



PhD Position in Speech Neuroscience

Sensorimotor learning and retention mechanisms in people who stutter

Starting date: 1/10/22, Application deadline: 30/06/22

Context

Stuttering is a neurodevelopmental disorder of speech fluency, whose etiology is not well understood yet. Among the possible causes for that disorder, several authors and studies point out to a sensorimotor deficit, with less accurate and stable internal models in people who stutter (Max et al. 2004; van Lieshout et al. 1996).

Scientific objectives

In complement to this existing literature, the current project aims at exploring the hypothesis that people who stutter (PWS) may present a learning and memory deficit, affecting the continuous update of internal models when exposed to environmental perturbations or altered sensory feedbacks. To that goal, several experiments of sensori-motor perturbation will be conducted, following an approach mixing behavioral and neurophysiological (Electroencephalography):

Axis1 – to compare sensorimotor adaptation and learning in perturbation tasks affecting the “targets” (spectral targets in the case of speech articulation, spatial ones in the case of arm movements) vs. the timing of the production (delayed feedbacks).

Axis2 – to explore whether this potential learning deficit is specific to speech, or whether it generalizes to other sensory modalities than audition and to other effectors than those involved in speech production

Required skills

We are searching for a highly motivated candidate with:

- a Master degree (M.Sc., M. Eng. or equivalent) in cognitive sciences, computer science, or signal processing
- knowledge and interest in speech, motor control and neurosciences.
- good programming skills in Matlab, Python or R
- experience in EEG recordings and analysis

Lab and supervision

The PhD candidate will be supervised by Maëva Garnier at GIPSA-lab and Fabien Cignetti at TIMC, in collaboration with Pascal Perrier. He/she will join the PCMD team of GIPSA-lab in Grenoble, composed of six PhD students and 12 researchers and engineers (<http://www.gipsa-lab.grenoble-inp.fr/en/pcmd.php>)

Application instructions

The application consists of a motivation letter, CV (with detailed list of courses related to computer science, signal processing, and neuro-cognitive science), names and contact details of two references, and transcripts of grades from under-graduate and graduate programs.

Contact

Maëva Garnier	Email: maeva.garnier@gipsa-lab.fr	Phone: (+33) 4 76 57 50 61
Fabien Cignetti	Email: fabien.cignetti@univ-grenoble-alpes.fr	Phone: (+33) 4 76 63 71 10
Pascal Perrier	Email: pascal.perrier@gipsa-lab.fr	Phone: (+33) 4 76 57 48 25