**Schleidt, W. M. 1998 Is humaneness canine? Human Ethology Bulletin 13(4):1-4.**

In recent years, various fields of science-- neurobiology, sociobiology, behavioral ecology and game theory, to name but a few--have opened new vistas on human origins and on the question of what makes humans such special animals. Much attention has been focused on the importance of brain, kinship, competition, and evolutionary stable strategies. Even Machiavellian intelligence has been accepted as an old primate heritage1. Given this new scientific wisdom one may wonder how traits of humaneness--true altruism, idealism or human kindness--could have evolved and become a recurrent phenomenon in various human populations.

How could some clever but rather beastly Anatomically Modern Humans (AMHs) have turned toward humaneness? How could AMHs have invented forms of cooperation, communication, society culminating in individual sacrifice unrivaled by any other mammal? AMH is the only primate that has evolved the capacity for "true friendship": loyalty beyond kinship. Konrad Lorenz once stated very bluntly: "of all creatures the one nearest to man in the fineness of its perceptions and in its capacity to render true friendship is a bitch."2

There is something in the bond among wolves and dogs and humans that can reach beyond what even our closest primate relatives, chimpanzees, do. I am NOT talking about brain power now, but about what we poetically associate with "kindness of heart." Jane Goodall, commenting on Konrad Lorenz´s statement, writes:

"Dogs have been domesticated for a very long time. They have descended from wolves who were pack animals. They survive as a result of teamwork. They hunt together, den together, raise pups together. This ancient social order has been helpful in the domestication of the dog.

Chimpanzees are individualists. They are boistrous and volatile in the wild. They are always on the look-out for opportunities to get the better of each other. They are not pack animals.

If you watch wolves within a pack, nuzzling each other, wagging their tails in greeting, licking and protecting the pups, you see all the characteristics we love in dogs, including loyalty. If you watch wild chimps, you see the love between mother and child, and the bonds between siblings. Other relationships tend to be opportunistic. And even between family members disputes often arise that may even lead to fights.

. . . even after hundreds of years of selective breeding, it would be hard if not impossible to produce a chimpanzee who could live with humans and have anything like such a good relationship as we have with our dogs. It is not related to intelligence, but the desire to help, to be obedient, to gain our approval."3

Dogs have indeed been domesticated for a very long time. There is general agreement that dogs were the first domesticated animal, coming under human control several thousand years before any of the hooved animals. The fossil record of dogs reaches back as far as 14.000 years4, long before the agricultural revolution. This evidence supports the hypotheses of "man the hunter" and of the dog as early hunting companion. Compare this date with the results of the analysis of mitochondrial

DNA (mtDNA) of dogs, wolves and jackals5. These recent findings indicate that the split between the ancestors of wolves and jackals reaches back one million years before present (MyBP).6 The analysis of mtDNA of 67 breeds of dogs shows a high degree of similarity to wolves (as represented by 27 populations from Europe, Asia and North America), clearly supporting the hypothesis that wolves were the ancestors of domestic dogs. But most unexpectedly, this study shows that the first split between the ancestors of wolves and dogs dates back more than 100.000 yBP, ten times further back than indicated by the osteological evidence; also, dogs are most closely related to wolves from Europe5. Thus, dogs came into being apparently just around the time and the place when and where AMHs started to spread into Eurasia7.

We now face an amazing temporal and geographical coincidence between the emergence of mankind and dogkind, between hominization and canisization. Reconsideration of past and current concepts of domestication has become unescapable. Even the term "domestication" sounds now absurd, since the meeting of wolves and AMHs predates by far anything that could be considered a human habitation in the form of a "domus". Canids´ use of dens dates back much further; we may instead want to talk about "cubilication"8 and wonder who cubilicated whom.
From a biologist´s vantage point we can view the intertwining process of hominization and canisization as one of coevolution. However, while the evolution of man and our primate heritage have attracted much attention ever since the publication of Darwin´s The Descent of Man, the evolution of wolves and dogs has remained a topic for specialist and, to the best of my knowledge, not integrated iito the

descendence of AMH.

In brief, canids originated on the North American continent as fox-like creatures hunting small prey (rodents, insects) but with a tendency toward opportunistic omnivory. They probably first developed social skills in the sense of pack formation in the context of pursuing larger prey, possibly small horses. Roughly 10 MyBP ago, jackal-wolf-sized canids moved into Asia and exploded into several species of wolf-sized predators in a process of "adaptive radiation" that reached into Europe9 and even Africa (sole survivors: the African wild dog and some wolf-sized jackals). A comparison of the different hunting methods of mammalian predators leaves little doubt that the decisive advantage of these big canids lies in pack formation, i.e., specific forms of cooperation and risk-sharing among individuals not closely related, in the form of long-lasting pair bonds as well as friendships among individuals of same gender.

Reindeer, travelling seasonally in vast herds in the realm between Spain and Eastern Siberia, could well have coevolved with wolves in the sense that prey and predator became interdependent, symbiotic, as we know this for example from aphids and ants. In some Siberian reindeer herds now interdependent with AMH, wolves following these herds are not only tolerated by their human "owners" of these herds, but also considered to contribute to the breeding of better reindeer. Wolves take only the surplus unused by the herd owners (placentas on the calving grounds, weaklings and the aged), because humans select the best for their slaugter! The behaviours used by wolves to get their share of the herd are basically the same that can still be observed today in the grey wolf, and

behavioral subprograms have been retained in todays herding dogs. F. E. Zeuner was among the first to discuss these features of wolves and dogs and to suggest the wolves to act like "pastoralists".10 Thus, among mammals, the wolf can be viewed as the first true pastoralist, ahead of AMH by Millions of years (though predated by social insects, e.g., by ants as "pastoralists" of aphids). Wolves´ ability to hunt as packs, to share risk fairly among members and to cooperate, unrivaled by any of the big cats, moved wolves to the top of the food pyramid of the Eurasian plains.

