

# INTRODUCTION TO ANTHROPOLOGY



**ANTH 101**

**PROF. KURT REYMERS (DR. K)**

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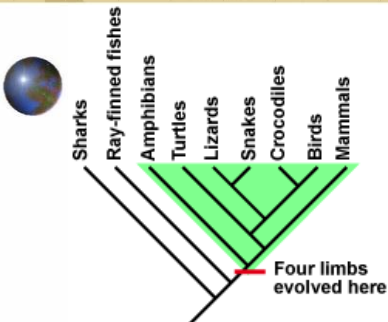
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## C. Primate Evolution

Where do HUMANS fit into this picture?



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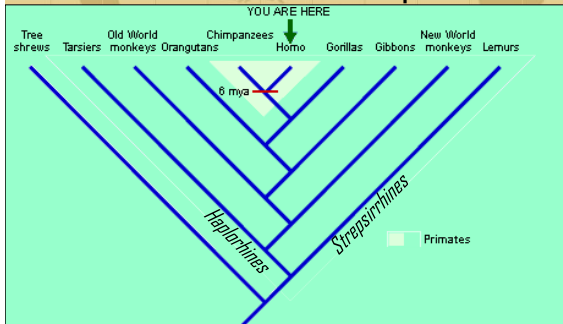
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## C. Primate Evolution

Where do HUMANS fit into this picture?



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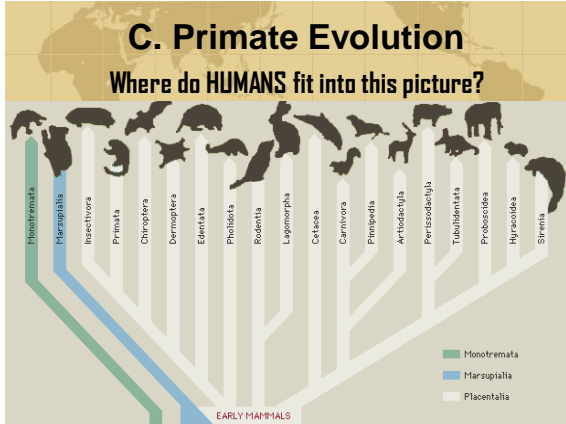
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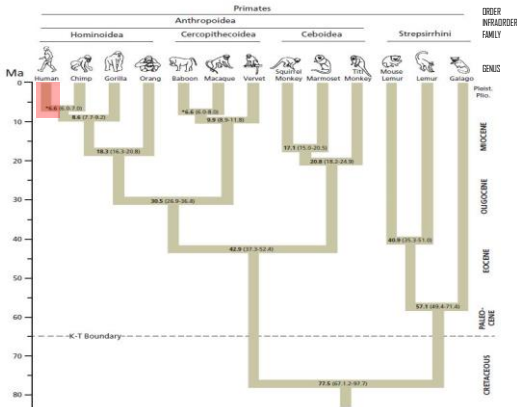
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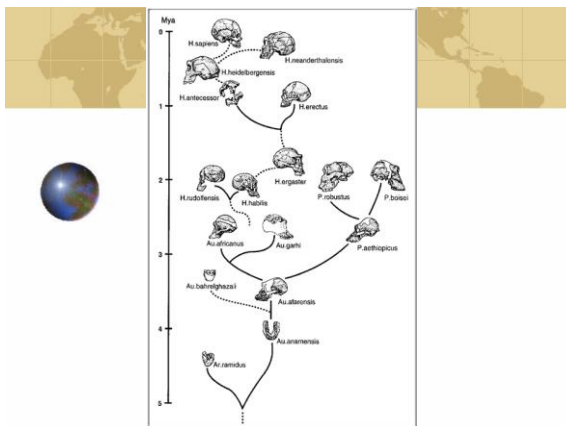
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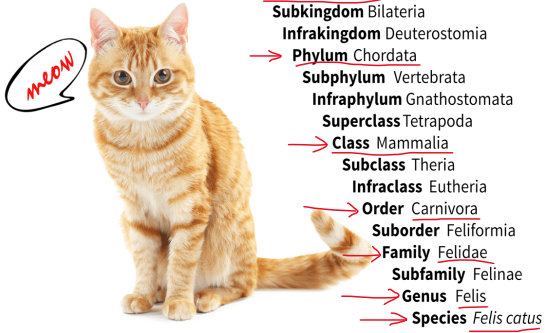
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## Scientific Classification of a Domestic Cat




