

Letter From the Desk of David Challinor
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Of all household animals, cats seem to engender the strongest division between their supporters and their detractors, who favor dogs for companionship. I wrote about dog domestication in my April 1999 letter, and it seems only fair that I should do the same for cats. However, I should admit that I am in the dog camp, but nonetheless will try to control my bias.

Unlike dogs, whose appearance has diverged so much from wolves that they are now considered a separate species (*Canis familiaris*), cats have retained the general appearance of their wild progenitors and are still included in the same genus and species (*Felis sylvestris*). The Eurasian wildcat with its various subspecies still lives in most of Europe, as far east as the Caucasus, and into Africa and Arabia. Most experts consider the domestic cat to be descended directly from the North African subspecies (*F. sylvestris libyca*), which in ancient Egypt had a religious identity. From about 1,500 to 1,000 B.C., the cult of the cat-headed goddess, Bast, flourished there. Large numbers of cats were indeed mummified and buried with their owners. Bast was originally the goddess of the home and had a large popular following, so great in fact that the cult spread to Rome where her effigies have turned up in excavations as far south as Pompeii. Graphic depictions of cats with humans appeared as far back as 7,000 B.C., several millennia after dogs became part of households. These early images were undoubtedly of cats caught as wild kittens and subsequently tamed. True domestication, where cat breeding was controlled by humans, probably did not occur until the third millennium B.C., and from then sporadically until the cat cult expanded the effort.

One reason that it might have taken so long to domesticate the cat compared with the dog is that cats, certainly most small ones, are generally solitary. Prides of lions and cohorts of male cheetahs are the exceptional cats that live in social groups. The cats' lack of social cohesiveness, not prevalent among canids, means that they generally do not adapt naturally to the dominant hierarchy maintained by dog owners over their pets. For many people this very independent characteristic is what makes them more appealing than dogs. In comparing cats and dogs, many differences become immediately apparent.

In both animals, males and females generally look alike, except for the maned male lion. In both the male is generally slightly larger than the female. Dogs cool off by panting and do not have sweat glands, whereas cats have well-developed ones between their toe pads and sole pads as well as on their lips and chin. Cat teeth are designed for meat eating, whereas dogs have broad-crowned molars which allow them to chew vegetable matter. Not only are the front teeth of cats designed for scraping meat from bones, but the tongue is covered with small, sharp, horn-like rearfacing projections which let them lick every last bit of meat from a bone. Unlike dogs, cats have retractable claws, which enable them to climb trees. Dogs rely on scent much more than cats, but the latter have better directional hearing. Cats are thought to see in color as sharply as humans, and even better than we do in light of short wave lengths, and their pupils are designed for nocturnal vision; dogs see no color at all. Finally, cats are more easily housebroken than dogs and can be trained to defecate in a box. This is doubtless an adaptation to their

behavior as solitary hunters where it is necessary to conceal their feces from being identified by potential prey.

The differences between cats and dogs described above are the most obvious ones, but there are myriad others.

The independent character of cats makes it hard to keep their populations under control. Even pampered female house cats, when they come in estrus, can generally succeed in escaping their quarters to find a mate. I have a clear childhood memory of the sound of caterwauling made by receptive females on the backyard fence of our brownstone house in New York City. This unearthly noise has been noted for a long time; the word describing it goes back to the Middle English word “caterwawen.” The appeal of kittens is very strong to all but the most hardhearted, thereby increasing their survival, which sadly often leads to an overabundance of breeding adults. I imagine that only a relatively small percentage of cats are spayed, as this procedure takes time and money.

Those who have visited the Coliseum in Rome must remember the plethora of stray cats and the many people who come to feed them. On the front page of The Washington Post (1 June 1999) there was a headline, “No Reprieve In Sight for Prison Pets -- Cats Must Leave As Lorton Closes.” There followed a lengthy account of the problem of finding homes for the 500 or more cats that roam the 3,200-acre prison complex. Lorton is one of the few prisons that has allowed pets for the past 30 years, and they clearly filled an important role for the human prison population. Now the problem will be to trap as many cats as possible, have them neutered, and find them new homes. Dedicated volunteers have already started the process.

Humans in the “dog camp” tend to look on cats as predators of small birds, chipmunks, and baby rabbits. That they also catch a lot of mice and occasionally rats is often forgotten. In fact, one old-time guard at Lorton commented that with the cats present, the prison had no rodent problem. The independence of cats causes them to act as if the house or prison in which they live is merely part of their territory and the human keeper is simply another territorial occupant. Many male cats may accept a human as a substitute kitten, and indeed those kittens weaned too soon may expect maternal grooming by humans. Their pleasure at being stroked is frequently acknowledged by purring. Among domestic cats, some extraordinary attachments are sometimes made, not only to humans who have an aversion to cats, but to such unexpected animals as individual dogs, rabbits, hamsters and even rats and mice. Usually this socializing behavior has to be instilled in cats when they are young, but there may be individual cats that behave this way on their own.

It seems that the house cat was one of the few domestic animals that were brought initially into people’s houses for religious, rather than useful, purposes. Later on they must have been used for rodent control, but originally they were considered sacred animals. Even today a black cat crossing your path is considered bad luck, a calico cat in the house protects it from fire, and black cats are still associated with witches and Halloween.

Despite their long association with humans, cats follow fairly rigid behavior patterns. Dog lovers often accuse cats of being wanton killers, but this is an unfair charge. Some years ago Paul Leyhausen, a well-known student of animal behavior, presented cats with a sequence of live mice. Initially the cat caught, killed and ate each mouse. When the cat was full, it stopped eating the mice it had killed. When presented with additional mice, the cat would stalk it and catch it, but not kill it; eventually the cat reached the point where it would only stalk the mouse, but not bother to catch it. Such behavior illustrates the priorities of a small, wild cat; it either lies in wait for its prey or carefully stalks it. We know how few stalks are successful so, from the cat's perspective, when a prey animal is caught, it better be eaten. Once satiated, the stimulus for action reverses order and the cat stops killing, then stops catching, then even stops stalking. The cat, therefore, is merely responding to its internal priorities. It is hardwired to stalk, catch, kill, and eat its prey. This genetic programming in cats results in many mice being caught and eaten, but unfortunately songbirds and chipmunks as well.

There have even been studies on the number of wildlife killed in a given community by cats and they are impressive. Dogs are not immune to killing wildlife, especially pregnant does and often sheep, which are subject to assault. Even house dogs will form a hunting pack. A house cat consuming a wild bird or mouse completes the life cycle of the protozoan, Toxoplasma gondii, to which primates (including humans) and marsupials are particularly vulnerable. The protozoan, when it overwhelms a person's immune system, attacks the brain, retina, and/or lymph nodes. It can also cross the placenta, which is why pregnant women are discouraged from having cats in the house even though only those that eat wild mice or birds would be of danger to their owners. Zoos, however, must be particularly careful not to have stray cats on the grounds, which explains why the Zoo has so many chipmunks around. (For further discussion of toxoplasmosis, see my letter of December 1995.) I should point out that dogs carry not only pinworms, which frequently infect children (including my own), but also tapeworms, whose exposure in humans can lead to brain cysts.

Much can be learned about human nature by careful observation of mankind's interaction with pets. In the western world, dogs and cats are preferred, and they often fill a valuable role in improving the wellbeing of the solitary elderly. I am sure we have all seen examples where a pet dog seems to have acquired many of the subtle characteristics of its human companion. Such a bond is clearly evident and can even be seen in such diverse pets as snakes, canaries and goldfish. The diversity of pets merely reflects that of their human "owners," and I believe we are all better people when we share our daily lives with other creatures.

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