

In the course of joining together the Departments of Anthropology and Classical Studies at the University of Waterloo a number of people have asked me what the connection is between the two fields. Many areas of research are of mutual interest such as archaeological excavations, material culture, agriculture, trade, warfare and social organization. One field which does not cross over extensively however, is primate studies. Some mention is made of monkeys in classical art and literature, but mainly from viewpoint of their understanding of the natural world. Primates have a much more central focus to Anthropology, however, because we humans are primates and our evolutionary past arises from our primate heritage.

Anthropologists in general are focused on the human condition, past, present and future. In order to save ourselves from serious navel-gazing we try to envision the world from many viewpoints, biological, cultural, genetic, economic, political, historical, technological, religious, and evolutionary to name only a few. Where did we come from? Why are we as we are now in all our myriad diversity and where are we going?

Primate studies bear on both our evolutionary past and our understanding of ourselves in the present. Human forms arose from non-human ancestors. About 5 to 7 million years ago we shared an ancestral form with the common chimpanzee. Genetically we are more closely related to chimpanzees than are Asian elephants to African elephants. Many changes have occurred to us in the last 5 million years to make us human but for the previous 60 million our ancestry is that of the other primates. We are one of about 240 species of primate currently living on this planet, although a number of those species are perilously close to extinction. Part of the tragedy of this fact is that new primate species are still being discovered. There have been 3 such discoveries in the last 10 years and at the rate that rainforest is being burned up, chopped down and exploited for our benefit some species may disappear without ever being recognized.

Why is this a problem? It has to do with the fact that these \pm 240 species demonstrate a wide variety of ways for primates to live. We humans often have very rigid views on what is right or best for human social organization. We may think that we are the pinnacle of the animal world because we have nuclear families, or are monogamous, or show altruism

and compassion, reconcile our differences without violence (sometimes) and socially frown on incest. But all of these behavioural choices have been made by primates before us. Gibbons and siamangs are much more truly monogamous mates than many humans. Yet their lifeway and success is not superior to the multi-male multi-female breeding units of baboons and langurs, or to the single male-multifemale units of gorillas and blue monkeys or to the solitary, meet you, breed you, leave you social pattern of galagos and orangutans. It is just different, adapted to the environment they live in and their evolutionary past. Thus why should humans value one mating system over another?

Anthropologists recognize many forms of social pairing; one male polygamy, joint marriages, one female to several husbands, life long monogamy, serial monogamy and what is called promiscuity, which merely means opportunistic mating. What is important out of this is that social viability arises from the acceptance of this variety of mating patterns in the community. If parents and children are not stigmatized by social norms then their economic and developmental potential will not be as seriously jeopardized due to difficulty in getting jobs, housing and social acceptance. However, all human societies have social norms and only some of these primate options are acceptable in any society. What Anthropologists want to know is how the mating pattern, social level (band tribe, chiefdom, state etc.), economic possibilities, religious strictures and class structure (where it exists) balance each other to form a workable system that allows a reasonable level of choice for its members.

Most primate mothers bear the major brunt of caring for offspring. Because their resource base of food is usually quite limited, in most cases half their young die before maturity because they cannot compete successfully for food after their mother's attention is taken up by another baby. We as humans would rather not lose so many children, so we have to organize our reproductive and economic cycles to maximize our reproductive fitness. In fact, in western society in general, we have taken the ape pattern of reduced numbers of young and long periods of childhood care to extremes. Many families have 3 or fewer offspring and economic resources are lavished on their care and socialization for nearly 20 years. Admittedly in some countries the birth rate per mother is still 6 or 8 children but with the development of medical care this level of reproduction is doubling those countries' populations in under 25 years. A quick look at carrying capacities of any resource base will reveal that this level of reproduction cannot go unchecked for long. An excellent example occurred in some island populations of Japanese macaques who

had been reproducing at a rate of one baby per year per female under heavily subsidized feeding. When this feeding was removed the rate of population growth plummeted. The only females who were able to raise their young successfully were members of the highest ranking matriline because they were able to eat enough and protect their youngsters' access to food. None of the other females could maintain enough milk to feed their babies who then starved. If we humans do not want to engender a serious revolution in terms of access to resources we could learn from this example not to raise our population past the natural carrying capacity of the environment.

In addition to these biological comparisons we can also look to our primate cousins for social examples. Even though competition is considered to be the mainspring of animal interaction, many group living animals cooperate with each other in times of need. When an alarm call indicates the presence of a lion all the baboons run for the trees grabbing up any infants they pass on the way and sort out who belongs to whom later. Patas monkey males from different groups have been seen to gang up on a jackal who had seized a baby patas and harass it into releasing the infant. In less dangerous circumstances some young females will care for an infant which allows the mother time to rest and get a drink of water. This 'aunt' behaviour is quite common in some groups and shares the burden of 24 hour a day carrying and care. In groups with monogamous pairs the male parent will often undertake extensive baby carrying and some grooming and play with the infant.

All of these are learned behaviours. Primates who are raised in isolation from their kind will not alarm bark to warn others, carry infants to safety or be gentle enough with infants to be allowed access to them. These behaviours benefit the giver as well as the recipient because tomorrow someone else may return the deed (reciprocal altruism).

Intensive current study of primates has revealed considerable sophistication in their social interactions so that researchers now recognize some of the subtleties of communication which reveal how many disputes are settled with facial gestures rather than fights. Even if fights do occur, often another animal will intervene and stop the altercation before serious damage occurs. Subtlety in social behaviour is also revealed in mating patterns since mothers very rarely breed with their sons, or brothers with sisters. In part, this has to do with migration patterns in which either young males or young females, depending on the species, tend to migrate out of their social groups as they become sexually mature. However, in

colony reared animals who have no place to go, sexual interactions between such close relations are less frequent than one in a thousand matings. Even non related animals who have grown up as siblings do not generally mate unless there is no alternative. That this is a social rather than biological aversion is demonstrated by the fact that males will mate with their daughters in multi-male groups where the paternity is unclear except to the researcher with biochemical means to check which of several males is actually the sire. In these cases the males are not usually part of the parenting experience and thus there is no social aversion between them. In the wild, this type of mating is not common because males often move on to another group after about 5 years, which reduces the probability of inbreeding.

These examples indicate the many areas in which study of primates can illuminate our understanding of the foundations of human behaviour. Primates are our evolutionary past and we have retained many aspects of their behaviour. Their importance lies in their modeling of many ways in which social organization and environment combine to provide a rich variety of choices that underlie human flexibility. We humans are as successful as we are because of our adaptability to a wide range of milieus in which to make a living. Primates would have understood life in the classical world (except for warfare and slavery - two human inventions) and it is up to us to understand them in their world.



Prof. Anne Zeller and friends