a Contralateral vs. ipsilateral ERP waves in motor and visual areas

b Time shift between visual and motor selective activity after combining reward and no-reward conditions

c Time shift under reward condition

d Time shift under no reward condition

e Lag difference: reward vs. no reward across entire period

f Lag difference: reward vs. no reward in early stage

g Lag difference: reward vs. no reward in late stage

Supplementary Fig. S3 | Latency results of the selective activity when the -200 – 0 ms interval relative to target onset was chosen for the baseline correction. (a) The differences in waveforms between the contralateral side and the ipsilateral side of the target direction are shown as a function of time and area (pink for motor area and light blue for visual area). The horizontal lines denote the time clusters showed a significant difference between contralateral and ipsilateral activities. **(b)** The dashed vertical line denotes the lag value between the visual selective activity and the motor selectivity estimated based on the cross-correlation. The gray bars denoted the distribution of the estimated lag values based on permutations (N = 5000). (c and d) The same visual (red) and motor (blue) selective activity and the lag results in reward **(c)** and no-reward **(d)** conditions. Peak values of the identified components are marked in arrows. The short dashed vertical lines on the left panel denote the lowest amplitude between the two peaks. The time range before the lowest amplitude was identified as the early stage, and the time range after the lowest amplitude was identified as the late stage. **(e-g)** The difference of visual-motor lag values between reward and no reward conditions estimated based on the whole-time range (e), the early stage (f) and the late stage (g). All shadings represent ±1 s.e.m. calculated across all participants.