

*Exploring the multidimensional memory representation of our daily life experience*

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A current hallmark in Autobiographical Memory (AM) research is to unravel how individual real-life event episodes are encoded and retrieved from long-term memory. Research has shown that spatial, temporal and semantic features of an encoded event promotes clustered organization and representation of experienced event episodes' details are essential factors for the retrieval of autobiographical events. The aim of the current study is to test whether such organizational perspective can be quantified from brain patterns responses recorded when individual real life event episodes are retrieved from memory. To address this question, we recorded electroencephalographic activity (EEG) while participants retrieved their individual AMs cued by pictures taken automatically by a wearable camera from the past one-week daily life. Simultaneous GPS measures registered during the encoding week and were used to extract spatial features of the tested memories. Deep learning algorithms were used to automatically construct semantic clusters from the pictures. Neural patterns of EEG activity elicited by each of these cues were related then related to each of these memory organization features and related to memory recollection performance.

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