

UC Merced

Frontiers of Biogeography

Title

On inter-species co-evolution and the impact of human self-perception on conceptions of nature

Permalink

<https://escholarship.org/uc/item/1mz0m9t8>

Journal

Frontiers of Biogeography, 6(3)

Author

Skandrani, Zina

Publication Date

2014

DOI

10.21425/F5FBG22510

License

[CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)

On inter-species co-evolution and the impact of human self-perception on conceptions of nature

Gnothi seauton [Know thyself] – Ancient Greek proverb

The story begins at dawn on the cliffs of the Porto Conte National Park in Sardinia (Italy), trying to catch a first glimpse of their winged resident, the rock dove (*Columba livia*). It will take many mornings, and much patience, until dusk to satisfactorily observe the birds. However, it soon became evident that the initial idea to get closer to the rock doves for behavioral observations was illusory. The ensuing frustration gradually turned into astonishment: how could such a cryptic animal as the rock dove evolve into one of the most common species among humans, the urban pigeon?

One would promptly answer that tolerance for humans was selected during the rock dove's domestication, making modern feral pigeons (domestics' descendants) so well adapted to human proximity. However, given the species' rocky and inaccessible habitat, it stands to reason that humans were only able to come close to the birds, and subsequently to domesticate them, when rock doves first moved towards humans and fed on their agricultural fields (Johnston and Janiga 1995). Rock doves' synanthropic foraging behavior seems hence to be a condition preceding their domestication. Reindeer (*Rangifer tarandus*) attracted by human urine and coming close to human settlements, thus initiating the process of their domestication (Digard 1988), may constitute a similar example. The most famous, however, are wolves (*Canis lupus*), coming out from their concealment in order to scavenge on human refuse and thus providing the starting point for their selective breeding and the emergence of the dog species.

Domestication, in the sense of human benefits from non-human animals (Delort 1984, Clutton-Brock 1994, Baratay 2009), constitutes only one side of a larger reciprocity bond between humans and their surrounding animals, the latter

taking advantage of humans before and after (through being fed) their domestication. This symbiosis between humans and animals represents a major factor in evolution¹ since the reciprocity relates not only to the mutual benefit provided by humans and by animals to each other. Indeed, this reciprocal relation is further anchored in the mutual impact humans and animals had on the evolution of one another. On one side there is the emergence of new animal species in the course of natural history. On the other is the shaping of the human species itself and the development of most of what is considered today as human civilization, since animal domestication and food production were accompanied by changes in human settlement patterns, demography, social organization and technology (Crabtree 1993). This is not a novel idea. According to Wilson (1984), humans evolved the way they are through their affiliation with other species, which constitute the matrix in which the human mind originated and is permanently rooted. Similarly, Shepard (1978, 1993) argued that interactions with animals and sustained contact with nature were fundamental to the development of human cognition. Having spent most of our natural and social history interacting with other species through hunting and gathering activities, humans are evolutionarily dependent on these for proper emotional and psychological growth and development.

One could hypothesize that this symbiotic co-evolution may have influenced current classifications of animals according to their (more or less explicit) uses for humans (at least in Western society) and commercial potential: animals as products, company, and recently also the observation of "wild" animals as a means to escape the routine of modern life. In return, the relatively negative image of feral animals in public opinion, which are commonly thought to benefit from humans without giving anything in return, could be interpreted as the reaction to the breaking of the

¹ As early as 1902, in his book *Mutual Aid: A Factor of Evolution*, P. Kropotkin already had proposed cooperation among animals of the same or different species as a survival mechanism instead of the conception of exclusive competition.

“reciprocity contract” by feral animals.

Considering now the often-expressed claims of human disconnection from nature and biodiversity (Pyle 1978, 2003, Wilson 1984), it is worth noting that such disconnection may happen at the level of contemporary lifestyles and social representations: people consider themselves as apart from the Living around them and act consequently (White 1967, Latour 1993). However, here I argue that this is not, and cannot be, a matter of disconnection *per se*, since the symbiotic bond is inscribed in the constitution of humans as a species. Yet, consequences of these representations of disconnection are deleterious, as distortions in human self-representations imply equal distortions in conceiving the environment, be it anthropic or not. Indeed, when humans are thought to be separate from nature, urban animals are seen the same way, their close contact with humans leading to their common perception as unnatural. A telling illustration of this is the often-encountered difference in wording between urban pigeons and common wood pigeons (*Columba palumbus*), which are still typically considered in public opinion to be new recruits from “nature” to the city. The former are generally despised (Jerolmack 2008, Skandrani et al. 2014), the latter indulgently accepted if not even appreciated. Urban pigeons with grayish coats are often associated with dirt and pollution – we could also hypothesize with artificial concrete buildings – while nobody seems to be bothered by almost exactly the same grey feathers of the wood pigeons. That urban pigeons adapt so well to the city precisely because of the similarity between their natural breeding sites on cliffs (Baldaccini et al. 2000) and the architecture of urban buildings passes unnoticed.

