



How and Why Animals Crunch Numbers

Wednesday, March 31st
11am-12pm ET

Prof. Andreas Nieder



Numerical competence, the ability to estimate and process the number of objects and events, is a cognitive capacity that also determines an individual's survival and reproduction success. Numerical assessments are ubiquitous in a broad range of ecological contexts. Animals benefit from numerical competence during foraging, navigating, hunting, predation avoidance, social interactions and reproductive activities. The internal number representations determine how animals perceive stimulus magnitude which, in turn, constrains animals' spontaneous decisions in the wild. In this talk, I outline the characteristics of numerical representations and how they affect the behaviors of different species in ecologically-relevant situations.

Prof. Andreas Nieder is the Director of the Institute of Neurobiology at the University of Tübingen, Germany. He studied Biology/Zoology at the Technical University in Munich and received his PhD in Neurobiology from RWTH Aachen University. Afterwards, he was a postdoc at the Picower Center for Learning and Memory at MIT, and an independent junior research group leader at the Hertie Institute for Clinical Brain Research, University of Tübingen. [His research](#) takes an evolutionary-comparative approach to understand the brains and behaviors of crows, macaques, and humans, with a focus on number representations, categories and concepts, learning and memory, consciousness, and vocalization. In addition to numerous articles, Prof. Nieder authored the book "[A Brain for Numbers: The Biology of the Number Instinct](#)", and his work has been featured in Scientific American, The Guardian, Science Daily, and other media outlets.

Hosted by the [Soft Math Lab](#).

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