

Will We Ever Know the Difference Between a Wolf and a Dog?

With variables like evolution and upbringing, the line blurs rather quickly.

[Aeon](#) Katja Pettinen



Photo by Jim Cumming / Getty Images.

Living in the Canadian Rockies allows me ample opportunities to get out into nature. In an hour outside the city, I can be within wilderness, with no cellphone reception and no other humans. Such wilderness, of course, comes with plenty of wildlife, including a number of contemporary North American canids such as coyotes and wolves. While I tend to go without any human company, I do have a canid

companion, one taxonomically positioned within the species *Canis familiaris* but also bearing a proper name, Yuni, which distinguishes him as a particular individual apart from his species.

Being positioned above the 42nd parallel, snow is plentiful in these parts of the Rockies, often starting to fall early in the autumn. While Yuni and I get out plenty in the summer, enjoying the relative warmth of the area, we are both in our



element during the winter. Yuni is a Finnish Lapphund, a breed from northern Scandinavia; my ancestors are positioned within southern Scandinavia.

Being out in the wild during winter affords me, a human, with rich visual signs present in the landscape. Yuni's cues are predominantly olfactory, though at times he also responds visually to the prints left on the ground. Sometimes, we stand paw-print to paw-print, wolf steps next to dog steps. We haven't come face to face with these wolves, but we sometimes listen to their howls in the near distance.

Most of the common cultural representations that inform my human mind tell me that we should be very wary, even scared, in the presence of these wild canids. Within the domains of human culture, wolves are commonly evoked as predatory and aggressive. Some locals even inform me that Yuni and I could be torn apart at any moment. My dog certainly doesn't act with any fear in these situations. After all, his existence falls outside the domain of most, though certainly [not all](#), human language games. His is also a dog variety bred for reindeer herding where part of the job is to protect the herd from predators.

Many details of human-dog co-evolution, especially its [time and place](#), have been subject to debate. But what is clear is that the interrelationship between our species is long and richly interwoven. The molecular evidence hardly offers clarity. The overall physical remains from archaeological sites also pose challenges, mainly because the earliest proto-dogs were not much different from wolves. In fact, the clearest evidence into the depth and length of our co-existence, interaction and at times interdependence lies in the very distinction between a wolf and a dog today.

While it indeed is true that, on some levels, the dog and the wolf, as well as the coyote, are one and the [same animal](#), it is also clear that identity (ontologically speaking) isn't sorted out on a

genetic level alone. We can ponder here, by analogy, the similarities, or the differences, between some close human ancestors and our own species, *Homo sapiens*, which remains the only one of those several ancestral hominins. According to contemporary biological evidence, humans and Neanderthals interbred to such a degree that most of us carry fragments of [Neanderthal](#) in our bodies. The genetic distance between these two species is very small. Yet, most evolutionary anthropologists observe clear differences between the two species when skeletal remains are unearthed in palaeoanthropological sites reaching from Europe to Eurasia. Some researchers even [argue](#) that the reason why humans prevailed through the Ice Age is because we had developed this close relationship with proto-dogs while the Neanderthals did not.

When distinguishing between a wolf and a dog, we face the classic challenge of being able to sort out differences on a meaningful level. Indeed, one cannot do this without engaging the issue of meaning. Do we have here essentially 'the same animal' or two quite clearly different species and beings, as different as humans and Neanderthals, for example (or even more so)? One of the challenges in these questions is that they do not have straightforward scientific or biological [answers](#) – we need other toolkits in our conceptual frameworks. One such conceptual framework comes from biosemiotics, an interdisciplinary approach that recognises the fundamental importance of molecules and other biological markers in shaping our existence but also readily acknowledges that there is no hard and fast line between biology and philosophy, or biology and culture.

As a whole, biosemioticians aim to make [sense](#) of the signs present in ecology, and track the ways in which such signs both mediate and are mediated by relationships that exist across different organisms. The paw prints in the snow



constitute a basic (index) sign that I as a human respond to visually – sniffing snow doesn't do much for us. Of course, signs of previous presence are never visual alone but, depending on the species, also exist on a range of sensorial levels. As a result, one of the key concepts in biosemiotics is the notion of an *umwelt*, or the range of meaningful features present in an environment for a given animal.

Within the dog *umwelt*, olfactory signs are more meaningful in many contexts than visual signs – sniffing snow works quite well – while the reverse tends to be the case for humans; we are distinct species both as a result of our evolutionary (phylogenetic) background and our individual development (ontogeny). It is this fact of phylogeny and ontogeny both being significant in shaping the lifeway and the very existence of any animal that can make thinking about differences quite challenging. In the case of dogs, we have the third dimension of artificial selection or [breeding](#), which has brought forth further changes in the constitution of the species.

When some wolves began transitioning toward what we readily recognise as a dog today, they maintained their overall physiological and mental constitution – we still have beings that navigate their environment with a focus upon smells, who eat a carnivorous diet, and who are extensively social. The sociality of wolves is a feature often ignored by human cultural representations; just think of how often the notion of a 'lone wolf' gets evoked. Yet wolves are indeed intensely social, so much so that some ethologists [suggest](#) that human sociality was

heightened through our interactions with and observations of wolves.

While humans were observing these wolves and helping them along the path to becoming proto-dogs, the reverse was also the case. In this co-evolutionary story, proto-dogs had begun to extend their attention, and their fundamental sociality, increasingly toward humans who would later become their primary companions in life. Through this shift in shared attention and sociality, many canids we know so intimately today sniff very different things, acquire their food, and conduct their sociality quite differently from wolves. As a result, the corresponding *umwelten* – the very minds in question – are distinct from each other.

The productive way of making sense of this difference is not to centre on any particular absolutes, though some have been suggested by empirically oriented researchers. The main challenge here is in the fact that organisms differ both as a result of their evolution and as a result of their upbringing; individuals are not the same as species. What a biosemiotic perspective can offer is a more holistic account of the differences; on a species level, human-dog *umwelten* overlap far more than human-wolf *umwelten*.

Whether this turn of things was for the better or the worse, especially from the point of view of dogs, is up for discussion. In the meanwhile, I am delighted to share my *umwelt* with Yuni, strolling paw to foot in the wilds of the Rockies, mostly off-leash and hoping not to come face to face with too many wild canids.

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