

# Primate Taxonomy

## (R. Quinlan)

### *Terms & Concepts*

**Altricial:** referring to an infant born helpless such as humans, chimps etc.

**Analogous traits:** traits in different species that have similar function but different evolutionary history. For example, bird wings and butterfly wings are analogous traits, because they evolved separately and involve different anatomical features.

**Arboreal:** living in trees.

**Bipedal:** standing upright on two feet.

**Brachiation:** a form of locomotion where an animal hangs below tree branches and swings from branch to branch.

**Diurnal:** active in the day light.

**Derived traits:** traits that are considerably altered from their ancestral condition. For example, human feet are derived from apes feet, which are capable of grasping objects. Derived traits are useful in determining the relationship between species.

**Estrus:** a period with observable signs of ovulation often involving swelling of the genital region in primates.

**Fission-fusion social organization:** type of social organization among chimps, bonobos and some human groups in which a large group temporarily splits up in to smaller subgroups for a period of time usually for purposes of foraging.

**Gallery forest:** forest found along a river in a savanna or prairie.

**Infanticide:** killing an infant.

**Inter-birth interval:** the time between the birth of one infant and its next sibling.

**Knuckle walking:** form of *quadrupedal* locomotion in gorillas and chimps in which the fore-limbs support some of the body's weight and the animal walks on its knuckles.

**Linear dominance:** a form of dominance where each individual fits into a clear hierarchy, where "A" dominates "B" and "B" dominates "C" and "C" dominates "D" etc.

**Matrifocal unit:** a social group among bonobos in which an adult female is the central figure usually comprised of an adult female her adult sons and juvenile offspring.

**Multi-male group:** a type of social organization in which multiple males live with multiple females and compete for access to mates.

**Nocturnal:** active at night-time.

**Omnivore:** animal that eats several types of food.

**One male unit (OMU):** a type of social organization with one male and multiple females as the basic unit, sometimes in the context of an hierarchy of social units.

**Polyandry:** mating system where one female has two long-term simultaneous mates.

**Prehensile:** able to grasp. Most primates have prehensile feet. Some New World Monkeys have prehensile tails.

**Primary forest:** mature forest.

**Primitive traits:** traits that retain their original characteristics. Fingernails are a primitive trait in humans because they are a trait helps to define the entire primate order. Almost primates have fingernails, those without them have a *derived trait*.

**Quadrumanual clambering:** a form of locomotion where an animal slowly and deliberately moves from branch to branch by grasping with hands and prehensile feet.

**Quadrupedal:** walking on all four limbs.

**Rhinarium:** wet area at the tip of the nose (like a dog) that aids in smelling things.

**Secondary forest:** forest in the process of growing back after cutting or burning.

**Silver back:** fully mature male gorilla with a gray “saddle” area on his back.

**Stereoscopic vision:** when the visual field of each eye overlaps allowing depth perception. Animals with eyes on the front of their head facing in more or less the same direction (like humans, owls, cats etc.) have stereoscopic vision. Animals with eyes on the sides of their head facing in different direction do not have stereoscopic vision (like rabbits), but they have a much wider visual field (small blind spot) than do animals with stereoscopic vision.

**Taxonomy:** a system of classifying organisms by morphology and genetic relationships.

**Vertical clinging & leaping (VCL):** an *arboreal* form of locomotion involving an upright posture, powerful hind legs and relatively small arms or fore legs. VCL animals leap from tree branch to tree branch. Characteristic of some lemur species.

