

# CICLOS DE CHARLAS EN IDIOMA INGLÉS

**Lunes 29 de abril de 2019**

18 hs Sala de Conferencias - DBByF

***How can you tame a wolf?***

***A comparative study of canine social cognition***



***Enikő Kubinyi***

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del departamento de etología de la Universidad Eötvös Loránd de Budapest  
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***Senior family dog project:  
Studying cognitive aging  
in dogs using an interdisciplinary approach***

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**Destinadas a docentes, alumnos y a todos aquellos interesados en la etología,  
la biología del comportamiento, las neurociencias y la cognición animal.**

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### **Lunes 29 de Abril: HOW CAN YOU TAME A WOLF? A COMPARATIVE STUDY OF CANINE SOCIAL COGNITION**

*Enikő Kubinyi*, Department of Ethology, Eötvös University, Budapest, Hungary; eniko.kubinyi@ttk.elte.hu

The ancestors of dogs left their original ecological niche and moved close to humans. Genetic and ontogenetic effects enabled them to show some human-like behaviours, to such an extent, that nowadays, numerous owners consider their dogs as family members or children.

Meanwhile dogs' closest relative, the wolf, remained wild. If we want to learn what the differences are between domesticated dogs and modern wild wolves, we can compare similarly socialized dogs and wolves living in the same environment. Our research group did so, and has raised 13 wolves and 11 mixed-breed dogs. Compared to tame wolves, dogs show enhanced controllability that surfaces in better trainability. Dogs also show reduced fear/aggression and increased tolerance toward humans, which allows them to interact with us from a close range and learn more about our behaviour. In addition, dogs have a tendency to develop strong attachment toward humans that forms the basis of developing the social competence needed for successful social adaptation. It is clear that in an anthropogenic environment dogs display human-like social competence after much less socialization and experience than wolves. It is proposed that the altered traits can be explained as the direct or indirect consequences of mild neural crest cell deficits during embryonic development.

This talk introduces the domestication of dogs, presents videos about the hand-raising method and the experiments.

### **Martes 30 de Abril: SENIOR FAMILY DOG PROJECT: STUDYING COGNITIVE AGEING IN DOGS USING AN INTERDISCIPLINARY APPROACH**

*Enikő Kubinyi*, Department of Ethology, Eötvös Loránd University, Budapest, Hungary; eniko.kubinyi@ttk.elte.hu

Ageing, the process of becoming old, affects every organ. However, adapting to changes in the body is possible as long as the brain remains healthy. Therefore, ageing research needs to focus on healthy brain ageing, or in other words, on successful cognitive ageing. In the Senior Family Dog Project, launched in 2016, our aim is to explore the cognitive ageing of family dogs in a complex way, using an interdisciplinary approach.

**Behaviour:** We found by using questionnaires (N=1207) that in parallel with the increase of the cognitive dysfunction scale score and the decrease of the communication scale score, the owners' positive attitude decreased with the dog's aging. In a cognitive battery we detected age-related declines in memory, problem-solving ability, discrimination/reversal learning ability, and novelty seeking in healthy family dogs without any previous training (N=127).

**Neuroscience:** The amplitude of sleep spindles (promising EEG markers of aging and cognition), declined with age, as in humans. In addition, we set up the methodological background to study resting state fMRI networks of awake ageing dogs, and investigated age-related changes in brain morphology by MRI. Preliminary results (N=7) indicated that the median ventricular enlargement over a four-year period was between 37%-58%. However, dogs' ability of staying

stationary voluntarily in the MR scanner, demanding high trainability, suggests that brain plasticity might compensate the effects of brain atrophy.

Molecular biology: Based on dog cadavers donated by dog owners, similarly to human donation systems, we established the Canine Brain and Tissue Bank, which can be used for e.g. investigating the role of autophagy-related genes in neural ageing. We also started a genome-scale analysis of Methuselah dogs (17-27 years old) to search for putative longevity variants.

Although we detected significant age-related deterioration of brain and brain function even in healthy dogs, ageing has a bright side as well. Older dogs are calmer and more knowledgeable (e.g. know more words according to their owners), and in association with these traits they were reported as more often dominant over younger individuals when kept in groups (N=1151).

The results of the project are expected to provide guidelines for a healthy lifestyle towards successful ageing, to aid our understanding of the biological background of cognitive ageing in order to increase both canine and owner welfare.

### **CV Resumido:**

Enikő Kubinyi is a senior research fellow at the Department of Ethology, Eötvös Loránd University. She is the Principal Investigator of the Senior Family Dog Project and the Canine Brain and Tissue Bank which explores the cognitive ageing using an interdisciplinary approach, supported by an ERC Starting Grant.

Kubinyi holds a PhD in Ethology, and degrees in Biology, Video communication, Biology teaching. She joined the Family Dog Research Project, the first and largest research group to study dog-human relationship in 1994. She also participated in research projects at the Sony Computer Science Laboratory, Paris, at the University of Sussex, England, at the MTA-ELTE Statistical and Biological Physics Research Group, and the MTA-ELTE Comparative Ethology Research Group.

Kubinyi has received several awards (e.g. L'ORÉAL-UNESCO For Women in Science 2018; Junior Prima 2009; APA Frank A. Beach Comparative Psychology Award 2004). She is a fellow of the Young Academy of Europe since 2017.

Kubinyi lectures in behavior genetics, animal personality, and the evolution of canines. She has two science blogs for the general public, manages the Family Dog Project's social media sites. She is married and has three children.