Master Thesis: Electrophysiology of predictive processes in action-perception interactions and the sense of agency

The Brainlab offers the opportunity for brilliant young researchers or very talented students to join our adventure. If you are passionate for science, highly motivated, hard-worker and ambitious seeking for advanced training in cognitive and auditory neuroscience in an incomparable and inspiring working environment, we want you!

We can supervise the official research period or the Master thesis in either the Master of Neurosciences or in International Master Program in Behavior and Cognition.

Description
The general objective of the research period will be to provide the student with the basic and necessary skills for scientific research in the area of cognitive neuroscience. The student will carry out an empirical study with the electroencephalography (EEG) technique. In doing so, the student will be familiarized with the scientific method, and become skilled in the recording and interpretation of EEG and event-related brain potentials to study and assess cognitive function and its abnormalities.

The training will take place at the BrainLab, where the student will integrate in the research line “Predictive processes in motor-sensory interactions”, in which we investigate how voluntary actions shape perception, and how the interactions between action and perception give rise to the sense of agency (for more information visit the project website). The student will participate in all the activities of the BrainLab, including lab meetings, seminars and talks, running experiments, etc.

The training obtained during this research period should set the basic skills to afford a future more extended training as researcher or clinical psychophysiolologist/neuroscientist at professional level.

Tasks and acquired skills

<table>
<thead>
<tr>
<th>Skills to be acquired</th>
<th>Specific Tasks</th>
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<tbody>
<tr>
<td>Use of databases for scientific information</td>
<td>Analysis of research papers</td>
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<td>Analysis of scientific publications in cognitive neuroscience</td>
<td>Setup of experiments: stimulus sequences and recording parameters</td>
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<td>Introductory notions to experimental designs in EEG/ERP research</td>
<td>Attachment/removal/disinfection of electrodes</td>
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<td>Recording and analysis of electric brain activity</td>
<td>Registration of EEG data</td>
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<td>Statistical analysis and graphic representation of results</td>
<td>Graphic and statistical analysis of EEG and ERPs</td>
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<td>Conclusion drawing and preliminaries of scientific writing</td>
<td>Writing of research and/or clinical reports</td>
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<td>Bibliographic search and classification of documents</td>
<td>Attendance to regular lab meetings</td>
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<td>Other research activities</td>
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Requirements

Language
The working language of the group is English, thus a high level of this language is expected to be able to participate in the group’s activities

Dates
You should join the lab no later than mid-October, preferably already in September. The Master thesis period will finalize in June. The schedule for the specific tasks is flexible.

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Skills required
Undergraduate courses in Neuroscience and Cognitive/Experimental Psychology
Computer skills (preferably, with notions in Matlab)

Details
Tutor Dr. Iria San Miguel (isanmiguel@ub.edu)
Research group BrainLab
Center Dep. of Clinical Psychology and Psychobiology and Institute of Neurosciences, Psychology Faculty (Campus Mundet), UB

Eligible Master programs
- M.S. Research in Behavior and Cognition
- Neurosciences Master