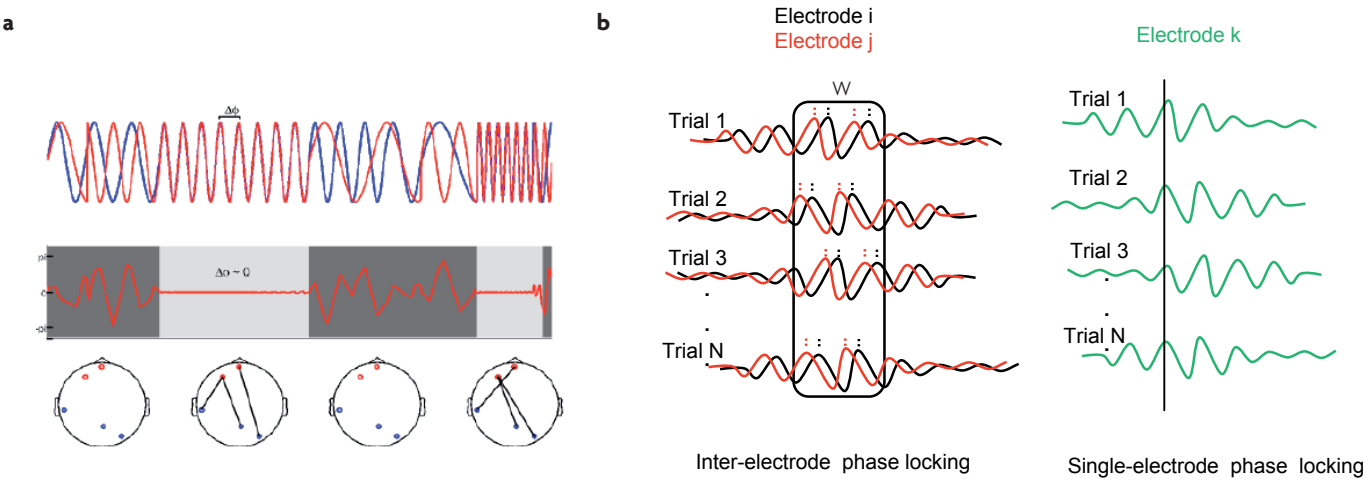

Supplementary information S2 **(figure)**
Measuring neural synchrony in EEG/MEG Signals. **a** | Measuring phase-synchrony in brain signals: The synchrony of oscillations in EEG/MEG data can be estimated by analyzing phase relationships. The top panel shows oscillatory brain signals recorded by two different groups of sensors (red and blue) placed in the positions shown in the bottom panel. The middle panel shows the difference in oscillatory phase between the red and blue signals. Phase difference values around zero indicate phase synchrony. The bottom panel illustrates patterns of synchrony between distant sensor sites at different time points. The black lines link synchronous sensors. **b** | Inter-electrode phase locking and single-electrode phase locking. The left panel shows brain signals recorded from two electrodes (i and j; black and red, respectively) across several trials. The electrodes display inter-electrode phase locking if their phase difference (distance between black and red vertical lines on top of the curves) remains relatively constant inside a time window (W) across the trials. This yields an estimate of functional coupling (long-range synchronisation) between two cortical areas. Note that it is not required that the phase of each electrode remains constant, only the difference between electrodes must be constant. The right panel shows recordings from a single electrode (k, green line) across several trials. The electrode shows single-electrode phase locking if, at a given time point after stimulus onset (black vertical line), the phase remains relatively constant across the trials. This is an index of stimulus dependent phase resetting but does not imply functional coupling between cortical areas. It is a concept very similar to the evoked potential but it depends only on the phase of the signal and does not depend on the local amplitude. Images courtesy of F. Roux and E. Rodriguez, Max Planck Institute for Brain Research, Frankfurt am Main, Germany.