



Interactions between dogs and humans

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DOGS FOREVER! A SUSTAINABLE ROLE FOR THEM AS COMPANIONS AND CO-WORKERS

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The time seems right for a multidisciplinary approach to canine science, one that takes the research agenda beyond mere control and therapy and examines how we can get the best out of dogs by helping them to help us. There is a compelling argument that our interdependence with dogs has been so great, we may even have co-evolved. At the same time, our expectations of dogs and the ways we breed, treat, and train them are not necessarily based on a comprehensive understanding of their lives. So perhaps while asking where dogs came from, we should also be asking where are we taking them and how research can guide us.

The importance of dogs is becoming better recognized. Their role as companions and their potential to improve human well-being is a constant source of interest, especially for the pet industry and the media. However, dogs' ability to compromise human health and welfare is perhaps less well documented, so we must strike a balance. We need to pursue an understanding of the ugly stuff so that the bond between dogs and their humans can be enhanced by strategic selection, appropriate management, and continuing education. This approach will always inform what humans can expect of their dogs and what dogs can reasonably be expected to deliver.

The place of dogs in human contexts may be changing. The notion of a high-quality bond may ultimately prevail over the idea that every home is enhanced by having a dog in it. This change is fueled by the emergence of better indicators of welfare in domestic dogs. Crude measures of longevity and behavioral wastage (those dogs leaving the owned dog population via abandonment, surrender, and euthanasia because of their "inappropriate" behavior) still have their place, but cross-pollination with the medical profession is giving us a better grasp on how to assess "quality of life" for dogs. The prospect of further co-evolution is both fascinating and speculative. We cannot say what the domestic dogs of the future will look like because we do not know what the humans of the future will look like,

need, and therefore value. That said, there are many reasons to believe that dogs have a bright future in the ecological niche we call home.

Key words: dog; welfare; selection; quality of life

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EFFECTS OF PERSONALITY AND SEX ON BEHAVIORAL PATTERNS IN HUMAN–DOG DYADS

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Based on similarities in vertebrate brain and physiological social mechanisms, we propose that humans are able to maintain truly social relationships with their companion animals. We therefore predicted that we would see features characteristic of vertebrate long-term dyadic relationships, including peculiar time patterning of interactions. Here we explored these ideas in human–dog dyads. Twenty-three human–dog dyads participated in our study (11 male and 12 female owners, aged 23–68 years, with their medium- and large-sized intact male dogs, aged 1.5 to 6 years). During 3 sessions, dyadic behaviors and interactions were observed and videotaped in different test situations (e.g., mild threatening of the dog by moving toward the dog and gazing at it with the owner present or absent). Owners completed the NEO-FFI personality test (Costa and McCrae, 1989) and an attitude-toward-dog-scale. Dog personality data were obtained via observer rating and behavioral tests. Principal component analysis (PCA) served to condense dog personality ratings and the attitude-toward-dog-scale. The videos were behavior-coded with THE OBSERVER (Noldus Version 5.0, Release date: October 30, 2003, Wageningen, The Netherlands).

We found that during the threatening situation with the owner present, male owners touched and held their dog for longer periods of time than female owners (Mann-Whitney-U: $N = 22$, $Z = -2.664$, $P = 0.008$ and $Z = -1.988$, $P = 0.047$). The more conscientious (FFI axis 5) the owners, the less the dog barked and growled during this situation (Spearman's: $N = 22$, $r_s = -0.474$, $P = 0.026$ and $r_s = -0.471$, $P = 0.027$). The dogs growled for longer

periods of time in the situation with the owner present than with the owner absent (Wilcoxon's: $N = 22$, $Z = -2.497$, $P = 0.013$). Duration of whimpering and growling was correlated in both threatening situations (Spearman's: $N = 22$, $r_s = 0.781$, $P < 0.001$ and $r_s = 0.608$, $P = 0.003$, respectively). But the longer the dog barked when the owner was present, the more he whimpered when the owner was absent ($r_s = 0.415$, $P = 0.055$).