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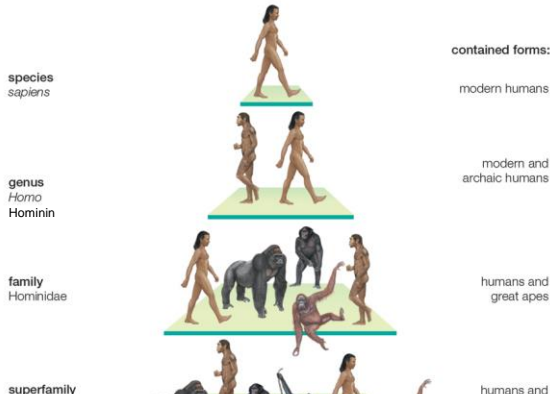
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### Classification of *Homo sapiens* within the order Primates




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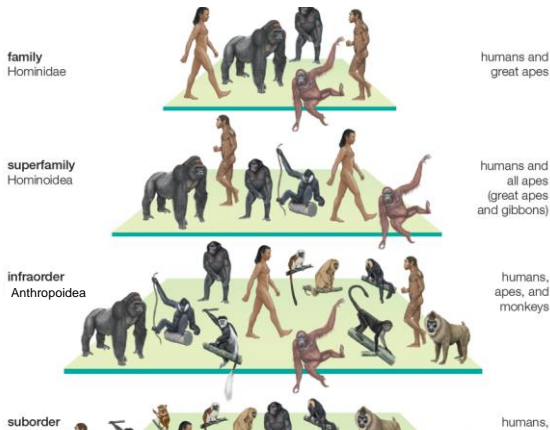
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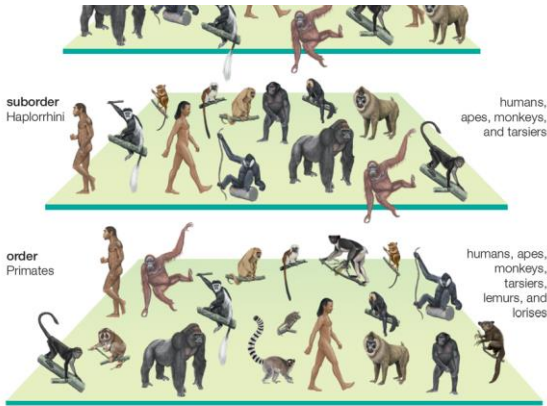
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## C. Primate Evolution

b. In the following taxonomy of the human line, **Order** and **Family** will be presented next:

Kingdom: Animalia (Animals)  
 Phylum: Chordata (Vertebrate)  
 Class: Mammalia (Mammals)

**Order: Primata** (Primates)  
**Suborder: Haplorrhini**  
**Infraorder: Anthropoids** (Simiiformes)  
**Superfamily: Hominoidea**  
**Family: Hominidae** (Hominids)  
**Subfamily: Homininae** (Hominins) (next week)  
**Genus: Homo** (next week)  
**Species: Sapiens** (next week)

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Primata
Suborder:	Haplorrhini
Infraorder:	Simiiformes
Family:	Hominidae
Subfamily:	Homininae
Tribe:	Hominini
Genus:	Homo
Species:	Linnaeus, 1758

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**ORDER: Primates:** humans, apes, monkeys, tarsiers, lemurs, & lorises

**Suborder: Haplorrhini:** humans, apes, monkeys & tarsiers

**Infraorder: Anthropoids:** humans, apes, & monkeys

**Superfamily: Hominoidea:** humans and all apes (add gibbons)

**Our Primate Relatedness** **FAMILY: Hominidae:** all humans and the great apes (gorillas, chimps/bonobos, & orangutans)

**GENUS: Hominin:** both modern and archaic humans (Latin: Homo)

**SPECIES: Homo sapiens:** modern humans

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## C. Primate Evolution



### 1. Features of Primate Evolution

Primates share at least six evolutionary trends:

- a. **Increasing brain size**, relative to body size, and increased brain **complexity**
- b. **Increasing** dependence on **sight**
- c. **Increasing** period of **infant dependence**
- d. **Increasing** dependence on **learned behavior**
- e. **Decreasing facial projection** and reliance on the sense of **smell**
- f. **Decreasing** number of **teeth**



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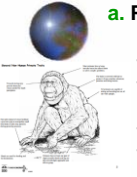
## C. Primate Evolution

### 2. Patterns in Primate Evolution

a. Primates share a unique **prehensile**

(grasping and holding) **morphology**:

- **Opposable thumbs** and great ("big") toes
- **Nails** rather than claws on at least some fingers or toes
- **Nerves in fingertip pads** and toes
- **Fingerprints**: dermal ridges, or "friction skin," on toes, fingers, soles, palms, and underside of prehensile tails



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## C. Primate Evolution

### 3. Approaches to Primates (our Order)

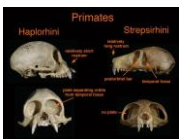
a. Cladistic taxonomists divide primates into **Strepsirhines** and **Haplorhines**.