How did early AMHs enter into this specialized Eurasian ecosystem and ultimately surplant the wolves at the top? With superior cognitive capacity and foresight (reflected especially in their scouting and scavenging skill), ability to manually hit a distant target, and an eye level double that of wolves, a family of AMH could ease its way into a thriving business of pastoralist wolves as junior partners and share the plenty without raising the level of intrapack social friction.

Today, AMH sits atop the food pyramid of the world, reindeer are nearly gone, and of all the mammalian species roaming Eurasia one MyBP ago, wolves were most successful in increasing their numbers (as dogs), most likely followed by the aurochs (now represented by our cattle). In fact, wolves have conquered Africa (e.g. as the Basengij), and "used" AMH as a vector to get into Australia (Dingo), Polynesia, and even Antarctica.

I do not mean to suggest that an early encounter of humans with wolf pastoralism was an obligatory stage for all AMHs. Once a few of our ancestors had learned to live with dogs and adopt their pack algorithm ("go beyond the close ties of kinship, learn to practice

close cooperation and fine-tune risk sharing") many alternative ways to make a living became available.Within this process of coevolution technology transfer and diversification began to thrive. AMH could become better gatherers, better hunters, more successful fishers, mammoth hunters, gardeners, astronauts, you name it. Wolves could become hunting companions, food, guards, hotwaterbottles, etc. And, let us not forget the symmetry of coevolution. Remember the pioneering spirit and self sacrifice of wolves: the first Russian astronauts were martyr dogs.

Wolves meeting humans in a phase of human´s apprenticeship to wolf pastoralism and, in a subsequent process of coevolution, wolves turning into dogs and apes into AMH, is a good alternative hypothesis to the current theories of domestication--man conquering beasts, including wolves, through cognitive superiority--and to the bootstrapping theory of hominization--man domesticating himself.

Homo homini lupus? Or, closer to the biological evidence: homo homini pithecus -lupus homini homo?

Wolfgang M. Schleidt11 is in the Department of Human Biology, University of Vienna, Vienna, Austria. Email: wolfgang.schleidt@univie.ac.at

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1. e.g., Dunbar, R. Grooming, Gossip and the Evolution of Language. (Faber & Faber, London, 1996).
2. Lorenz, K. Z. Man Meets Dog. (Methuen, London, 1954).
3. Goodall, J. (Personal communication: Fax dated 25 September 1997).
4. Clutton-Brook , J. in: The Domestic Dog. (Serpel, J., ed., Cambridge University Press, Cambridge, 1995), pp. 7-20.
5. Vilà, C, Savolainen, P. & Wayne, R. K. Science 276, 1687-1689 (1997).
6. Not withstanding the fact that the North American red wolf, now on the endangered species list, was found to be a stable hybrid of the grey wolf and the coyote: Wayne, R.

K. & Jenks, S. M. Nature 351, 565-568 (1991)
7. Foley, R. in: Hunters and gatherers 1 - History, evolution and social change. (Ingold, T., Riches, D. & Woodburn, J. eds., Berg, Oxford 1988), pp. 207-221.
8. Latin cubilicus: the helper on the wolves´ den, akin to cubile: den, lair, bed (the same Latin root as in concubine), and constructe according to domesticus, the servant around the house (domus).
9. Rook, L. & Torre, D. N. Jb. Geol. Paläont. Mh. H5, 495-501 (1996).
10. "the wolf and the pastoralists might be seen to have much in common" (Zeuner, F. E. A history of domesticated animals..Harper & Row, New York/ Evanston, 1963). p. 124).
Tim Ingold (1980) dismissed such ideas because of three critical differences between exploitation of herds by human pastoralists and by wolves: a) humans protect their herds from wolves, wolves do not protect from humans. b) humans select intentionally, wolves unintentionally. c) the impact of human selection on different age and sex classes in the herd is quite different from that of wolves. (Ingold, T. Hunters, pastoralists and ranchers. Reindeer economics and their transformations. Cambridge University Press, Cambridge: 1980). This critique may fit Ingold´s view of pastoralism at that time, but does not touch on my hypothesis of coevolution of wolves, reindeers and humans.

In reference to the common claim "humans select intentionally" we should recall from applied animal husbandry not only that in old Greek and Roman culture the most beautiful and best individuals were selected for sacrifcial offerings but that still during this century most valuable breeding stock was sold into the cities for milking or straight to the slaughter house (e.g.: Sambraus, H. H. 1994 Gefährdete Nutztierrassen. Stuttgart: Verlag Eugen Ulmer., (pp. 225, 233, 234).

11. Special thanks for discussing these ideas to J. Goodall, D.W. Gracey, J. Eisenberg, J.Fentress, T. Ingold, M. Itzkowitz, H. Kummer, L.D. Mech, E. Oeser, W. Poduschka, H.H. Sambraus, M. Shalter, L. Rook, C. Vilà, P. Weber & Ch. Wemmer.