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THE NEUROPHENOMENOLOGY OF VOLITION: REVISITING THE LIBET TASK WITH FIRST-PERSON METHODS

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Background: In the Libet task, participants are asked to voluntarily press a button at a time of their own choice and to report subsequently the moment when they made the decision to act while their EEG is recorded. The action-related readiness potential (RP) found in the EEG usually starts before the decision time. We have argued earlier that this time paradox can be explained by the process of backward sampling EEG data and by participants having a higher probability of pressing the button during certain phases of the continuously fluctuating slow cortical potentials (SCP). Related to this hypothesis is the assumption that the ‘urge to act’ reported by participants corresponds to a negativity in the SCP signal.

Aim: The aim of our investigation was to study the experiential contents of experienced meditators during positive and negative deflections of the readiness potential prior to voluntary movements. Furthermore, we aimed at classifying the blinded reports according to their phenomenological content into two distinct patterns that can be in turn correctly linked to either positive or negative deflections of the EEG.

Methods: We performed a modified version of the Libet experiment with experienced meditators (N=17) to study this hypothesis. Based on real-time EEG analysis the task was stopped once a trial occurred during a clear negative or clear positive SCP. We then conducted a microphenomenological interview. With the help of this special interview technique, the precise experiential dynamics characterizing the decision moment were recalled and examined, resulting in a rich phenomenological description.

Results: Diachronic analysis of the interviews revealed two distinct patterns: one in which an impulse to press the button was felt yet not acted out, before a second impulse was felt and acted upon. In the other pattern only one impulse was felt and acted upon. Based on the blinded analysis of the phenomenological reports, trials were classified as belonging to one of two different categories, i.e. positive or negative SCP. This was correct in 10 out of 17 trials ($p=0.31$).

Conclusion: Our approach shows how in a neurophenomenological approach EEG data and phenomenological first-person data can be integrated in a systematic and meaningful way. Meditation can serve as a research method in the sense that meditators are able to provide detailed introspective descriptions on volitional processes.

Keywords: Libet-task, Neurophenomenology, Microphenomenological interview, Slow cortical potentials, Readiness potential

Publications:

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