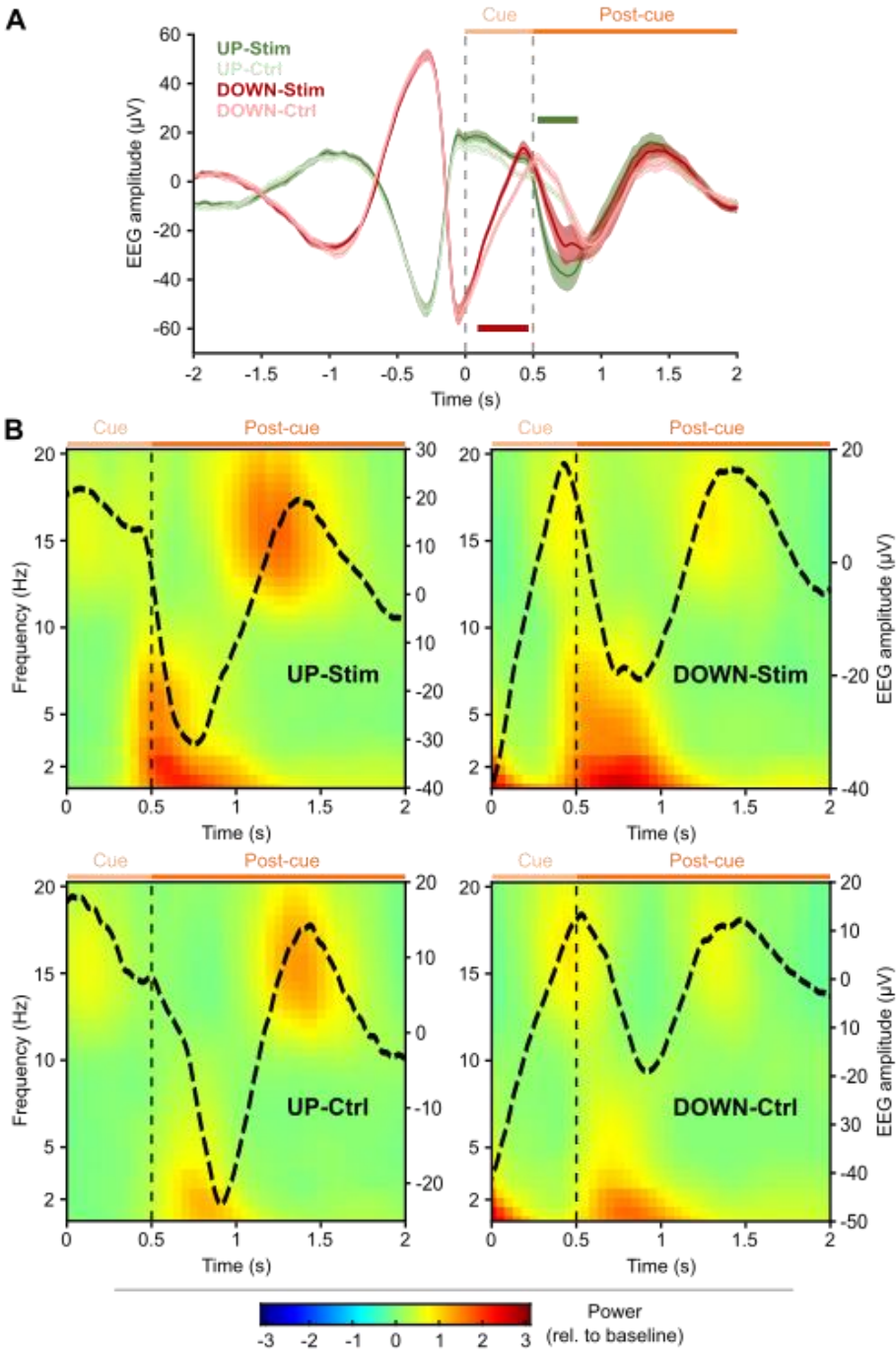


**Supplemental Material**

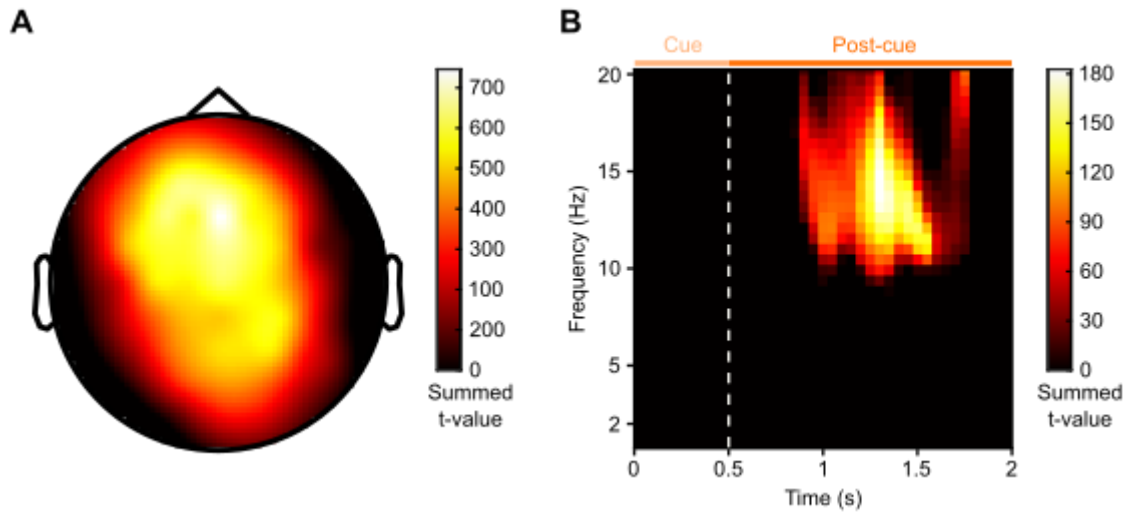
**Shaping overnight consolidation via slow-oscillation closed-loop targeted memory reactivation**

