THE ORIGIN AND SPREAD OF MODERN HUMANS

- Modern Humans
- The Advent of Behavioral Modernity
- Advances in Technology
- Glacial Retreat
- Cave Art
- The Settling of Australia
- Settling the Americas
- The Peopling of the Pacific

1. MODERN HUMANS

Anatomically modern humans (AMHs) evolved from an archaic Homo sapiens African ancestor

- Eventually AMHs spread to other areas, including western Europe, where they replaced, or interbred with, Neandertals

Out of Africa II

- Accumulating to support African origin for AMHs
  - White and Asfaw: finds near village of Herto are generally anatomically modern
  - Leakey: Omo Kibish remains from 195,000 B.P. appear to be earliest AMH fossils yet found
  - Sites in South Africa of early African AMHs
• Anatomically modern specimens, including skull found at Skhūl, date to 100,000 B.P.
  • Early AMHs in Western Europe often referred to as Cro Magnons, after earliest fossil find of an anatomically modern human in France
  • AMHs may have inhabited Middle East before the Neandertals

GENETIC EVIDENCE FOR OUT OF AFRICA II
• Researchers from Berkeley generated a computerized model of Homo evolution
  • Based upon the average rate of mutation in known samples of mtDNA
  • Only the mother contributes mtDNA
  • Everyone alive today has mtDNA that descends from a woman (dubbed Eve) who lived in sub-Saharan Africa around 200,000 years ago

GENETIC EVIDENCE FOR OUT OF AFRICA II
• In 1997, mtDNA extracted showed that the Neandertals differed significantly from modern humans
  • 27 differences between modern humans and Neandertal
    • Samples of DNA from modern populations worldwide show only 5 to 8 differences
    • Neandertals may or may not have coexisted with modern humans in the Middle East for thousands of years
THE DENISOVANS

• 2010- Pääbo: 2.5% of Neandertal genome more similar to the DNA of living Europeans and Asians than to African DNA
  • Suggests Neandertals interbred with AMHs soon after the latter emerged from Africa around 50,000 years ago
  • Diverged from common ancestor 600,000
• Denisova Cave, Siberia
  • Denisovan/Neandertal split ~400,000 ya

THE DENISOVANS

• Denisovans distant cousins to Neandertals
  • Lived in Asia from 400,000 to 50,000 years ago
  • Split between ancestral Neandertals and Denisovans around 400,000 years ago

2. THE ADVENT OF BEHAVIORAL MODERNITY

• Scientists agree on the following:
  • 6 m.y.a., hominin ancestors originated in Africa and became habitual bipeds
  • By 2.6 m.y.a., hominins were making crude stone tools
  • By 1.7 m.y.a., hominins had spread from Africa to Asia and eventually Europe
  • Around 200,000 years ago, AMHs evolved from ancestors who had remained in Africa
THE ADVENT OF BEHAVIORAL MODERNITY

• Disagreement on when AMHs achieved behavioral modernity: fully human behavior based on symbolic thought and cultural creativity

THE ADVENT OF BEHAVIORAL MODERNITY

• Klein: human creativity dawned suddenly around 45,000 years ago
  • Neurological hypothesis
• Gamble: rise of modern human behavior a result of increasing social competition
• White: personal adornment in Africa and the Middle East shows that human creative capacity existed among AMHs long before they reached Europe

ADVANCES IN TECHNOLOGY

• Upper Paleolithic toolmaking has been traditionally associated with AMHs in Europe and emphasized blade tools
  • Blade tools: the basic Upper Paleolithic tool, hammered off a prepared core
    • Blades modified to produce a variety of special-purpose tools
ADVANCES IN TECHNOLOGY

- Number of distinct tool types increased
  - Growth in *Homo*’s total population and geographic range and increasing local cultural diversity
    - Scrapers
    - Burins
    - Awls
    - Needles

GLACIAL RETREAT

- As ice retreated between 17,000 and 12,000 years ago in Europe, large herbivores gradually moved north
  - Western Europeans used greater variety of foods
  - Continental shelf created zone for marine life accessible to humans
  - Southwestern European economies less specialized
CAVE ART

- Earliest cave paintings date back some 36,000 years
  - Most cave paintings concentrated in southwestern France and northern Spain
    - Lascaux
  - Various magical or ritual functions
    - Often occur in clusters
    - A kind of pictorial history
    - Coincides with period of glacial retreat

THE SETTLING OF AUSTRALIA

- At times of major glacial advance, such as 50,000 years ago, dry land (Sahul) connected Australia, New Guinea, and Tasmania
  - Separated from Asia by narrow straits
  - Hudjashov: native Australian/New Guinean mtDNA samples fit into one of four branches associated with spread of modern humans out of Africa between 70,000 and 50,000 B.P.

THE SETTLING OF AUSTRALIA

- Australia has provided a few of the oldest modern human skeletons (46,000 B.P.) known outside Africa
  - Mungo III
    - Oldest ritual ochre burial
    - O’Connell and Allen: Australia occupied by 46,000 B.P. but not much earlier
SETTLING THE AMERICAS

- Beringia, the Bering land bridge, once connected North America and Siberia
  - Ancestors of Native Americans moved gradually eastward as hunters
    - Successive generations of hunters followed game through unglaciated corridors and spread by boat down the Pacific coast
    - Paleoindians on North America’s grasslands hunted horses, camels, bison, elephants, mammoths, and giant sloths

- **Clovis tradition**: sophisticated stone technology based on a sharp point that was fastened to end of a hunting spear
  - Spread throughout North America
    - Clovis people not first or only settlers of Americas
    - Evidence for early occupation of southern South America suggests that first migration(s) of people into Americas may date back 18,000 years
    - Americas settled by more than one haplogroup
Figure 10.4: The Ancestors of Native Americans Came to North America as Migrants from Asia

Figure 10.5: A Clovis Spear Point

THE PEOPLING OF THE PACIFIC

- People reached Australia around 50,000 years ago but did not spread eastward
- Solomon Islands formed eastern edge of inhabited Pacific until 3000 B.P.
  - Deep-sea crossings and colonization linked to rapid spread of earliest pottery found in Oceania
  - Lapita pottery makers
  - Burley: Tongatapu “probably served as the initial staging point for population expansion”
THE PEOPLING OF THE PACIFIC

• Stoneking: DNA evidence shows that ancestors of Polynesians were Austronesians
  • Mixing of newcomers and Melanesians helped Lapita pottery style emerge
  • Kirch: By 2000 B.P., the people of Tonga had developed a double-hull sailing canoe

Figure 10.6: Oceania