## Human Classification

Kingdom: Animal

Phylum: Chordates

Class: Mammals

Order: Primates

Family: Hominids

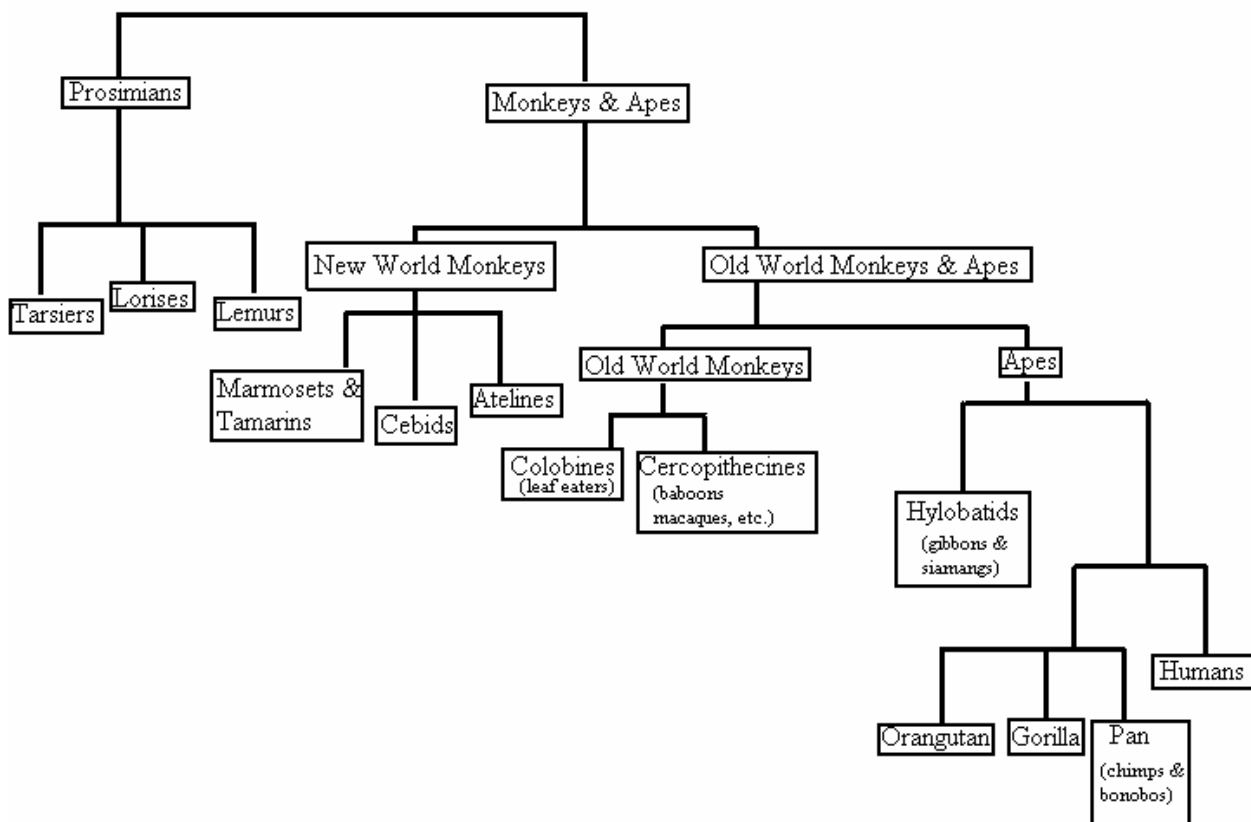
Genus: *Homo*

Species: *sapiens*

## Characteristics of Primates

1. Grasping hand with tactile pads on fingertips
2. Opposable big toe in most species
3. Flat fingernails instead of claws
4. Locomotion usually hind limb dominated with tendency toward upright posture
5. Sense of smell generally reduced compared with other mammals
6. Stereoscopic, color vision – vision most important sense
7. Small litters – usually one offspring at a time
8. Relatively long pregnancy and juvenile development period compare with other mammals
9. Relatively large brain size for body size
10. Unspecialized teeth along with tendency toward omnivorous diet

## Basic Taxonomy of Living Primates



The system of classification presented above is based largely morphology (appearance of the species in each group). However, a system of classification based on genetic relationships would show a different picture. For example genetic analysis shows this relationship among the apes:

