

## **Internship Project: Investigating the evolution of genes associated with speech disorders and vocal behaviour**

Internship, Language & Genetics, Full-Time

The Max Planck Institute (MPI) for Psycholinguistics, Nijmegen, the Netherlands, is offering a 5-to-10-month MSc internship position in the Language & Genetics Department.

In this bioinformatics research internship, you will investigate the evolutionary history of key genes associated with speech disorders. Speech and language are unique human capacities that distinguish us from other animals, including the great apes, but their evolutionary origins remain unexplained<sup>1,2</sup>. Investigations of *FOXP2*, a regulatory gene whose loss-of-function causes childhood apraxia of speech accompanied by linguistic impairments, revealed two fixed protein-coding differences from chimpanzees<sup>2</sup>. Though these differences are shared with extinct archaic hominins, *FOXP2* is located in a genomic region that is devoid of Neanderthal introgression<sup>3</sup>. Since the discovery of *FOXP2*, advances in genomic sequencing have implicated additional DNA variants in an array of different genes in childhood apraxia of speech<sup>4</sup>. In this internship, you will compile gene sets related to childhood apraxia of speech and vocal behaviour, and go on to investigate the evolutionary histories of these genes across a range of timescales. In particular, you will use bioinformatic methods to compare the human sequences with those of Neanderthals, apes, primates and other mammals, and make use of public datasets like gnomAD, the 1000 Genome Project, the UK Biobank and methods like BLAST. You will investigate how genomic locations of these genes compare to regions that are either depleted or enriched for Neanderthal introgression, and you will test for evidence of natural selection. You will learn how to work within a Linux environment and gain experience with coding in R and bash.

The internship duration is flexible but will be between 5 and 10 months.

### **Requirements**

- You are a MSc student enrolled on a Master's programme such as Biological Sciences, Evolutionary Biology, Biotechnology, Bioinformatics, Cognitive Neuroscience, Computing Science, or similar
- You have Bachelor-level knowledge of Statistics and/or Genetics
- Bachelor-level programming expertise (e.g. R or Linux) is an advantage
- You have excellent knowledge of English

### **What we offer you**

- Experience in handling of molecular genetic data
- Experience in evolutionary investigations
- A nice team

### **Conditions of employment**

- 5-10 months starting in Summer or Autumn 2026 (exact date can be negotiable)
- Full-time

- This is a research internship without salary

### **Application procedure**

- The internship will last at least five months; the starting date is negotiable. Note that the MPI cannot remunerate any work during this internship.
- To apply, please submit your application **including a motivation letter** (max. 1 page), and **your CV** and contact details [via this link on our recruitment portal](#).

**The closing date for applications is 3<sup>rd</sup> May 2026.**

For further information, please get in touch with Carmen Ramoser ([carmen.ramoser@mpi.nl](mailto:carmen.ramoser@mpi.nl)).

#### *About the Language and Genetics department*

At the [Language and Genetics Department](#), we aim to uncover the DNA variations which ultimately affect different facets of our communicative abilities, not only in children with language-related disorders but also in the general population. In addition, we hope to trace the evolutionary history and worldwide diversity of key genes, which may shed new light on language origins.

#### *About our institute*

The [Max Planck Institute for Psycholinguistics](#) is a world-leading research institute devoted to interdisciplinary studies of the science of language and communication, including departments on genetics, psychology, development, neurobiology and multimodality of these fundamental human abilities.

We investigate how children and adults acquire their language(s), how speaking and listening happen in real-time, how the brain processes language, how the human genome contributes to building a language-ready brain, how multiple modalities (as in speech, gesture and sign) shape language and its use in diverse languages, and how language is related to cognition and culture, and shaped by evolution.

We are part of the [Max Planck Society](#), an independent non-governmental association of German-funded research institutes dedicated to fundamental research in the natural sciences, life sciences, social sciences, and the humanities.

The Max Planck Society is [an equal opportunities employer](#). We recognise the positive value of diversity and inclusion, promote equity and challenge discrimination. We aim to provide a working environment with room for differences, where everyone feels a sense of belonging. Therefore, we welcome applications from all suitably qualified candidates.

Our institute is situated on the campus of the Radboud University and has close collaborative links with the [Donders Institute for Brain, Cognition and Behaviour](#) and the [Centre for Language Studies](#) at Radboud University. We also work closely with other child development researchers as part of the [Baby & Child Research Center](#).

1. <https://www.mpi.nl/departement/language-genetics/2/human-language-evolution>

2. Arnon, I. et al. What enables human language? A biocultural framework. *Science* 390(6775), eadq8303 (2025).
3. Fisher, S. E. Human Genetics: The Evolving Story of FOXP2. *Curr. Biol.* 29, R65–R67 (2019).
4. Kuhlwilm, M. The evolution of FOXP2 in the light of admixture. *Curr. Opin. Behav. Sci.* 21, 120–126 (2018).
5. <https://www.mpi.nl/department/language-genetics/2/rare-mutations-disrupting-speech-and-language-development>