

# Chapter 2 Notes

## 1. Swingers to Walkers (23-3m ya)

- **Early Apes (23 million years ago)**

- Perfectly adapted for forest life with long arms, curved fingers, flexible shoulders
- Forward-facing eyes to judge jumping distances

- **Climate Change Challenge (10 million years ago)**

- Earth cooled, forests shrank, savannas grew
- Some apes ventured into open grasslands

- **Walking Upright (7 million years ago)**

- First "hominins" stood on two legs
- **Advantages:** seeing over tall grass, traveling longer distances, keeping cooler, freeing hands

- **Notable Early Hominins**

- **Ardipithecus** (4.4 million years ago): Could walk upright and climb trees
- **Australopithecus** (4 million years ago): Clearly built for walking upright
- **Lucy** (3.2 million years ago): Famous skeleton showing upright walking

## 2. Homo habilis (2.8-1.5m ya)

- **Major Change:** First creatures to create tools rather than waiting for mutations
- **Oldowan Tools:** Simple stone flakes and choppers
- **Walking Upright** (7 million years ago)
  - Cut meat from animal bodies
  - Crack open bones for nutritious marrow
  - Process tough plant materials
  - Better defense against predators
- **Tool-Brain Cycle:** Better nutrition → larger brains → more sophisticated tool-making → even better nutrition

## 3. Homo erectus (1.9m-110k ya)

- **Body Features:** Taller (4.5-6 feet), stronger, 50% larger brain than Homo habilis
- **First to Leave Africa:** Spread across Asia to Georgia, China, and Indonesia
- **Fire Mastery** (1 million years ago)
  - Provided warmth, protection, light, and cooking
  - **Cooking changed human bodies:** smaller jaws, less strong teeth, shorter digestive systems, larger brains
- **Advanced Tools:** Created carefully crafted "Acheulean" hand axes

- Used for 1.5 million years - longest-lasting technology in human history
- Show planning and symmetry, perhaps the earliest beginnings of art

## 4. Family Tree Branches (700k-40k ya)

- **Homo heidelbergensis** (700,000 years ago): Important in-between species with larger brains
- **Three Branch-Off Species:**
  1. **Neanderthals (Europe):** Adapted for cold with thick, muscular frames, shorter limbs, larger noses
  2. **Denisovans (Asia):** Less known, spread across Asia with special adaptations for high altitudes
  3. **Homo sapiens (Africa):** Taller, slimmer bodies, higher foreheads, rounded skulls

## 5. The Thinking Revolution (100k-70k ya)

- **Brain Change:** Shape became more rounded, working far more efficiently
- **New Mental Abilities:**
  - **Abstract thinking**—imagining things that don't yet exist

- **Future planning**—thinking about next season or year
  - **Symbolic thought**—using marks to represent animals
  - **Complex language**—building and sharing detailed knowledge
  - **Social intelligence**—tracking complex relationships
  - **Creative problem-solving**—combining existing tools and ideas in new ways
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- **Unique Human Trait:** Lack of fixed instincts, allowing greater ability to change
  
  - **Skillful Hands:** Perfect partner for creative brains with opposable thumbs and sensitive fingertips