

Altruism and Cooperation were in the Phyletic Roots of Humans

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ABSTRACT

That altruism and cooperation among humans have their roots in their phylogeny which has been inferred from the fact that chimpanzees, the closest living relatives of modern humans, show cooperation and altruism in their behaviour. Moreover primitive hunter-gatherer tribes among humans also show altruism and cooperation in their primitive social networking.

Key words: Altruism, Phylogeny, Modern humans, Chimpanzee, Evolution

Chimpanzees are the closest living relations of the modern man (*Homo sapiens*). There is 98.4% similarity in the genetic make-up of humans and chimps (Jewell, 2012). Modern humans and chimpanzees represent almost sister lineages in primate phylogeny (Nesturkh 1958). Naturally notable behavioural parallels may be made out among chimpanzees and humans (Verma, 2012)

Chimpanzees show altruism and cooperation in their behaviour. Melis et al. (2011) have made experimental observations on food sharing among captive chimps. They have noted that there is cooperative sharing of food among the chimps, but dominant individuals take a larger share than the ‘subordinates’. What is further notable among the observations of these authors is that being a collaborator in food acquisition brings no advantage to the ‘subordinates’ in the food sharing pattern.

Chimp populations also show territoriality, and interterritorial war-like situations may develop (de Waal, 2011). de Waal (*loc. cit.*) also points out that, besides hostility chimps show also friendly behaviour. This author points out further that in 1975, when William McGraw and Caroline Tutin visited Mahale, they observed that chimps frequently got engaged in hand-clasping, and also grooming each other’s armpits with their free hands.

As among humans, chimp populations, living in different areas, show cultural differences. Gruber et al. (2009) have noted that Kibale forest chimps use sticks to get honey “trapped within a fallen log”, but Budongo forest chimps use “sponges”, made by pressing together leaves, for this purpose.

As has been pointed out above, an interterritorial war-like situation may come up between chimp populations, occupying neighbouring territories. A war may be defined as an organized group clashing with another such group. Each warring group shows cooperation among its members for defending their territorial integrity.

Fruteau et al. (2011) have noted reciprocal grooming sessions among females of two primates, *Cercocebus atys* and *Chlorocebus aethiops*. Adult females of these species often groomed each other in pairs, but a 'subordinate' groomed for a longer period than the dominant partner.

As has been noted above, among chimps also there is a behavioural difference between 'subordinates' and 'dominants'. It seems that we have inherited from our primate ancestors not only reciprocity and cooperation, but also the difference of 'subordinates' and 'dominants'.

Humans have the capacity to make out what is going on in the mind of a fellow human. Chimps have a similar capacity. Crockford et al. (2012) have done an alarm-call-based field experiment with chimps. They have noted that a chimp sounded an alarm on seeing a snake, if it has observed that a fellow chimp was not aware of the presence of a snake, but did not do so if the other chimp, as it appeared from its facial expression, was already aware of the snake's presence.

The notion, that altruism and cooperation were in the phyletic roots of humans, finds support also from studies on primitive hunter-gatherer human tribes. Apicella et al. (2012) have studied a population of Hadza, a hunter-gatherer tribe in Tanzania. They have noted that in the tribe there were networks in their social structure, as in a well settled modern human population, and also cooperation in their population, both among siblings as well as among non-siblings.

Pennisi (2009) has cited a view of James Hunt, according to whom in a group living species, a group, and not an individual, becomes a reproductive unit and a target of selection. Obviously a well knit cooperative compact group gets positively selected.

Concluding remark:

Altruism and cooperation among humans, inherited through phyletic roots, are almost instinctive proclivities, which often become clouded by greedy materialism, and we then behave differently.

REFERENCES

Apicella CL, Marlowe FW, Fowler JH and Christakis NA. 2012. Social networks and cooperation in hunter-gatherers. *Nature*, 481: 497 – 501.

Crockford C, Wittig RM, Mundry R, and Zuberbuhler K. 2012. Wild chimpanzees inform ignorant group members of danger. *Current Biology*, 22(2): 142 – 146.

de Waal, FBM. 2011. Toshisada Nishida (1941 – 2011): Chimpanzee rapport. *PLoS Biology*, 9(10): e1001185.

Fruteau C, Lemoine S, Hellard E, van Damme E, and Noe R. 2011. When females trade grooming for grooming: testing partner control and partner choice models of cooperation in two primate species. *Animal Behaviour*, 81(6): 1223 – 1230.

Gruber T, Muller MN, Strimling P, Wrangham R and Zuberbuehler K. 2009. Wild chimpanzees rely on cultural knowledge to solve experimental honey acquisition task. *Current Biology*, 19(21): 1806 – 1810.

Jewell W. 2012. Downloaded from :
<myhero.com/go/hero.asp?hero=sue_savage_rumbaugh>.

Melis AP, Schneider AC and Tomasello M. 2011. Chimpanzees, *Pan troglodytes*, share food in the same way after collaborative and individual food acquisition. *Animal Behaviour*, 82(3): 485 – 493.

Nesturkh M. 1958. *The Origin of Man*. Progress Publishers, Moscow. p. 1 - 391

Pennisi E. 2009. On the origin of cooperation. *Science*, 325 : 1196 – 1199.

Verma KK. 2012. Behavioural parallels among chimpanzees and humans. *Bionotes*, 14(4): 108 – 109.