#### 1. Strepsirhines

- Have a rhinarium, or upper lip, directly attached to the gums
- Includes: **lemurs and lorises**

#### 2. Haplorhines

- Do **not** have a rhinarium
- Includes: **tarsiers and anthropoids**



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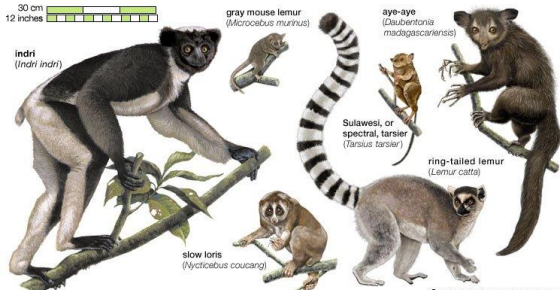
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## C. Primate Evolution

### Strepsirhines



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## C. Primate Evolution

Video: Tarsiers

### 3.a.2. Haplorrhines (our Suborder)



- i. **Tarsiers** or Tarsiformes
  - Small, nocturnal primates
  - Originally grouped with lemurs and lorises into prosimians, but since separated.
- ii. **Anthropoids (our infraorder)**
  - Consist of **monkeys, apes, and humans**
  - Subdivided into **Old World anthropoids** and **New World anthropoids** (all monkeys, classified as "platyrrhines", or flat-nosed primates).

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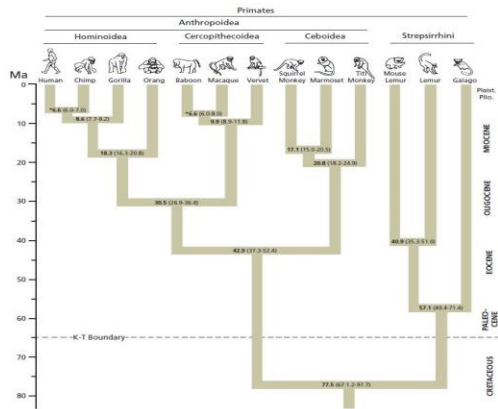
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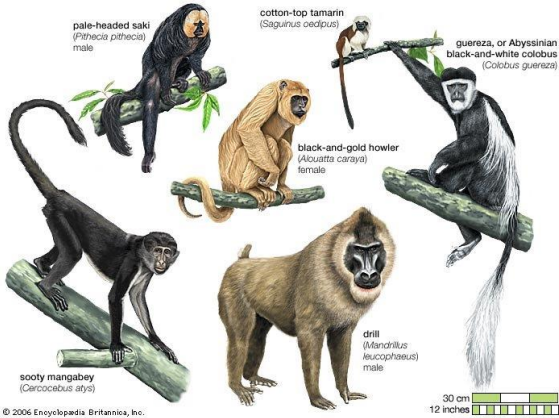
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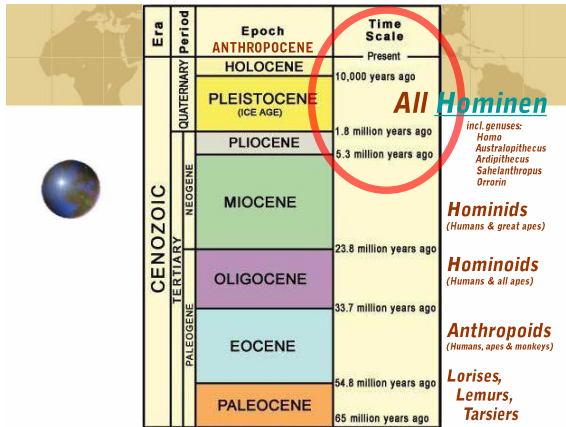
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## C. Primate Evolution

### 4. Hominoids (our Superfamily) and Hominids (our Family)

- a. Apes and humans differ from monkeys in teeth, skeletal shape and size, and lack a tail.
  - Hominoids include all Apes and Humans. They can be broken down into lesser apes (i.e. gibbons), great apes, and humans.
  - Hominids include Great Apes (gorillas, chimps/ bonobos, orangutans) and Humans.
  - Note: Humans are more closely related to chimpanzees and bonobos than any other hominid (they share 98% similar DNA).

