



61 **Supplementary Fig. 4. Results from intraoperative interval-timing in PD patients undergoing STN-DBS.**  
 62 **Related to Fig. 3.** A) Distributions of responses in time for FI3 vs. FI12 trials. B) Mean response time was longer  
 63 on FI12 vs. FI3 trials. Note that PD patients are impaired in this task due to deficits in working memory for  
 64 temporal rules—thus, they have early and broader response times on FI12 trials (see 19,20,50). There was no  
 65 statistical difference in interval-timing performance in vs. out of the OR. Data from 10 intraoperative patients vs. 10  
 66 separate PD patients outside the OR. C) Intraoperative midfrontal EEG around cue. D) Time-frequency plots of  
 67 midfrontal EEG and E) STN LFP around motor response. F) Intraoperative STN LFP around cue. G) Midfrontal  
 68 EEG to STN LFP coherence and H) Granger causality also revealed 4-Hz and 20-Hz interactions around the motor  
 response.