

Supplementary figures for

Two is better than one: Physical interactions improve motor performance in humans

G. Ganesh, A. Takagi, R. Osu, T. Yoshioka, M. Kawato, E. Burdet

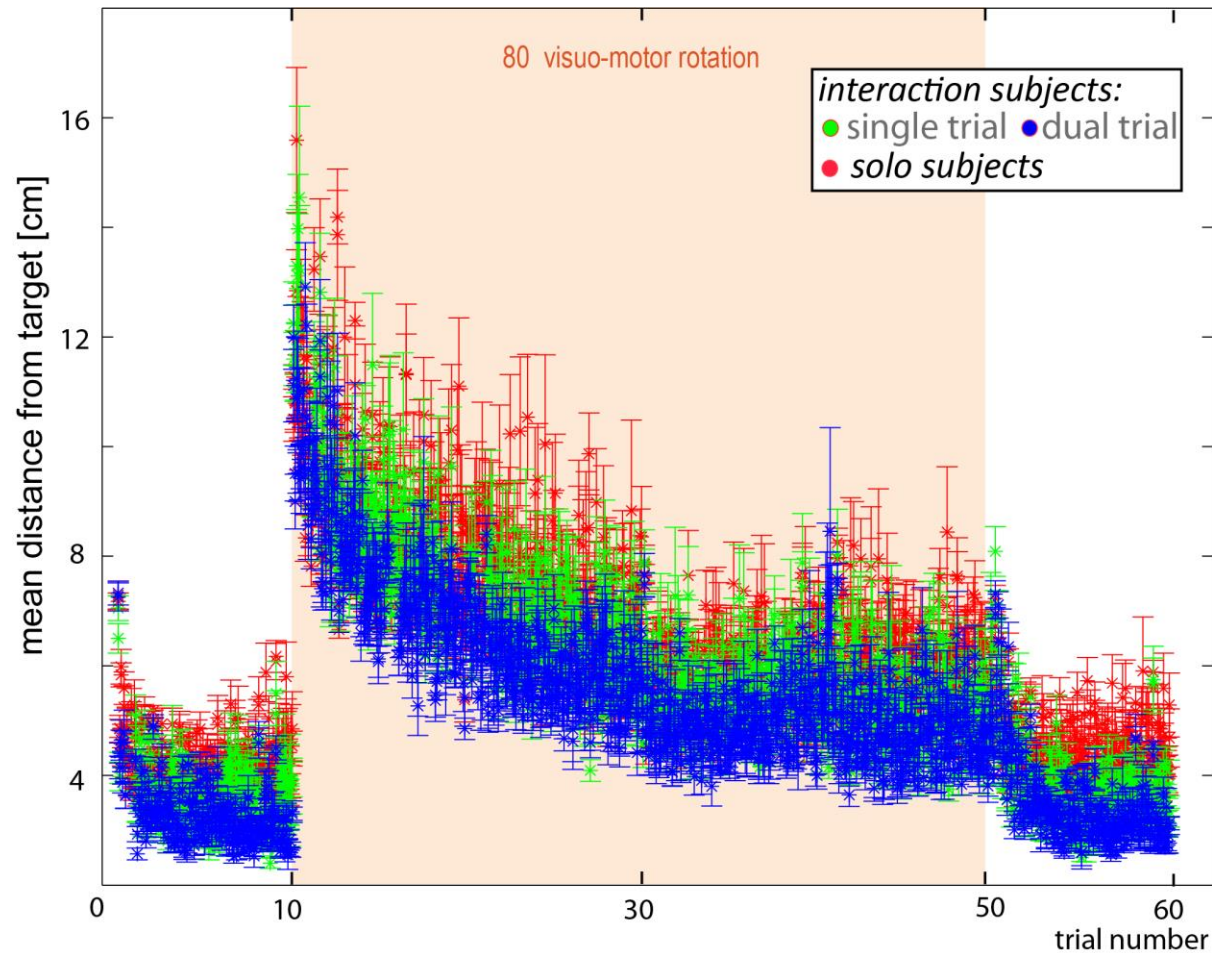


Fig. S1: Learning Curves: The target tracking error averaged over every 5 seconds ($60''/5 = 12$ data points per trial) is plotted across 20 subjects (mean and standard error) for the single trials (green) and dual trials (blue) in the interaction experiment and across the 10 solo subjects (red plot). A typical exponentially decaying learning curve for the trajectory error was observed, similar to many previous studies during visuo-motor rotation learning. The single trials exhibit larger errors than the dual trials, and the solo subjects demonstrate larger error than the single trials of the interaction subjects. This observation is valid throughout the experiment, even when subjects worked in a normal environment without visuo-motor rotation (trials 1-10 and 51-60).

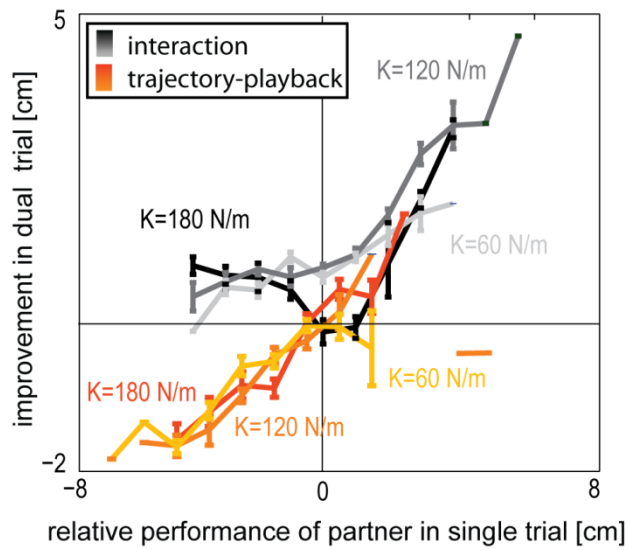


Fig. S2: Effect of connection stiffness: The change in connection stiffness altered the subject behavior in the main interaction experiment only when the partner was better (positive abscissa) such that maximum improvement was observed for $K=120$ N/m, and significantly less improvement when the connection stiffness was $K=60$ N/m or $K=180$ N/m. No change due to connection stiffness was observed in the trajectory-playback experiment.