**Hong-Viet V. Ngo & Bernhard P. Staresina**

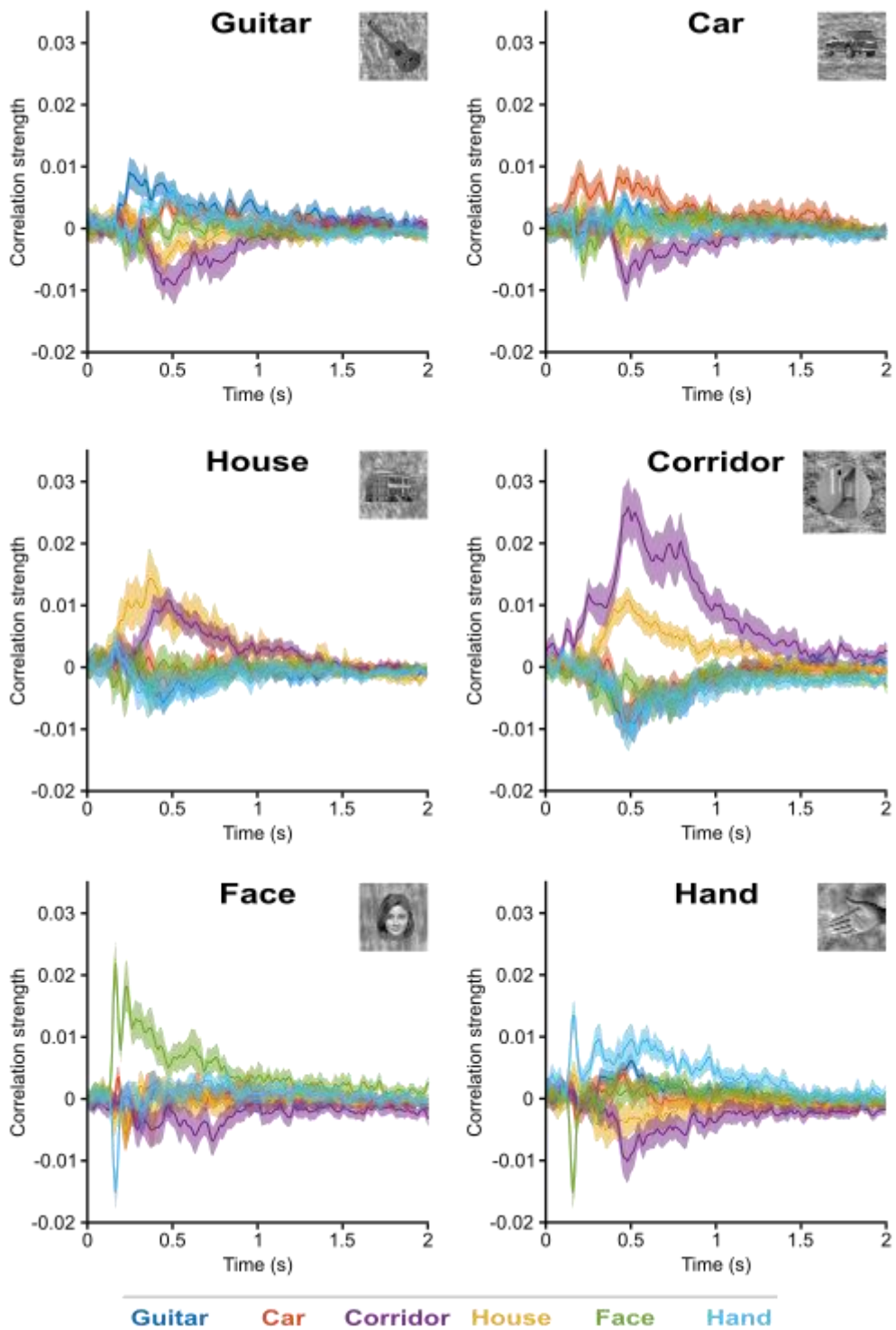
Supplemental Figures



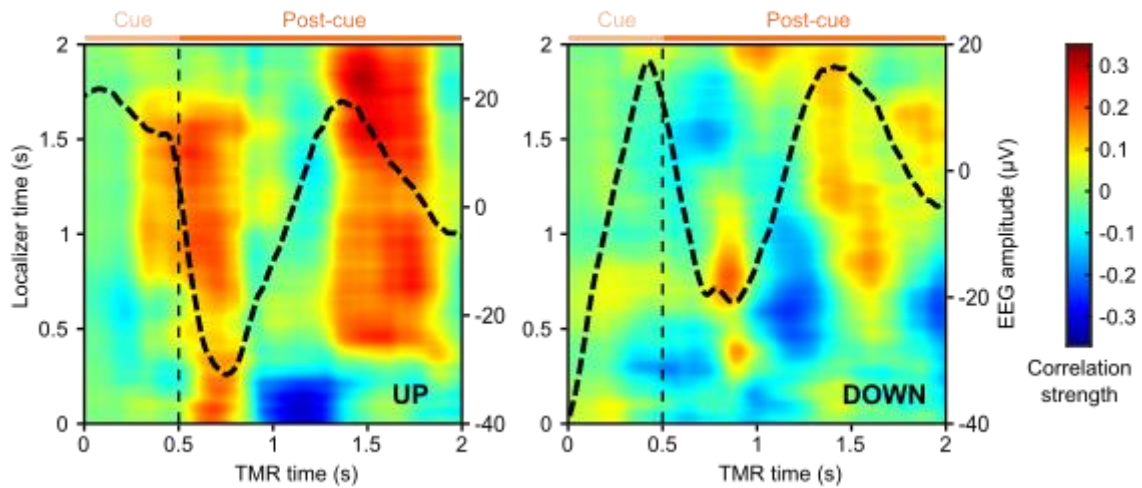
**Figure S1. Electrophysiological effects of TMR vs. control cues.** (A) Event-related potentials (ERPs) at Cz for UP-Stim (green), UP-Ctrl (light green), DOWN-Stim (red) and DOWN-Ctrl (light red). All data are shown as mean  $\pm$  sem across participants. Vertical dashed lines depict the on- and offset of TMR cues. Light and dark orange horizontal lines mark the cue and a post-cue interval, respectively. Green and red horizontal lines mark significant differences between the UP- and DOWN Stim vs. Ctrl conditions, respectively (all  $p < .05$ , corrected, statistical analysis performed for time  $> 0$ ). (B) Time-frequency representations (TFRs) at Cz for the UP-Stim (top left), UP-Ctrl (bottom left), DOWN-Stim (top right) and DOWN-Ctrl condition (bottom right), calculated time-locked to the cue-onset for frequencies between 1 and 20 Hz with the corresponding ERP superimposed (black lines, right y-axis). Color bar indicates the relative change in power to a baseline interval from -2.5 to -2 s. Vertical dashed line depicts the offset of TMR cues. Light and dark orange horizontal lines mark the cue and post-cue interval, respectively. Statistical comparisons of TFRs are presented in main Figure 3C.



**Figure S2. Whole-head EEG analysis of spindle effects.** (A) Topographical plot depicting the spatial distribution of summed *t*-values across time and frequency bins within the significant spindle cluster obtained from a whole-head statistical analysis. (B) Time-frequency representation derived from all channels contributing to the significant spindle cluster.



**Figure S3. Representational similarity of localizer.** Time-resolved within- (e.g., cars with other cars) and between-category (cars with houses, cars with faces etc.) similarities separately for each image category for a 2-s time window following a stimulus presentation ( $t = 0$  s).



**Figure S4. Localizer-TMR representational similarity.** Time by time correlation map showing reinstatement of target image categories during UP-TMR vs. UP-Control conditions (left) and DOWN-TMR vs. Down-Control conditions (right). X-axis represents TMR time, left y-axis represents localizer time. Dashed black lines (right y-axis) represent ERPs of the UP-TMR (left) and DOWN-TMR conditions (right). Vertical dashed line depicts the offset of TMR cues. Light and dark orange horizontal lines mark the cue and post-cue interval, respectively.