

test. Analyses were done by using the χ^2 test ($P < 0.05$). The level of attachment to each person was measured by the number of χ^2 which resulted statistically significant compared to other participants.

Eight dogs (72.7%) showed a higher attachment toward a specific person; no difference was found based on the sex (4 men and 4 women) or age (10 to 65 years) of the preferred person. Instead it emerged that walking the dog (100.0% of preferred figures) was an activity that predisposed the dog to establish a stronger attachment bond. In contrast to what was observed by Topál and colleagues (1998), dogs living in a multi-individual family (3-4 person families), do not show a lower attachment, but in these dogs it was possible to observe a kind of hierarchy in the level of attachment toward different owners, as reported by Bowlby (1988) in children.

Data also suggest that owners, on the whole, were able to recognize a dog's greater attachment toward a specific person, their answers corresponding to the results of the test in 75.0% of cases.

No correlation was found between the reciprocal dog-human levels of attachment.

Key words: attachment; bond; dog; family; people

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DOES THE BREED INFLUENCE DOG'S ATTACHMENT TO MAN? A PRELIMINARY STUDY

Eva Ricci¹, Chiara Mariti^{2,*}, Beatrice Carlone¹, Silvana Borgognini-Tarli^{1,2}, Claudio Sighieri², Angelo Gazzano¹

¹Department of Biology – University of Pisa- via L. Ghini, 5 56126 Pisa, Italy

²Department of Physiological Sciences – University of Pisa – viale delle Piagge, 2 56124 Pisa, Italy

*Corresponding author: cmariti@vet.unipi.it; Phone: +39 050 2216837; Fax: +39 050 2216851

It can be hypothesized that belonging to different canine breeds leads to differences in attachment to man. The aim of the current study was to assess whether a specific canine

breed differs from others with respect to this aspect of dog-human relationship.

Accordingly, the attachment to the owner of 13 Labrador retrievers (6 females, 7 males, 31.9±20.5 months) was compared to the bond of a control group, formed by 27 dogs belonging to different breeds or mixed-breeds (11 females, 16 males, 45.9±29.6 months).

Each dog was observed by using a modified version of the Ainsworth Strange Situation Test. All tests were videorecorded and analyzed through a continuous recording, registering the duration (in seconds) of 5 behavioral categories (in total 22 behaviors). The stranger was played by a 24 year old woman, who was the same for all dogs. Data were statistically analyzed using the Mann-Whitney U test ($P < 0.05$).

No statistical differences were found between the group of Labrador retrievers and the control group for the behaviors considered as indicators of an attachment bond to the owner (contact/proximity with the owner in presence of the stranger: median Labrador retrievers 161.0 vs. median control group 111.0, $z=1.299$, $P=0.197$; contact/proximity with the owner in absence of the stranger: 63.0 vs. 30.0, $z=1.314$, $P=0.197$; behaviors oriented to door/chair/shoe when the owner was absent: 162.0 vs. 129.0, $z=0.520$, $P=0.608$; whining in the absence of the owner: 0.0 vs. 1.1, $z=1.242$, $P=0.217$; social play score: 6.0 vs. 5.0; $z=1.846$; $P=0.065$).

These preliminary results suggest that Labrador Retrievers do not show a different attachment to man in comparison with other dogs. Nevertheless data regarding behaviors considered as indicators of attachment to the owner are often more expressed in the group of Labrador Retrievers. In the future it would be desirable to increase the sample size and to broaden this research to other breeds in order to assess if there is an actual absence of differences among canine breeds regarding the attachment to man.

Key words: attachment; breed; dog; Labrador retrievers

DOES THE A-NOT-B ERROR IN DOGS INDICATE SENSITIVE TO HUMAN COMMUNICATION?

Anna Kis^{1,*}, József Topál², Márta Gácsi¹, Friederike Range³, Zsófia Virányi⁴

¹Department of Ethology, Eötvös University, Budapest, Hungary

²Research Institute for Psychology, Hungarian Academy of Sciences, Budapest, Hungary

³Department of Cognitive Biology, University of Vienna, Austria

⁴Clever Dog Lab, Vienna, Austria

*Corresponding author: kisanna12@gmail.com

After having repeatedly obtained a target object hidden at one location, 8-12 month-old infants continue to search for the object at the same (A) location despite the fact that they have just seen the object being hidden at a new place (B). This so

called A-not-B error was proved to be triggered largely by the ostensive communicative cues from the experimenter. Recent comparative analysis of this perseverative error in canines has indicated infant-like sensitivity to human communicative signals in dogs, and suggests that this is an evolutionary novel skill of dogs that is lacking in wolves. These results, however, can be explained by two alternative hypotheses. First, in the communicative hiding context the experimenter may distract the dogs' attention by a "sham baiting" to location A in the B trials. Second the search error may simply be a habitual response, due to dogs' inability to inhibit previously rewarded motor response of going to the A location.

