

UNDERSTANDING BAT VOCAL LEARNING TO GAIN INSIGHT INTO SPEECH AND LANGUAGE

SONJA C. VERNES

sonja.vernes@mpi.nl

Neurogenetics of Vocal Communication Group, Max Planck Institute for
Psycholinguistics, PO Box 310, Nijmegen, 6500 AH, The Netherlands
Donders Institute for Brain, Cognition and Behaviour, Kapittelweg 29,
Nijmegen, 6525 EN, The Netherlands

The comparative approach can provide insight into the evolution of speech, language, and social communication by studying relevant traits in animal systems. Bats are emerging as a model system with great potential to shed light on these processes given their learned vocalisations, close social interactions, and mammalian physiology. Bats are highly social animals that have developed sophisticated vocal and auditory systems for navigation and communication. Furthermore, their small size, amenability to manipulation, and the rich history of studying the neuroethological of echolocation in bats, makes them an excellent system to model the biology underlying vocal learning behaviour. I will discuss the evidence for vocal learning in bats. This encompasses our understanding of the abilities bats have displayed for vocal learning, what is known about the timing and social structure needed for such learning, and current knowledge about the prevalence of the trait across the order. I will highlight approaches being undertaken to understand the neurobiological and genetic mechanisms underlying this complex behaviour, and raise some key questions that should be answered to advance our understanding of the biological encoding and evolution of speech and spoken communication.