**Using tDCS and ERPs to investigate the involvement of the left posterior parietal cortex in episodic memory retrieval**

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Recent functional neuroimaging studies consistently reported the activation of left lateral parietal cortex (LPPC) during episodic memory retrieval. However, it is unclear how the LPPC is causally related to memory retrieval. The present study employed transcranial direct current stimulation (tDCS) and event-related potentials (ERPs) to investigate the role of LPPC in memory retrieval. Participants engaged in three sessions of source memory task under three stimulation conditions: sham, anodal, and cathodal respectively. In each session, participants studied words that were presented with one of four faces in the first day and performed source memory judgments in the second day. The interval between two stimulation conditions was a week. tDCS was delivered over the P3 site of the 10-20 system for 15 minutes prior to the test phase and ERPs were recorded during the test phase. It was predicted that source memory performance and the left parietal Old/New effect, thought to index recollection process, would be modulated by the tDCS. We did not find the source memory performance and the left parietal old/new effect to be modulated by the tDCS. Nevertheless, there was a greater right frontal effect following the anodal stimulation in comparison to cathodal and sham stimulations. The findings suggest that post-retrieval monitoring might be modulated after LPPC stimulation.