

SEEWIESEN

Max Planck Institute
for Ornithology

LECTURE SERIES

FALL/WINTER 2017/18



MAX-PLANCK-GESELLSCHAFT

THURSDAY | December 14, 2017 | 13 P.M. | HOUSE 4 LECTURE ROOM

WOLFGANG ENARD

Ludwig Maximilian University Munich | Host: Department Gahr

Molecular perspective on speech and language evolution

Humans are a remarkable species, especially because of the remarkable properties of their brain. Since the split from the chimpanzee lineage, the human brain has acquired abilities to better vocally learn and to use language. To better understand the molecular basis of these changes is of great biological and biomedical interest. However, all the about 16 million fixed genetic changes that occurred during human evolution are fully correlated with all molecular, cellular, anatomical and behavioral changes that occurred during this time. Hence, as humans and chimpanzees cannot be crossed or genetically manipulated, no direct evidence for linking particular genetic and molecular changes to human brain evolution can be obtained. Here, I sketch a framework how indirect evidence can be obtained and discuss in particular findings related to the speech-associated gene FOXP2.

WHO IS WOLFGANG ENARD

2003 PhD University of Leipzig, Max Planck Institute for Evolutionary Anthropology, Leipzig
2013 Postdoctoral Fellow and group leader, Max Planck Institute for Evolutionary Anthropology, Leipzig
2013- Professor (W3) of Anthropology and Human Genomics (Chair), Department Biology II, Ludwig Maximilians University, Munich

SELECTED PUBLICATIONS

Enard, W., Gehre, S., Hammerschmidt, K., Holter, S.M., Blass, T., ... Paabo, S. (2009). A humanized version of Foxp2 affects cortico-basal ganglia circuits in mice. **Cell** 137, 961-971

Schreiweis*, C., Bornschein*, U., Burguiere, E., Kerimoglu, C., Schreiter, S., Dannemann, M., Goyal, S., Rea, E., French, C.A., Puliyadi, R., Groszer, M., Fisher, S.E., Mundry, R., Winter, C., Hevers, W., Paabo, S., Enard*, W., and Graybiel*, A.M. (2014). Humanized Foxp2 accelerates learning by enhancing transitions from declarative to procedural performance. **Proc Natl Acad Sci U S A** 111, 14253-14258

Enard*, W. (2016). The Molecular Basis of Human Brain Evolution. *Curr Biol* 26, R1109-R1117.
Ziegenhain, C., Vieth, B., Parekh, S., Reinius, B., Guillaumet-Adkins, A., Smets, M., Leonhardt, H., Heyn, H., Hellmann, I., and Enard*, W. (2017). Comparative analysis of single-cell RNA sequencing methods. **Mol Cell** 65, 631-643.

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