Context Processing & Cognitive Control

There is accumulating evidence that age-related changes in cognitive control functions are associated with age differences in processing contextual information. Context processing refers to cognitive functions enabling the updating and maintenance of goal-relevant context information (e.g., task instruction) that serve the correct execution of tasks. Event-related potentials of the electroencephalograph (EEG) allow investigating potential mechanisms of context processing in younger and older adults mechanisms with a high temporal resolution. Thereby, it is possible to differentiate age differences in cognitive processes of task preparation from age differences in the later task execution.

The results of our EEG studies so far suggest that during task processing, older adults show deficits in the selection of goal-relevant context information and invest more processing resources in maintaining context information over time. As a consequence, older relative to younger adults seem to compensate emerging problems during task execution by a reactive manner of context processing and an increased monitoring of response conflicts. Age differences during task execution mainly occur whenever older adults have to flexible adapt to changing conflict demands.

Selected publications:

