Anthropology 100
February 29, 2012

Pre-Modern Humans

A. "Culture"
    a. Textbook p.3
    b. All aspects of human adaptation and belief
        i. Technology, traditions, language, religion, social roles, social organization
    c. Culture is shared, constantly changing
        i. How we live/survive
        ii. What we eat, use (edible or socially acceptable)
        iii. Who we associate with
        iv. Resources around us to use
            1. 1920s – alcohol (cultural values)
    d. Transmitted through learning
    e. Not by biological or genetic means
    f. Clifford Geertz **(1962, The Growth of Culture and the Evolution of Mind)**:
        i. Human evolution & culture intertwined
        ii. Human nature: not independent of culture
        iii. Without culture, we would be "unworkable monstrosities"

B. Mid to Late Pleistocene Culture
    a. Pleistocene Epoch (Ice Age)
        i. **c. 2.6 mya to 10,000 BP**
        ii. Continental plates: largely in place
        iii. Repeated glacial cycles
    b. Paleolithic Period (aka ***"Old Stone Age"***)
        i. Archaeological designation
        ii. **99% of human history**
        iii. Variety of tools – bone, stones, & wood
        iv. Increasing sophistication over time

            Oldowan Tradition & Acheulian Traditions

C. Middle Pleistocene (MP) Hominins
    a. Middle Pleistocene Hominins
        i. Considerable variation
        ii. Picture is muddy & complex
            1. Full of fascinating possibilities
    b. General patterns/trends for group
        i. Traditional *H. erectus* – MP hominins – *H. sapiens*
        ii. *H. erectus* or *H. ergaster* (?), depending on region
        iii. Probably more complicated
            1. Regional variability
            2. *RECENT DATA – New pictures*

2004 Genetic Map

c. African & European
    i. For many, MP hominins = *H. heidelbergensis*
    ii. **c. 850,000 to 200,000 BP**
    iii. Transitions into later hominins
        1. Possibly **both** modern humans & Neanderthals
d. For East Asia, picture not as picture
    i. Some fossil & archaeological evidence: *H. erectus* transitions into modern humans
    ii. Debate: Asian *H. erectus* distinct or regional variant or *heidelbergenesis*

D. MP Hominins of Africa (*H. heidelbergensis*)
    a. Africa (South and East)
        i. Kabwe (Broken Hill), Zambia
            1. Complete cranium element of several individuals (1921)
            2. Older (*erectus*) & modern traits
        ii. Bodo site, Ethiopia
            1. Nearly complete cranium
            2. Patterns of cut marks – defleshed by other hominins, but why? (Cannibalism? Rituals?)
            3. Earliest case of deliberate bone processing of hominins by other hominin
            4. **c. 600,000 BP**

Thought by many to evolve into modern human

E. MP Hominins of Europe (*H. heidelbergensis*)
    a. Europe
        i. Steinheim, Germany
            1. Cranium: relation of certain *H. erectus* traits
            2. Mixed with new traits
        ii. (Spain) Atapuerca Cave
            1. "Pit of Bones"
            2. 28 individuals found (4,000 + fossil fragments)
            3. Early Neandertal-like features

Thought by many to evolve into Neandertals

F. MP Hominins of Asia (*H. erectus*)
    a. East Asia
        i. Also display earlier & modern traits
        ii. Some argue: *H. erectus* transitions into modern humans
        iii. Others argue: *H. erectus* related to *H. heidelbergensis*

1. Regional variants

ONGOING debate – more evidence needed

b. Dali (East China)
   i. Cranium displays *erectus* and *sapiens* traits
   ii. Is the specimen part of *H. heidelbergensis* or late *H. erectus/early H. sapiens?*

Thought by many to evolve into modern humans

G. Too many names?
   a. MP hominins – some consensus
      i. Most hominins closely related
      ii. *Only some left direct descendants*
      iii. Evidence of interbreeding (ad-mixture)
   b. Use of "paleospecies"
      i. ***Potential for interbreeding***, with right opportunities
      ii. **NOT** necessarily distinct biological species
      iii. EXAMPLE: **Neandertals**

Paleospecies – species defined from fossil evidence, often covering a long time span

H. Neandertals (*H. neanderthalensis*)
   a. **c. 130,000 to 30,000 BP**
   b. Mostly Europe, western Asia
      i. Derived from *H. heidelbergensis*
      ii. Potentially isolated – side branch?
         1. Divergence from other hominins
      iii. Mousterian tool tradition
         1. Usually associated w/ Neandertals
         2. Some evidence: use by anatomically modern humans
            a. Near East, northern Africa

I. NEW DATA: Neandertal DNA
   a. DNA analysis: Signs of admixture/interbreeding
   b. Bones found in Vindija Cave (Croatia), **c. 40,000 BP**
   c. Genomes for some modern people (Eurasians) derived from Neandertals: between 1-4%
   d. Neandertal DNA signal in genomes of people in
      i. Europe, E. Asia, Papua New Guinea
   e. However, sample size is small, so more data is needed