

Project

Pre-attentive and attentive syllabic perception in professional singers and non-musicians

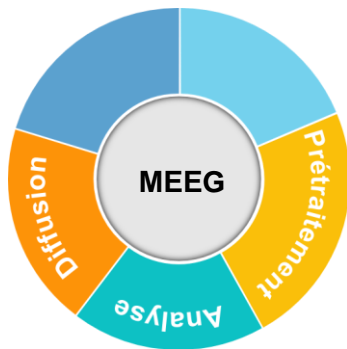
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Abstract

Within the theoretical framework of transfer of training, this study aims to determine whether professional singers, trained in music and singing, perceive unfamiliar syllables (from an unknown foreign language) better than control non-musicians at both the pre-attentive and attentive levels. On top of studying music, singers often need to produce and to perceive words and syllables in a foreign language. We will present syllables from familiar and unfamiliar phonemic repertoires (French and Thai) and we will record changes in brain electrical (EEG) and magnetic activity (MEG) simultaneously to be able to directly compare the results gained from these two complementary methods. We hypothesize that professional singers will be more sensitive than non-musicians to unfamiliar syllables that vary in pitch and aspiration, two segmental features that do not belong to the French phonemic repertoire. This should translate into larger amplitude and shorter latency of the Mismatch Negativity (MMN) at the pre-attentive level and of the P3b component at the attentive level. Moreover, a second objective is to localize the brain generators of the MMN and P3b recorded at the scalp, with the hypothesis that source localization will be more precise for MEG than for EEG. Finally, a third objective is to reconstruct the time course of the activity of the cortical structures involved in the elicitation of MMN/P3b. Results will foster a deeper understanding of the influence of singing practice on the perception of syllables, the basic units of language perception, with potential implications for second language learning and more generally for education since early singing practice may help perceive and pronounce speech sounds. They will also help us pinpoint the respective advantages of the MEG and EEG methods for a better understanding of brain plasticity associated with transfer of training.

Publications

■ Fiche-résumé contribution CREx



SING SING

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in professional singers and non-musicians**

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Contribution : Aide au prétraitement et à l'analyse de
données simultanées EEG et MEG. Formation des
étudiants au traitement des données (MNE-python).

■ Prétraitement –

■ Analyse –

■ Diffusion –