Our results suggest significant contingencies between owner gender and personality of owner and dog on the dyadic interactions and dog relatedness with owner.

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Key words: human–dog social interactions; dyadic relationship; personality; sex differences

References:

Costa, P.T., McCrae, R.R., 1989. The NEO PI/FFI Manual Supplement. Odessa, Florida: Psychological Assessment Resources; 1989.

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CAN TRAINED SNIFFER DOGS DETECT CANCER IN HUMANS?

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In 1989 the first report on spontaneous detection of melanoma in a humans by untrained dogs, due to their peculiar behavior (sniffing, licking, attempts to bite off a mole on the dog-owner's leg), was published in the world's leading medical journal Williams and Pembroke (1989). At our Institute, a research project was launched in 2004, aimed at canine training for routine detection of lung and breast cancer and melanoma on the base of breath odor.

To exclude possible interactions between dogs and the person investigated for the presence of malignancy, the dogs were trained to sniff samples of breath odor taken into special PCV tubes, instead of sniffing the person directly. Six dogs (5 German shepherd–mix dogs and 1 Labrador retriever) were trained to indicate 1 pattern odor sample (from patients with diagnosed cancer) placed randomly in a lineup amid 4 control samples from healthy volunteers. Operant conditioning was used during training, based on rewarding the dog with a piece of food for a correct indication (sitting or lying down in front of the pattern sample in the lineup). Three of 6 dogs completed all phases of the training program and were considered fully trained. To validate the dogs' accuracy and to check the tendency for false positive indications, “zero” trials (without the pattern sample) and “double blind” trials where the status of the tested sample (pattern vs. “healthy” sample) was unknown to the experimenter before the test and had to be estimated on the basis of canine indications were conducted

and compared with the actual status of the sample known. Only the assistant who prepared the samples for the test knew their positive or negative status. Seventy-eight pattern samples of persons with lung cancer, 55 breast cancer-positive samples, and 45 melanoma-positive samples were tested and compared with 350 control samples from “healthy” volunteers. A total of 6,500 trials were conducted. For the calculation of sensitivity and specificity of canine detection, the “yes/no” response toward each of the sniffed samples in the lineup was taken (scoring 50% correct indications was considered detection due to chance).

The detection sensitivity in relation to the pattern samples ranged between 68.0% and 89.2% for particular dogs, and the specificity ranged between 76.7% and 87.7%.

The following issues could make using dogs for practical cancer screening problematic and deserve further studies: (1) only diagnosed stages of cancer (pattern samples) were detected by our dogs so far and early stages may be ignored either due to a lack of characteristic odor or due to poor generalization of odor perception by dogs; (2) contamination of samples by other specific odor molecules e.g. “hospital odor” or odors related to other diseases, therapies, diet, smoking, etc.; and (3) habituation of the dogs to the odors resulting in careless sniffing, “clever Hans effect,” decreasing motivation for work in the scent lineup due to boredom, frustration caused by lack of success, no interest in getting reward, etc.

Key words: sniffer dogs; cancer detection; training

References:

Williams, H., Pembroke, A., 1989. Sniffer dogs in the melanoma clinic? *The Lancet* 1, 734.

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INTRASPECIFIC ATTACHMENT IN DOMESTIC PUPPIES (CANIS FAMILIARIS)

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The ability to form social/affectional bonds is not a characteristic that is exclusive to human and nonhuman primates, but it is widespread among many orders of vertebrates. Attachment is an affectional bond that is characterized by a tendency to maintain physical proximity, emotional distress upon separation, and the experience of security and comfort obtained by the presence of the attachment figure (Ainsworth and Wittig, 1969). There is substantial evidence that adult dogs are able to form an attachment bond toward the owner, but investigation of intraspecific affectional ties has been neglected so far. The aim of the present study was to investigate