Proposal of Master Research Project (MRP) for the Academic Year 2026-27

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Title of the MRP:

Interrupting perception: temporal gaps and the dynamics of evidence accumulation

Summary of the MRP:

This project builds on prior evidence showing that brief sensory interruptions—even when not consciously perceived—can reorganize the temporal weighting of information during perceptual decision-making. The aim of this study is to characterize how the timing and awareness of such interruptions shape evidence accumulation. Participants will perform a dynamic perceptual decision task in which short temporal gaps are introduced either early or late in the stimulus stream, and are either subliminal or supraliminal. By analyzing behavioral responses (choices and reaction times), the study will assess whether these interruptions produce a transient reset or reweighting of sensory evidence, and whether such effects differ depending on conscious awareness. This approach seeks to refine current accounts by specifying the boundary conditions under which sensory interruptions influence decision formation.

Methods and technology involved in the MRP:

The project will combine behavioral measures, electroencephalography (EEG), and computational modeling to investigate how brief sensory interruptions affect perceptual decision-making. Participants will perform a dynamic visual discrimination task while EEG is recorded, allowing the extraction of time-resolved neural markers of evidence accumulation. Temporal gaps will be introduced at controlled points and manipulated in terms of awareness (subliminal vs. supraliminal). Behavioral data (choices and reaction times) will be analyzed alongside EEG signals to assess how interruptions modulate both performance and underlying neural dynamics.

In addition, a simplified decision-making model will be fitted to the behavioral data to characterize changes in parameters such as accumulation rate, urgency or boundary separation, providing a computational account of how sensory evidence is reweighted following interruptions. This multimethod approach will enable linking observable behavior, neural activity, and formal modeling within a unified framework.

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