

Supplementary Material

Methods

Exclusion Criteria

Exclusion criteria included: psychiatric diagnosis, history of substance abuse, clinically evident signs of neurological impairment or disease (other than stroke⁴⁵), inability to perform the experimental task, and taking drugs known to hamper neuroplastic change (anticholinergics, GABAergics, or NMDA blockers). No one presented with dementia (≥ 26 or greater on the Mini-Mental State exam).⁴⁶

Continuous Tracking Task (CTT)

Each 20 s trial consisted of two 10 s tracking segments. Unknown to the participants, a predefined tracking pattern was embedded in the 10 s segment of each trial. This repeated sequence remained identical across practice and retention blocks.⁴⁷ A different random sequence was used for every trial; however, to ensure uniformity, the same random tracking patterns were practiced by all of the participants. The random and repeated segments were linked at the crossing of the horizontal zero point (*Figure 1D*).

Recognition test

Following the retention test on day 7, participants were shown 10 blocks of continuous target movement and asked to decide if they recognized any as the repeated pattern that they practiced. Three of the 10 were “true” repeating sequences i.e., the same as the repeated practice pattern; 7 were foils that had not been previously viewed by the study participants. Individuals who identified the repeated sequence at a better than chance rate, i.e. 2 of 3 repeated sequences

identified correctly as being recognized were considered to have gained explicit awareness of the repeating sequence (*Figure 1A*).^{7,28,48}

Curve Fitting

Based on exponential curve fitting methods outlined by Lang & Bastian (2001) study in a stroke population, R^2 was used to evaluate the goodness of fit. The average R^2 for the repeated sequence for the HC and ST group was 0.37 (SD = 0.196) and 0.26 (SD = 0.172), respectively. For the random sequence for the HC and ST group was 0.30 (SD = 0.151) and 0.27 (SD = 0.168), respectively. It is considered that if 10% of the variance is explained by the fit than this is an adequate representation of the data.¹⁴ Therefore based on this criterion our data is adequately represented by our curve fitting approach. A custom MATLAB (Mathworks, Natick, MA) script was used for analyses.