Cognitive Ecology: introduction to theory and research practices

General information

- Lecturer: Dr. Valeria Mazza, Department for Ecological and Biological Sciences
- Language: English
- Dates: October 2024
- Time: 10:00 - 18:00 with 45-60 minutes lunch break
- Location: TBA
- Credits: 3

Aims

The purpose of this course is to acquire working knowledge of research that integrates cognitive and behavioural studies at the ecological level.

Cognition refers to the processes of acquiring, retaining, and using information. Animals rely on a wide variety of information to interact with their environment and these interactions affect survival and reproduction. Cognitive ecology represents an integration of psychology and ecology, examining cognitive processes that allow animals to solve fitness-related problems (Real, 1993).

The course focuses on understanding how animals use their cognitive abilities to adapt to their ecological surroundings. During the course participants will acquire the basic principles to design experiments aimed at assessing different aspects of cognition via behavioural analyses, and will familiarise with the practical procedures of acquiring and interpreting data from video footage of several taxa.

Pre-requisites

The course is aimed at doctoral candidates of the course “Ecology and Sustainable Management of Environmental Resources”. Basic knowledge of behavioural ecology, experimental design, and statistics (R) is presumed.

Topics covered

- Memory and learning, including social learning
- Advanced cognition, including theory of mind, metacognition, and self-awareness
- Innovation and problem-solving, including tool use
- Navigation and route learning

Structure

Blockcourse. Instruction days will be full days, with ca. 1 h lunch break.

During the 3 days interactive lectures and practical exercises will be alternated during the day. Practicals include experimental design targeted on a specific research question, video analyses and data collection.

IMPORTANT: bring your own laptop, ready to read videos and work with data-exploration in R (i.e. make sure you have R studio and basic packages already installed).