

Companion of man

Dogs have been part of the human situation for longer than any other domesticated creatures. Moreover, dogs, as any owner will tell you, are not merely domesticated creatures but real companions able to communicate with their owners in subtle fashion, using sophisticated social skills. In a series of research reports published in *Science* for 22 November 2002 some aspects of this relationship are explored in great detail.

It is acknowledged that theories regarding the origin of our dogs cover a wide range of opinions and have given rise to much controversy among those who fancy that they are dog experts. There is general agreement that dogs evolved from wolves long ago, and that within limits it is still possible to develop a working human-wolf relationship. At the end of the Pleistocene era the wolf was to be encountered in its wild state from Ireland to Spain, through Europe and Siberia as far as Japan in the far east. Moreover, wolves were present in the Indian subcontinent and in North and Central America.

A few students argue that dogs arose from a species of jackal or some hybrid canid. Some believe that the domestication of dogs occurred more than once from more than one ancient canid species, an argument used to explain the wide diversity seen today in breeds of dogs, from chihuahuas to great danes. Most agree that domestication occurred from humans raising wolf pups or taming older wolves and then selecting the more docile individuals for breeding purposes.

It is argued that wild wolves adopted the habit of scavenging food scraps from their human neighbours, and so became bolder and less intimidated in the presence of man, eventually parting company with the rest of the pack. How long ago this happened is not known. Skeletal remains of dogs have been discovered in deposits 14,000 years old in central Europe. Some scientists have claimed that Italy was the first home of the dog, on the strength of DNA studies which show that some ancient wolf and dog bones there indicate a genetic pattern resembling that of modern dogs. And in Israel, human remains 12,000 years old have been associated with bones of small canids.

Scientists at the University of California in 1997 studied the mitochondrial genomes of 140 dogs of different breeds, together

with 162 wolves, 12 jackals and five coyotes, and concluded that the wolves approximated most nearly to the dogs. Another piece of research, in Stockholm, studied DNA from 426 dogs from different countries, together with a group of 100 from China and one of 38 wolves from Europe and Asia. Although several genetically related groups could be distinguished, there was overall evidence that most breeds of dogs derived from East Asia, most probably China. It is suggested that early humans crossed the Bering Strait some 10,000 to 15,000 years ago, accompanied by their domesticated dogs. By so doing they introduced dogs into the New World.



Dire Wolf from Pleistocene era

Another aspect of the man-dog interaction is also presented in *Science*. Anthropologists at Harvard have demonstrated a special cognitive skill that dogs have developed during their domestication, which is quite different from that associated with other pets. Dogs have more skill than great apes in reading communicative signals provided by their owners, particularly related to the location of hidden food, and following human directions. Curiously enough, wolves raised from cubs by humans do not show such skills, although domestic dog puppies only a few weeks old do, even in situations where they have enjoyed little previous contact with humans. Small wonder that, in comparison with other pets which may be enjoyed by their owners, dogs come into quite a distinct category of their own, as friends and companions in life.

Sober reflection

With what shrift and pains we came into the World we remember not; but 'tis commonly found no easy matter to get out of it. Many have studied to exasperate the ways of Death, but fewer hours have been spent to soften the necessity. — Sir Thomas Browne ('Christian morals', 1672).

Intelligence and life

Intelligence, according to philosophers, enables one to cope with whatever may crop up in the shape of unexpected challenges. In intelligent people, memory and the capacity to grasp relationships between things and events help in solving problems with speed and originality. Different schools of thought regard intelligence as genetically determined or as the total product of social, cultural and educational factors. The truth is probably that both these major influences contribute to the picture.

Science for 10 January reports that in December 2002 a meeting of psychologists, cognitive scientists and psychometricians in Nashville, Tennessee, discussed the practical benefits of general intelligence. Despite the claim of applied psychologists that the intelligence quotient (IQ) test has proved a great success in measuring intelligence in terms of everyday living, it is often criticised as measuring merely the ability to pass tests of a circumscribed nature. Attempts have been made to devise better tests to assess creative ability and practical interactions, but no effective alternative for assessing ability at school and at work has yet emerged.

IQ tests, claim the psychometricians, measure the "general intelligence factor", designated "g", which means the ability to manipulate information that underlies learning and problem solving. Some psychologists maintain that the factor relates only to academic skills and not to daily living problems, although others argue that it determines both school and ordinary day-to-day achievements. After all, learning, reasoning and problem solving are relevant in all spheres of life.

The area of "health literacy" has been researched. In one study more than 40 per cent could not understand directions relating to taking a medicine on an empty stomach, and 60 per cent failed to understand a basic consent form. Such failings involve higher health costs, poorer health and more frequent admission to hospital. Moreover, those who score poorly in IQ tests tend to have more accidents than others. In studies in Texas, school children without signs of depression, delinquency or academic failure showed the highest IQ scores at the ages of 8 or 9.

Longevity, too, seems to be connected with IQ. In research in Edinburgh involving a group of 80-year old people for whom IQ records made during childhood were available, the highest scores related to health, longevity and general physical and mental capacity during advancing age. The connection is believed to be that those with a high IQ are able to avoid errors of daily living. And an Australian study in people younger than 40 found that deaths from motoring accidents ranged from about 50 per 10,000 for those whose IQ was 100 or more to nearly three times this figure if the IQ was around 80 — presumably another example of the ability of the intelligent to foresee complications and deal with them.