

included humans. A reversal learning phase followed the generalization phase, where the rewarded image was then that of the non-dog image. In order to reach the criterion of success, subjects had to choose the S+ at least 10 times during each of 2 successive 12-trial sessions. The 9 subjects were all able to group all the images of dogs within a same category in a number of sessions ranging from 2 to 9, demonstrating that dogs discriminate species. This discrimination could be here considered as an « open-ended » categorization because of the large phenotypic diversity of the dog species.

Key words: discrimination of species; categorization; domestic species; phenotypic diversity; *Canis familiaris*

THE MOTHER'S DIET INFLUENCES FOOD CHOICE MADE BY NEWBORN AND EIGHT-WEEK-OLD KITTENS

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Young animals experience a prenatal sensory environment *in utero* that may modulate postnatal behaviors. During lactation, animals learn and collect information about suitable food through their mother's food intake. To better understand how preferences develop in cats, we investigated the effects of pre- and postnatal olfactogustatory experience on early preferences at birth and dietary selection at weaning. In a first experiment, we examined how prenatal exposure (25 days pre-partum) to a cheese flavor via the mother's diet influences olfactory preferences of neonatal kittens. During 2-choice tests, 2-day-old kittens oriented first toward the cheese odor experienced *in utero* than toward a usual pet food odor. The choice of kittens born to mothers fed with a control diet did not differ from random. In a second experiment, we assessed the role of pre- and postnatal exposure (from 25th day before birth to 23rd day after birth) to cheese flavor on later food preferences in weaned kittens. Forty-five-day-old cats exposed to cheese flavor *in utero* and postnatally via their mother's diet oriented first to and ate higher amounts of chicken supplemented with cheese flavor than that supplemented with standard pet food flavor. The control group did not exhibit a preference for a specific food. Our results indicate that pre- and postnatal olfactogustatory exposure via maternal ingestion influences later olfactory and feeding preferences of cats, suggesting that early learning could have a strong impact on food selection at weaning, a very sensitive and transitive period.

Key words: prenatal and postnatal exposure; dietary selection; domestic cat; flavor; olfactory preference

PSYCHOTROPIC COMPOUNDS AND VETERINARY MEDICINE

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Use of the first psychotropic compounds for the treatment of mental disorders was serendipitous, which led to new structural analogs. The first animal models were developed to allow predictive screening of new active chemical compounds, attempting to link drug action and fate of neurotransmitters. Animal models mimicking signs of disorders or able to predict therapeutic indication of drugs were then developed. These models and their responses to medication may be used as a behavior analysis tool. Is it possible to base the veterinary prescription of psychotropic compounds on human psychopharmacology? Kinetic properties allow medications to be used as an analytic tool for animal behavior when prescribed in veterinary medicine.

Key words: psychotropic medications; animal models; pharmacology; drug kinetics

LONG-TERM FOLLOW-UP OF ADAPTIVENESS OF LABORATORY BEAGLES ADOPTED AS PETS

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Some dogs used for laboratory investigations may be adopted by a family when euthanasia is not required by the experimental protocols. Whether these dogs are able to adapt in a human family environment as pets has not been investigated. Our laboratory initiated an adoption program involving 191 beagle bitches over an 8-year period (2002-2010). We evaluated the behavior of the adopted animals just after they entered their human family environment to assess their well-being and any difficulties in adapting to their new environment. A total of 107 families were contacted by telephone and required to answer a

questionnaire including information about the family and its environment and variables related to adopted dog behavior: obedience, quality of sleep, behavioral disorders, et cetera. Among other results, our analysis showed two consistent successive phases following adoption. First, dogs went through an initial acute phase that included anorexia, resistance to urinate or defecate outside, and reluctance to walk on a leash and climb stairs. This phase may last for days or weeks. In a second phase, dogs became clean inside, were eager to be walked and became friendly with family members and other animals. Most dogs were easily frightened by rapid movements or loud noises. Looking back to the behavior of dogs in the laboratory yielded a pretty good indication of their adaptability. Those who were shy or extrovert remain that way within the adopting family. Though the adoption program was largely successful (only 6% returned), adopting laboratory beagles required a lot of patience, but the families reported a very high degree of satisfaction.

Key words: dog; laboratory; pets; adaptability; adoption

COMPARISON BETWEEN GROUP AND PAIR HOUSING CONDITIONS: EFFECTS ON SHELTER DOGS' BEHAVIOR AND WELFARE

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The Italian National Law (281/1991) forbids the euthanasia of shelter dogs if not dangerous or seriously suffering. Adoption rates are insufficient to assure a home to every dog, necessitating keeping some animals in kennels for life, with the dogs' welfare becoming an issue. Seventeen subjects were housed in groups of 5-8 animals, in 4 outdoor enclosures (36m²). After one month, 8 dogs (experimental group) were transferred in pairs (one male and one female) to smaller enclosures (6m²), while the other 9 dogs were left in the outdoor enclosures (control group). A mixed linear model with groups and housing as random effects, and their interaction as fixed effect was used to evaluate the outcome of different forms of confinement on these dogs' behavior. Group housing provided a more complex environment with dogs showing significantly more active behaviors ($T=3.82$, $p=0.002$), more digging ($T=2.33$, $p=0.03$), more visual and olfactory exploration of the environment ($T=3.49$, $p=0.003$; $T=2.42$, $p=0.03$, respectively), and more urinating ($T=3.67$, $p=0.002$) compared to pair-housed dogs. Due to dogs' individual variability, some subjects may suffer from social stress in permanent group housing. Although very rare, fear reactions, mild agonistic behaviors and stereotypical locomotory behaviors were recorded in group housed dogs and not in pair-housed dogs. Pair housing was

associated with higher levels of inactivity and an increase in time spent in a lying posture ($T=2.37$, $p=0.03$), indicating that these dogs should be provided with an adequate amount of time for exercise. Both housing conditions may be a suitable solution for long-term shelter dogs if individual coping strategies and social needs are taken into account. Animal-based measures of welfare could be employed to develop and validate a welfare assessment certification system for long-term shelter dogs.

Key words: shelter dog; long-term housing; welfare; behavior

THE STUDY OF THE BEHAVIOR OF DOMESTIC ANIMALS: FROM ARISTOTLE THROUGH DARWIN TO TODAY

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Domestic species have a special status to naturalists and biological scientists. Aristotle held a very broad view on adaptations of animals. Darwin and other 19th century scientists who interested in evolution made assessments of canine speciation that proved to be incorrect. In contrast, companion animals in France today receive only a small share of scientific behavioral research. Unfortunately, many assessments of companion animal behavior are idiosyncratic and not scientifically evaluated. The prevalence of subjective assessments over scientific approaches is counter-productive. Veterinary ethology, as a new discipline, has two aims: stimulating a dynamic research program in the ethology of companion animals, and producing sound scientific results useful to clinicians treating companion animal behavioral disorders. As part of this we can ask whether two concepts, dominance hierarchy and attachment, are relevant to a better understanding of dog-human relationship.

Key words: ethology; dog behavioral research; veterinary ethology

SIGNAL DETECTION THEORY TO EXPLAIN DIFFERENCES IN HUMAN-DOG COMMUNICATION IN MOTION

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In psychology, the signal detection theory is used to assess the performance in recognition and implies that, to observe a response, two processes are of importance: the sensory response and the judgment response. We conducted an