

It's official: dogs really do imitate their owners

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Image credit: Mdk572, Wikipedia.

(PhysOrg.com) -- Scientists studying imitative behavior have found that, just like people, dogs learn quickest by automatic imitation. Apart from the budgerigar, this is the first time automatic imitation has been demonstrated in a non-human species.

The researchers from the University of Vienna, Austria, and the University of Oxford in the UK, first trained ten [dogs](#) to open a sliding door in a box using either their mouth or paws. They then asked the owners to open the door using either the mouth or hand, and gave the dogs food rewards if they opened the door using the same method (compatible group) or the other method (incompatible group).

The results showed that the dogs in the compatible group were able to gain the reward much more easily and with fewer trials than those who had to counterimitate their owners. This strongly suggests that dogs, like humans, learn by automatic imitation.

In a second experiment all the dogs were rewarded if they imitated their owners, and in this case the dogs who had been in the incompatible group fared worse than those in the compatible group, making more errors through counterimitation. The researchers say this suggests the imitation depends on "sensorimotor experience and phylogenetically general mechanisms of associative learning" and that imitation in dogs is shaped more by their interactions with people than by their [evolutionary history](#) of domestication.

All ten dogs were over eight months old and had completed agility, rescue, and obedience training. They were randomly assigned to the two groups, with three border collies, one Australian shepherd and a mixed breed in the compatible group, and four border collies and a mixed breed in the other. The experiments were carried out at the homes of the participants, who all resided in Austria.

Leader of the team, Dr Friederike Range, from the University of Vienna, said learning by automatic imitation has evolutionary advantages because animals can learn without having to go through a trial and error process, which always carries a risk. She also said the results suggest the dogs brought to the experiment a tendency to automatically imitate their owners, even when it proved costly to do so.

Scientists are interested in automatic imitation because it is pervasive in human life, where it promotes cooperation, and it is thought to be necessary for imitation learning, which may be crucial for the cultural inheritance of behaviors. The results of the study support a theory of learning that suggests a "mirror neurons" system is involved, and that the

capacity to imitate develops as an animal learns and interacts with humans, rather than the ability being present from birth.

The paper was published in the *Proceedings of the Royal Society B* and is available online.

More information: Automatic imitation in dogs, *Proceedings of the Royal Society B*, Published online before print July 28, 2010, [doi:10.1098/rspb.2010.1142](https://doi.org/10.1098/rspb.2010.1142)

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