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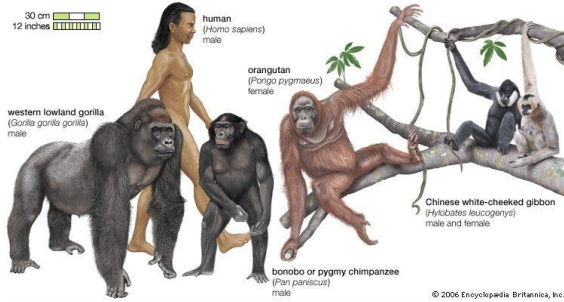
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## C. Primate Evolution Hominoids (humans and apes)



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## C. Primate Evolution

### 4. Hominids: the Great Apes

#### b. Gorillas



- Live in Africa and are **the most sexually dimorphic primate**
- A single **male dominates** social groups
- Consist of five living subspecies
  - Western lowland gorilla
  - Cross River gorilla
  - Grauer's gorilla
  - Bwindi gorilla
  - Mountain gorilla
- The **mountain gorilla** is the rarest subspecies best known thanks to **Dian Fossey**.



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## C. Primate Evolution

### 4. Hominids: The Great Apes

#### c. Chimpanzees



- Consist of **two living species** in Africa
  - **Common** chimpanzee (*Pan troglodytes*)
  - **Bonobo** or "pygmy" chimpanzee (*Pan paniscus*)
- Common chimpanzees are the most studied of all apes, thanks largely to **Jane Goodall** and associates.
- **Chimpanzees** regularly make and **use tools**.
- **Bonobos** are known for **highly eroticized social interactions** and a central role for females.



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## C. Primate Evolution

### 5. TIMELINE:

#### Primate Evolution during the Cenozoic

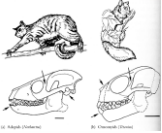


##### a. Paleocene Epoch (65-54 mya)

- Earliest evidence for primates

##### b. Eocene Epoch (54-38 mya)

- Primates are divided into **adapids** and **omomyids**.
- Adapids look like living lemurs but lack a dental comb.
- Omomyids look like living tarsiers.
- **Anthropoideans appear** and are ancestral to later monkeys, apes, and humans.



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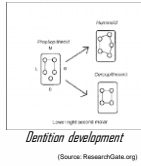
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## C. Primate Evolution

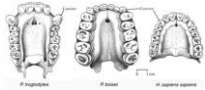
### 5. TIMELINE: Primate Evolution during the Cenozoic



##### c. Oligocene Epoch (38-23 mya)

- **Anthropoidean** fossils are divided into **parapithecids** and **propliopithecids**.
- Parapithecids may be ancestral to New World monkeys.
- Propithecids may be ancestral to all later Old World monkeys, apes, and humans.

**Earliest hominoid**, or ape, fossils date to the late Oligocene.



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## C. Primate Evolution

### 5. TIMELINE: Primate Evolution during the Cenozoic

##### d. Miocene Epoch (23 to 5 mya)

- **Hominoid diversity decreased** during the middle Miocene (ca. 16-10 mya).
- **Old World Monkeys** become very successful during the late Miocene (ca. 9-5 mya).
- **Chimpanzees, gorillas, and humans share a common ancestor** in the late Miocene.
- **Hominin, a bipedal hominoid, appear during the late Miocene.**
- **The Australopithecene genus emerged shortly after the Miocene.**



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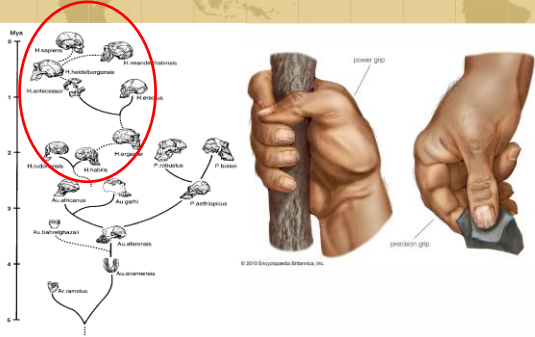
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# C. Primate Evolution



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