

EVENT ABSTRACT

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Exploration of unitization processes in episodic memory in Alzheimer's disease

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Binding (i.e., to link different components together) is a key mechanism for episodic memory formation. Normal aging is characterized by a decrease in episodic memory for associations. However, associative memory performance can be improved and age-related differences can even be suppressed when associations are unitized, that is when they are encoded as an integrated whole. A previous study in Alzheimer's disease (AD) showed that patients do not benefit from this particular type of encoding in episodic memory, so that their performance for unitized representations remains very poor. The aim of the current study was to assess whether the unitization mechanism itself (i.e., to integrate components into a whole) is impaired in AD or whether a global memory impairment affects all kinds of representations (unitized and non-unitized). We evaluated this hypothesis in thirteen mild Alzheimer patients and twenty healthy control participants. To systematically increase the demands on unitization, pictures of objects and animals were either left intact, separated into two fragments, or separated into four fragments. Participants viewed the pictures and had to unitize them first in order to recognize it and judge whether it would fit into a shoebox. In a subsequent recognition test where all pictures were intact, they had to retrieve pictures they saw earlier. An analysis of correct recognition of studied pictures showed a significant interaction between group and fragmentation level, indicating a decrease in Alzheimer patients' performance compared to control participants for pictures that were fragmented at study but not for pictures that were intact at encoding. These preliminary findings may suggest that the perceptual mechanism of unitization of fragmented stimuli is impaired in Alzheimer's disease.

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