In order to clarify these concerns, in the present study besides the "classical" social and ostensive condition we also tested dogs in two control conditions. In the first control condition after the A trials the reward was hidden directly to location B without any misleading movements and signs given by the experimenter. In the second control condition before the B trials dogs could only observe the A hidings without any search response in order to avoid motoric habituation.

In all three conditions we found a strong bias to location A in the B trials. Therefore our results not only replicate the earlier ones but also provide a support that the error mirrors infantanalogous responsiveness to human communicative cues, providing a typical case for how this social sensitivity could (mis)lead domestic dogs.

Key words: dog; A-not-B error; social cognition; communication

PERSISTENCE OF PUPPY BEHAVIORS AND SIGNS OF ANXIETY DURING ADULTHOOD

Martin Godbout^{1,*}, Diane Frank²

¹Centre Vétérinaire Daubigny, 3349 Boulevard Wilfrid-Hamel, Québec, QC, Canada, G1P 2J3

²Université de Montréal, Faculté de Médecine Vétérinaire, Centre hospitalier Universitaire Vétérinaire, C.P. 5000, St-Hyacinthe, QC, Canada, J2S 7C6

*Corresponding author: mgodbout@daubigny.qc.ca

An earlier pilot study showed that some puppies expressed specific behaviors and signs of stress or anxiety at very young age when exposed to a veterinary clinic environment (Godbout et al., 2007). The aim of the present study was to evaluate the persistence of these behaviors into adulthood. A total of 42 puppies of various breeds were filmed during an examination in a veterinary clinic at 2 to 4 months of age and 12 months later. The study included observation of the puppy free on the floor (FF) and various manipulations by the veterinarian (MF).

During FF the behavioral categories recorded were: activity, exploration, facial expression, puppy solicitation of interaction with the veterinarian, vocalisation and others. During MF, the type of interaction with the veterinarian, facial expression and ear position were examined.

The Spearman rank correlation coefficient test revealed positive and significant correlations between behaviors exhibited by puppies and adult dogs.

During FF, correlation was significant for time spent in movement, exploring the environment, sitting down immobile, panting, self-grooming and defecating.

During MF the behaviors with significant correlations were: holding their ears backwards, panting, showing passive behaviors, avoiding contact with the veterinarian, licking their lips and yawning.

The present study showed that most puppy behaviors tend to persist in adulthood. Correlation for the following signs of anxiety - panting ($0.53 P < 0.001$), yawning ($0.42 P < 0.01$), lip licking ($0.49 P < 0.002$), defecating ($0.53 P < 0.001$) and holding their ears backward ($0.52 P < 0.001$) - were the highest between the 2 data collection sessions. Persistence of these signs into adulthood suggests that anxious dogs may be identified at very young age. Whether these puppies are anxious in other contexts or could be more at risk for developing behavioral problems remains to be investigated.

Key words: puppy; behavior; anxiety, veterinary clinic, dog

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DOG REGULATION IN EAST-FLANDERS, BELGIUM

Lieve Meers^{1,*}, Isabel Colman¹, Cinzia Stefanini², Anouck Haverbeke¹, Simona Normando³, William Ellery Samuels⁴, Frank Ödberg¹

¹Ghent University, Department of Nutrition, Genetics, and Ethology, Heidestraat 19, 9820 Merelbeke, Belgium

²Associazione Vita da Cani, Vitadacani via Mazzini 4, 20020 Arese (MI), Italy

³Padua University, Dipartimento di Scienze Sperimentali Veterinarie, V.le dell'Università 16, Agripolis, 35020 Legnaro PD, Italy

⁴The City University of New York, College of Staten Island, 2800 Victory Boulevard, Room 3S-207A, Staten Island, New York 10314, USA

*Corresponding author: lieve.meers@ugent.be

Governmental regulations intended to control dogs address such issues as social regulations (e.g., access to public places), interactions between dogs and humans or animals (e.g., leash laws and identification), animal welfare (e.g., transportation and housing), and sanctions against certain actions and situations.

To survey and compare the regulations within a large, discrete area, we contacted all 65 cities/villages and all 29 police districts in East Flanders, a Belgian Province