Beyond pigeons, crows (*Corvus corone*), herring and black headed gulls (*Larus argentatus*, *Chroicocephalus ridibundus*) in cities endure the same “this is not nature” label, although, referring again to the Porto Conte National Park, we encounter precisely these birds as the natural reserve’s most visible avifauna. The dichotomous vision of people apart from nature, with its biasing impact on the perception of animals associating

with humans is slowly but surely propagating from the city and penetrating even into remote areas. Hence herring gulls are listed at last in Porto Conte NP’s official description of the avifauna (information notice in situ, leaflets, homepage), corvids are ignored, and rock doves equally kept quiet, though the Sardinian population is one of the last remaining in Europe (IUCN 2014). Wild or not, they remain pigeons, and the park visitor shall not be alarmed.

And yet it is alarming when considering Diamond’s (2005) analysis of the collapse of past civilizations and his association of societies’ failure to appropriately evaluate their relations with nature as one cause of it. In our current world’s drive for more knowledge and science, maybe we should pause for a moment and remember the wise Greek philosophers who said, some 2500 years ago, “*Gnothi seauton*” – know yourself.

Zina Skandrani

Center for Ecology and Conservation Sciences, French National Museum of Natural History, Paris
skandrani@mnhn.fr

References

- Baldaccini, N.E., Giunchi, D., Mongini, E. & Ragionieri, L. (2000) Foraging flights of wild rock doves (*Columba livia*): a spatiotemporal analysis. *Italian Journal of Zoology*, 67, 371–377.
- Baratay, E. (2009) Le Grand Rapprochement. *L'Histoire*, 338, 78–87.
- Clutton-Brock, J. (1994) The unnatural world: behavioural aspects of humans and animals in the process of domestication. In: *Animals and human society: changing perspectives* (ed. by A. Manning and J. A. Serpell), pp. 23–35. James Serpell, London.
- Crabtree, P.J. (1993) Source early animal domestication in the Middle East and Europe. *Archaeological Method and Theory*, 5, 201–245.
- Delort, R. (1984) *Les animaux ont une histoire*. Editions du Seuil, Paris.
- Diamond, P. (2005) *Collapse: how societies choose to fail or succeed*. Viking Penguin, New York.
- Digard, J.-P. (1988) Jalons pour une anthropologie de la domestication animale. *L'Homme*, 108, 27–58.
- International Union for Conservation of Nature (2014) The IUCN Red List of Threatened Species. <http://www.iucnredlist.org/>

- Jerolmack, C. (2008) How pigeons became rats: the cultural-spatial logic of problem animals. *Social Problems*, 55, 72–94.
- Johnston, R. F., & Janiga, M. (1995) *Feral pigeons*. Oxford University Press, Oxford.
- Latour, B. (1993) We have never been modern. Harvard University Press, Cambridge.
- Pyle, R.M. (1978) The extinction of experience. *Horticulture*, 56, 64–67.
- Pyle, R.M. (2003) Nature matrix: reconnecting people with nature. *Oryx*, 37, 206–214.
- Shepard, P. (1993) On animal friends. In: *The Biophilia Hypothesis* (ed. by S.R. Kellert and E.O. Wilson), pp. 275–300. Island Press, Washington.
- Shepard, P. (1978) *Thinking animals: animals and the development of human intelligence*. The Viking Press, New York.
- Skandrani, Z., Lepetz, S. & Prévot-Julliard, A.-C. (2014) Nuisance species: beyond the ecological perspective. *Ecological Processes*, 3, 3. doi:10.1186/2192-1709-3-3.
- White Jr., L. (1967) The historical roots of our ecologic crisis. *Science*, 155, 1203–1207.
- Wilson, E.O. (1984) *Biophilia*. Harvard University Press, Cambridge.

Submitted: 2nd May 2014

Accepted: 6th August 2014

Edited by Joaquín Hortal, Michael Dawson and Richard Field