

Free anthropology exam essay example

[Education](#), [University](#)



- Primate brains follow predictable developmental pattern

This Monash University research, originally published in the Journal of Neuroscience by Tristan Chaplin et al., is said to be a breakthrough in the understanding of the evolution of primate brains across all sizes of primate species. In an anatomical context, the research discusses how the disproportionate enlargement of the areas of the human brain necessary for advanced levels of the cognition can be identified as consistent across all sizes of primate species. The researchers found through the use of computer modelling and MRI imaging that those two brain regions - “ the lateral prefrontal cortex and the temporal parietal junction” - feature disproportionate expansion relative to the remainder of the brain. The research suggests that those enlarged brain areas result in behavioral abilities such as the subject to plan long term, to make decisions, to possess self expression capability and to modify behavior, to be aware of self and others, and to facilitate advanced cognitive capabilities.

Some primates share these superior capabilities. For example primate groups such as chimpanzees are known to cooperate when hunting food species and several primate species have been observed using tools (e. g. gorillas, chimpanzees, and others). The adults also teach their young to use tools, too. Because their social groups tend to stay together as multiple generations, the young learn from the old, so learning is an important behavioral trait.

For those already aware of primate characteristics, it has long been known that some human brain areas are larger in comparison with monkey brains, though it had not previously been realised that this trend goes back to the

early days of the primates. The research shows that this selective enlargement of brain areas is predictable - the larger the brain, the greater the specific enlargements become. It is therefore to be expected that some primate behavioral traits are shared with humans. The successful outcome of this research results from the first use of computer-based comparison techniques across a number of primate species.

- Monkey that purrs like a cat is among new species discovered in Amazon rainforest

The newly-discovered monkey described in this World Wildlife Fund article is in the class mammalia, order primates. The family is pitheciidae, and infraclass is the cupreus group, parvorder anthropoidea. It has been assigned the scientific name *Callicebus caquetensis*; common name Caqueta Titi Monkey (*Callicebus caquetensis*, n. d.). The dental formula of all titi monkeys is 2. 1. 3. 3/2. 1. 3. 3, (36 teeth total), where the numbers (in groups for one side of the upper and lower sets respectively) are in the sequence: incisors, canines, premolars, and molars. The canines of titi monkeys are relatively short and their molars are fairly simple. Like other New World monkeys, they have broad noses and characteristic outward-facing nostrils.

- Fruit loving lemurs score higher on spatial memory tests

The lemurs described in this Duke University study have different dietary profiles; the black-and-white ruffed lemur is frugivorous, whereas the ring-tailed and mongoose lemurs are omnivorous. Studies found that the red-ruffed lemurs are able to memorize food locations, giving them an advantage over other species. The feeding strategy used by the red-ruffed lemurs is the scramble competition type, because the fruit they mostly feed on is not

widely available all the year round and not in different locations at the same time. Therefore any individual group has to find the sources of food before other groups do. However, because they range widely, and therefore move out of call range from other groups, direct competition between groups or subgroups when they find a plentiful source is minimized.

- “ When in Rome”: Monkeys found to conform to social norms

In this University of St. Andrews article, the females of the studied velvet monkeys were found to be the most philopatric, maintaining close bonds and behaviors to their original family groupings, whereas the males were seen if migrating to a new group to adapt quickly to the local norms pertaining “ whether it made sense to them or not.” By adapting their dietary choice to that of their new group, the migratory males more readily gained acceptance into the group. However, in the studies, the one individual male who was an exception to this adaptive behavior soon became top of that new group. By refusing to adapt his diet to the local norm, he was demonstrating individuality and superiority to the others, who were slavishly adopting a submissive mode of behaviour by copying their new group members.

- Oldest evidence of split between Old World monkeys and apes: Primate fossils are 25 million years old

This Ohio University article relates how geological analyses of the Tanzanian Rukwa Rift Basin sites where they were found enabled palaeontologists to date the fossils of *Rukwapithecus fleaglei* and *Nsungwepithecus gunnelli*. The particular location of the site made it possible to achieve the dating, because datable materials were preserved there, including these fossils and “ multiple minerals contained within the rocks.”

The “ long-standing disagreement” referred to in the article concerns the discrepancy between estimates obtained by analysing the DNA of living primates, and other datings derived from primate fossil records available. The other method that suggested this dating result was by testing “ clock-like mutations” of primate DNA specimens, which had suggested the divergence between the apes and the “ Old World” monkeys happened somewhere between 25 and 30 million years ago.

According to the article, *Rukwapithecus fleaglei* is an early hominoid, the group that includes today’s apes and the human race. In contrast, *Nsungwepithecus gunnelli* is an early cercopithecoid, the group that includes what are referred to as “ Old World” monkeys, which in turn includes macaques and baboons. Essential anatomical differences between the two groups include the teeth (“ Infraorder Catarrhine (Old World Monkeys)”). In the cercopithecoidae the canine teeth are larger and sharp, with a distinct gap between the canines and the incisors, and the upper canine teeth are maintained in a sharpened state by being rubbed against the first premolar in the bottom set. Also, the cercopithecoid molars have just two cusps (bilophodont), whereas those of the hominoids have several.

Other differences include:

- Compared to hominoids, cercopithecoid heads feature a narrower nose and palate, and their brains are smaller relative to the size of the body.
- Hominoids have no tail, whereas cercopithecoids do, (often quite long).
- Cercopithecoids tend to be compressed side-to-side, with a narrower thorax and pelvic region, as well as a long trunk, unlike hominoids such as the gorilla which has a broad chest.

- In cercopithecoids, their back legs are normally as long as (or longer) than the front legs. Hominoids have arms (“ front legs”) that are longer than their legs (“ back legs”).

Works Cited:

“ Callicebus caquetensis.” (n. d.). International Union for Conservation of Nature and Natural Resources. Accessed 26 February 2014. .

Duke University. “ Fruit-loving lemurs score higher on spatial memory tests.” Science Daily. 21 February 2014. Accessed 26 February 2014. .

Monash University. “ Primate brains follow predictable developmental pattern.” Science Daily. 8 October 2013. Accessed 26 February 2014. .

Ohio University. “ Oldest evidence of split between Old World monkeys and apes: Primate fossils are 25 million years old.” Science Daily. 15 May 2013. Accessed 26 February 2014. .

World Wildlife Fund. “ Monkey that purrs like a cat is among new species discovered in Amazon rainforest.” Science Daily. 25 October 2013. Accessed 26 February 2014. .