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# Project

## Phonetic convergence, imitation and sensorimotor adaptation in speech

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## Abstract

Recent studies on sensorimotor adaption, on phonetic convergence and on speech imitation suggest that phonemic goals are defined in multidimensional motor and sensory spaces in the speaker and listener brains and are partly driven by sensorimotor control mechanisms. However, adaptation studies in speech production have focused primarily on the flexibility of motor processes, without regard for possible adaptive changes of phonemic sensory representations, while, on the contrary, studies on phonetic convergence and imitation have focused primarily on the plasticity of auditory speech representations. Through acoustic and electro - encephalography (EEG) measures, the goal of the proposed research project is to explore for the first time and within the same set of participants the interplay between motor compensation due to changes in auditory feedback, on the one hand, and phonetic convergence and voluntary imitation towards another speaker's speech, on the other hand. Our main hypothesis is that adaptive plasticity of phonemic sensorimotor goals continuously draws on both motor knowledge and perceptual learning from the external speech environment. This project represents a novel combination of research questions and experimental methods that have been explored separately in prior studies, but never before combined into a single study. The examination, at both the acoustic and neural level, of phonetic convergence, imitation and adaptation to altered auditory feedback will provide valuable new insights into speech motor control and perception, and in particular how exposure to another speaker's speech enables a listener to further specify the control of her/his future speech actions.

## Publications

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