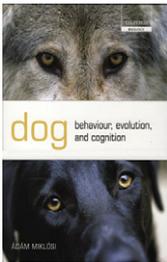


The domestic dog: a forgotten star rising again

Dog Behaviour, Evolution and Cognition by Adam Miklosi, Oxford University Press, 2007. £55.00 hbk (288 pp) ISBN 13: 978-0-19-929585-2

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'No one appreciates the very special genius of your conversations as a dog does'. With this one sentence, Christopher Morley (1890–1957) beautifully summarized the unique relationship of dogs with humans, and prompts the questions that have interested many researchers, both then and now. When we talk to dogs, are we understood? And, if so, how flexible is the understanding of a dog of our communication?

And what is it about dogs that makes them so attached to us? Has domestication changed dogs in such a way that they can develop this special relationship with us? And how exactly has the domestication process influenced dog behaviour? What changed from wolf to dog to make dogs such valuable companions to man that wherever there are humans, there are dogs?

In his recent book *Dog: Behaviour, Evolution and Cognition* [1], Adam Miklosi reviews the research that has tackled all of these questions and more. Miklosi's book covers a wide range of disciplines, from comparative cognition and neurobiology, to genetics and archaeology. This reminds the reader that a broad approach towards dog evolution and ethology is essential if all four of Tinbergen's questions are to be addressed. The 'must-reads' at the end of each chapter are a valuable guide to the literature, should the reader want to learn more. What makes this book especially valuable is that Miklosi reviews not only the very recent, but also the less recent literature. Researchers such as Fischel, Buytendijk and Brodgen, who did wonderful research on dog ethology and cognition in the early 20th century, have not been forgotten. This makes Adam Miklosi's book an important contribution and a must read for every researcher and student interested in ethology in general, and dog ethology in particular.

The message of this book is clear from the first page: 'Comparison is essential: Comparare necesse est'. To single out the unique features of dogs, we have to compare them with other species. To understand the evolutionary roots of the uniqueness of dogs we have to compare them with their ancestor, the wolf. It is unimaginable to think of a wolf herding your sheep, fetching a toy, guiding a visually impaired person through the traffic. This is because dogs are not wolves. They have changed substantially during their estimated 15 000 years with humans. Adam Miklosi describes the many levels on which this change occurred, by summarizing research on dog–wolf comparisons,

particularly those coming from his own research group at Eötvös University, Budapest, Hungary. As was the case with the few research groups before them, the Miklosi group hand-raised wolves as dogs. They undertook this endeavour to ensure that both species had exactly the same background, for only then, Miklosi argues, are they comparable in all respects other than their ancestry. Even though I remain an advocate of the validity of comparisons with zoo-living animals (in part because of the ethical dilemma of hand-raising), the dog–wolf comparisons coming from Adam Miklosi and his co-workers are real treasures in ethology research.

After reading this book it becomes apparent where the specialization of dogs lies. Although dogs fail to understand the properties of the physical environment (e.g. see Osthaus *et al.* [2]), they seem to be skilful in following human communication, with some talented individuals being able to distinguish between several hundreds of objects based on their labels [3]. After reading Miklosi's book it should become clear, even to the sceptic, that dogs are not just a silly version of the wolf, as people in the past have often viewed them. Instead, dogs have adapted specifically to their new and unique habitat – namely, human societies. Some of the most important research pointing in that direction comes from the Miklosi laboratory, whose members have shown, among other things, that dogs developed a special pattern of attachment to humans. This attachment, Miklosi argues, provides scaffolding for the emergence of various aspects of the unique dog–human relationship. Among these are probably the unique and specialized skills of dogs in reading human communicative cues. Dogs are the only species, apart from human beings, that is able to use the communicative gestures of humans (such as pointing). Not even our closest living relatives, chimpanzees, can do this. That this is most likely to be a result of domestication comes from two additional facts. First, dogs show this ability from an early age; hence, ontogeny alone cannot account for this behaviour. Second, dogs are more advanced in using human communication than their ancestor, the wolf.

These astounding findings are a good example for why Miklosi and others point out the importance of dogs as a natural model for understanding the processes of evolution. If dogs and humans, two species that are very distantly related but sharing the same environment, show comparable skills, we can gain valuable insights into the selection pressures at work during the evolution of these skills. So, as Miklosi points out, by looking at dogs we might in the end learn about ourselves.

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References

- 1 Miklosi, A. (2007) *Dog: Behaviour Evolution and Cognition*, Oxford University Press
- 2 Osthaus, B. *et al.* (2005) Dogs (*Canis lupus familiaris*) fail to show understanding of means-end connections in a string-pulling task. *Anim. Cogn.* 8, 37–47
- 3 Kaminski, J. *et al.* (2004) Word learning in a domestic dog: evidence for ‘fast mapping’. *Science* 304, 1682–1683

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