

Chapter 2 Notes

I. From Swingers to Walkers (23-4 million years ago)

- **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

II. Homo habilis: The First Toolmakers (2.8-1.5 million years ago)

- **Major Change:** First creatures to create tools rather than waiting for natural selection
- **Oldowan Tools:** Simple stone flakes and choppers
- **Tool Benefits:**
 - 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

III. Homo erectus: Masters of Fire and Exploration (1.9 million-110,000 years ago)

- **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

IV. The Family Tree Branches (700,000-40,000 years ago)

- **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

V. The Thinking Revolution (100,000-70,000 years ago)

- **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
- **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

VI. The Rise of Homo Sapiens (70,000-15,000 years ago)

- **Spread Across Earth:** Moved from Africa across the entire planet
 - Reached Australia by 65,000 years ago
 - Europe by 45,000 years ago
 - Americas by 15,000 years ago
- **Creative Explosion (50,000 years ago)**
 - Specialized roles within groups
 - Advanced shelters for different environments
 - Clothing technologies
 - Art forms: cave paintings, carvings, beadwork
 - Social networks across vast distances
- **Daily Life Improvements:**
 - Advanced hunting and gathering tools
 - Varied diet from many food sources
 - Division of labor: hunters, gatherers, toolmakers, healers, storytellers
 - Clothing with practical and identity purposes

VII. The Last Humans Standing (50,000-40,000 years ago)

- **Survival Advantages:**
 - Adaptable shelters and sophisticated clothing
 - Varied food-getting strategies
 - Extended social connections
 - Mixing with other human species (Neanderthals and Denisovans)
- **By 40,000 years ago:** Homo sapiens was the only human species left

VIII. The Tough Reality of Paleolithic Life

- **Daily Challenges:**
 - No permanent housing or sanitation
 - Weather extremes without protection
 - Food insecurity and constant danger
 - Short lives (30-40 years)
 - Limited choices and knowledge
 - Most time spent on survival tasks

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