Thesis Project Form

Title (tentative): The Peripersonal and reaching Spaces: predictive patterns of multisensory facilitation

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Description

Motivation and application domain
Multisensory peripersonal space (PPS) and arm reaching space (ARS) have allegedly being used interchangeably to refer to the space close to body parts, as shown by 45% of papers published on the topic since the seminal work of Rizzolatti and colleagues. Yet, evidence exists of their different neuroanatomical circuitries and neurophysiological as well as behavioral properties. On the other hand, evidence also exist pointing to the sharing of similar plastic effects following tool-use.

General objectives and main activities
In a series of experiments, we will try identifying the spatial patterns of multisensory facilitation of the peripersonal (PPS) as well as the arm reaching space (ARS), with and without tool-use manipulation. Multivariate and univariate analysis and model fitting will be used to verify whether and how the facilitation patterns may reveal the main distinctive features of peripersonal space. These expected findings should call for a refinement of theoretical models of PPS and ARS, to establish whether they can or cannot be considered as the same spatial representation.

Training Objectives (technical/analytical tools, experimental methodologies)
Behavioural methods, fMRI methods, modelling, statistics, MATLAB and R programming skills

Place(s) where the thesis work will be carried out: Impact Lab, Inserm U1028 CRNL Lyon

Additional information

Maximum number of students: 1

Financial support/scholarship: ERASMUS+