



*Supplementary Figure 1.* Amplitude changes within repeated sequences at the midline recording sites. A: ERPs to motion segments at serial positions 2 to 5, filtered between 1 and 30 Hz. Each column corresponds to a different presentation, and each color corresponds to a segment at a different position. B: Amplitude (difference between most positive and most negative points) of the ERPs for each segment and presentation. Each color corresponds to a different presentation. Asterisks denote statistical significance for the effect of segment position during a single presentation (bootstrap test, see Methods in main text). A plus sign indicates a significant interaction between presentation and serial position ( $p < 0.05$ , bootstrap). Error bars are within subject SEM for each presentation. The location of the recording sites on the scalp is illustrated by the head diagram (facing up).

*Supplementary video clip.* This video clip shows an entire trial from the learning experiment. The subject viewed the same stimulus sequence (the motion of the white disc) three times. After each presentation the subject tried to reproduce the motion of the disc by drawing with a stylus on a graphic tablet. The motion of the stylus was mirrored by a colored disc moving on the display. At the end of three sets of viewing and imitation, the subject received feedback in the form of the static image of the entire path that had been traversed by the stimulus disc, superimposed on the subject's three color-coded imitation attempts.