Multi-echo fMRI for overt speech production

Flores-Coronado M.A.,
Martin C. &
Caballero-Gaudes C.

SPiN lab

Overview

Project phases

1. Methods for *fMRI speech production* (**Methods development**).

2. *Foreign sound learning*, a fMRI experiment (**Methods implementation**).

Magnetic Resonance Imaging (MRI) *Methods development*

How does it work?

Magnetic Resonance Imaging (MRI) *Methods development*

How does it work?

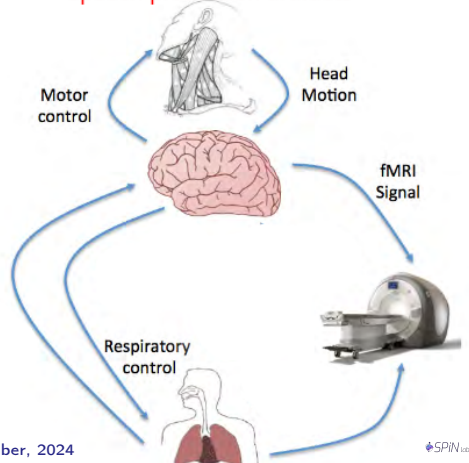
Magnetic Resonance Imaging (MRI) *Methods development*

How does it work?

Magnetic Resonance Imaging (MRI) *Methods development*

Measument noise sources!

Speech production artifacts



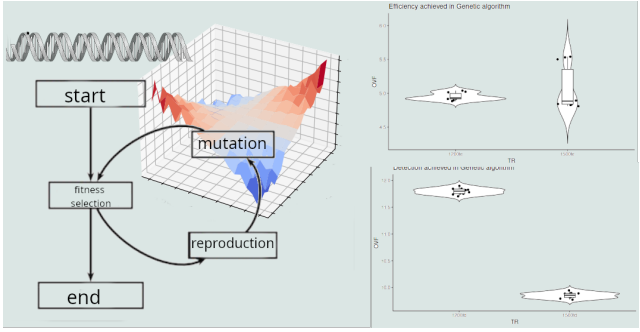
fMRI parameters *Methods development*

Problem

What's the best to sample speech production with fMRI?

Work done

Comparition of computer simulations with different methods.



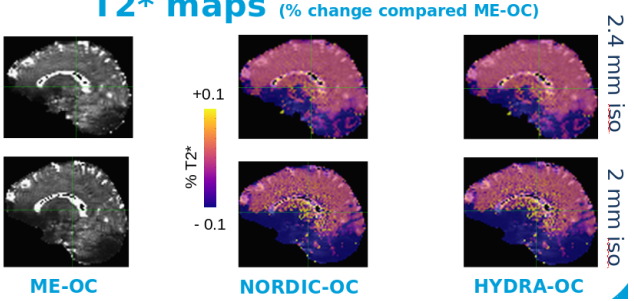
fMRI parameters *Methods development*

Problem

How do we clean noise originated in MRI machine?

Work done

Development and comparison to reduce noise and improve signal measurement.



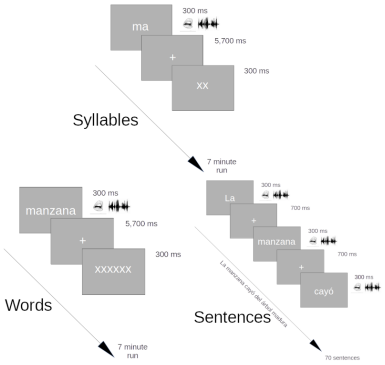
Speech denoising *Methods development*

Problem

The more speech, the more artifacts.

Work done

Speech experiment (e.g., syllables, words, sentences).



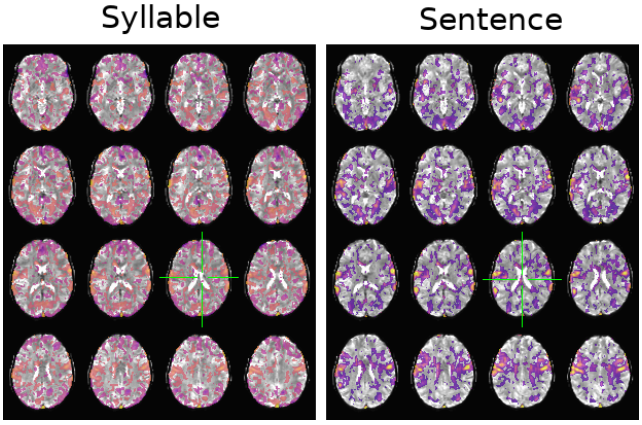
Speech denoising *Methods development*

Problem

Need to classify artifacts from signal.

Work done

Build signal classification algorithm (in course).



Thanks

Thanks!
Eskerrik asko!

"la Caixa" Foundation

BASQUE CENTER ON COGNITION, BRAIN AND LANGUAGE

EUSKO JAURLARITZA GOBIERNO VASCO
HEZKUNTZA, UNIBERTSITATE ETA IKERKETA SAILA
DEPARTAMENTO DE EDUCACIÓN, UNIVERSIDADES E INVESTIGACIÓN

GOBIERNO DE ESPAÑA
MINISTERIO DE EDUCACIÓN Y FORMACIÓN PROFESIONAL