grounded in science and resistant to revisionism. Forensic science touches on nearly every area of our work, from our International Forensic Program (IFP), to our Asylum Program, to our work in gender violence and rape as a weapon of war.
- Transitional Justice in Afghanistan: As part of the grassroots push for transitional justice, we have partnered with Afghan civil society organizations and national stakeholders in a multi-year program to develop forensic capabilities to help Afghanistan address human rights violations and abuses as the country moves away from conflict and seeks national healing.
- Torture, Environmental Assessment
- documented a massacre by Qaddafi forces in Tripoli for Libyan authorities and the International Criminal Court.



## AND MORE...

- Spain
- Cyprus
- Former Republics in  
the USSR
- Iraq
- Current conflicts
- Equador
- Mexico
- Armenia (prisoner camps)  
& Azerbaijan (Guba)





# PROBLEM SOLVING WITH HUMAN REMAINS

- Identification
    - Repatriation & mourning by the family
    - Evidence in state or international courts
    - “Ritual” of returning the remains
  - evidence of mass human rights violation
  - Public events
  - physical remains provide a medium and often the context for addressing trauma, truth & reconciliation, memory construction
  - Human rights advocacy for the living
  - Perpetuating conflict?
-

# TEACHING STRATEGIES?

- History / Social Science:
  - Compare the role of forensic anthropology in different contexts
- Biology
  - Anatomy & osteology exercises
  - “archaeology” exercises
- Art
  - Bones
  - Portraits
  - Graffiti and protest art
- Literature
  - The genre of science detectives
  - Biographies of forensic anthropologists

# ART



Salazar Hernandez  
(Guatemala)

Art:  
One Million Bones  
Barefoot Artists

**Ausencias (Argentina) – Gustavo Germano**

# QUESTIONS? IDEAS??



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# ANTHROPOLOGICAL QUESTIONS

- **Paleodemography:** age at death, sex, stature
- **Relatedness:** aDNA, metric & non-metric measurements (phenotypic variation)
- **Identity:** gender, age, social groups, cultural modification
- **'Health':**
  - **Paleopathology-** disease (e.g. compare treatment of individual with leprosy to those w/o ev.), lesions, DNA
  - **Nutrition & Diet** (chemical analyses, caries, isotopic analysis)
  - **Non-specific indicators of stress** (cribra orbitalia, porotic hyperostosis, harris lines)
  - **Fractures**
- **Activity patterns:** articular modifications, structural adaptation (OA, MSMs)
- **Violence:** trauma, types of fractures etc., intentionality?
- **Movement** (isotopic analysis; biomechanics)

# SEX, GENDER, AND AGE

- Skeletal Sex: phenotypic, morphological
- Genetic Sex: (DNA, chromosomal)
- Gender: culturally constructed
  - Skeletal sex and “gender” of grave goods may not always be stright forward
  - 3<sup>rd</sup> genders
  - Gender and Age intersections: e.g. All individuals over 50 may be treated in burials as a 3<sup>rd</sup> gender regardless of skeletal sex
- Sex and Age
  - Demographic Profiles
  - How old people were when they died
- Sex, Gender, Age + more
  - Life Course