Figure 1-figure supplement 1

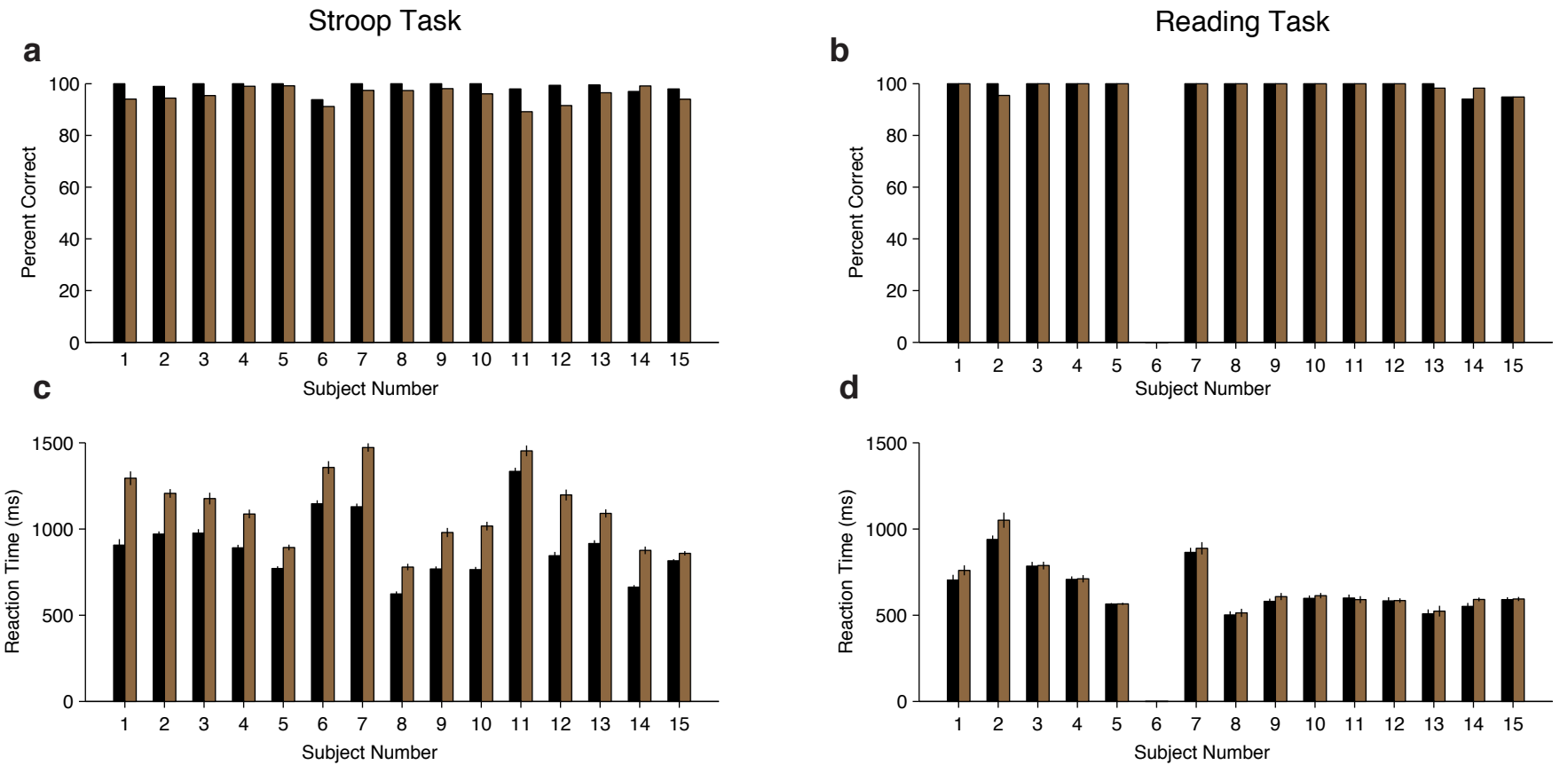


Figure 2-figure supplement 1

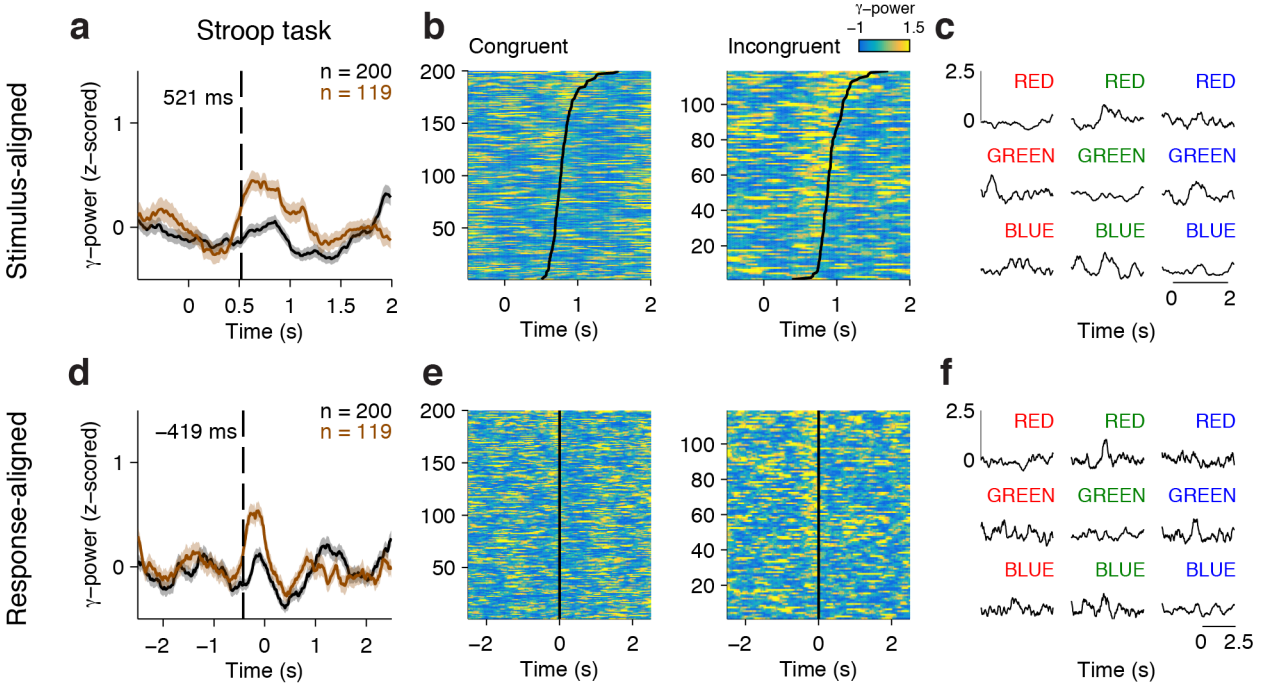


Figure 2-figure supplement 2

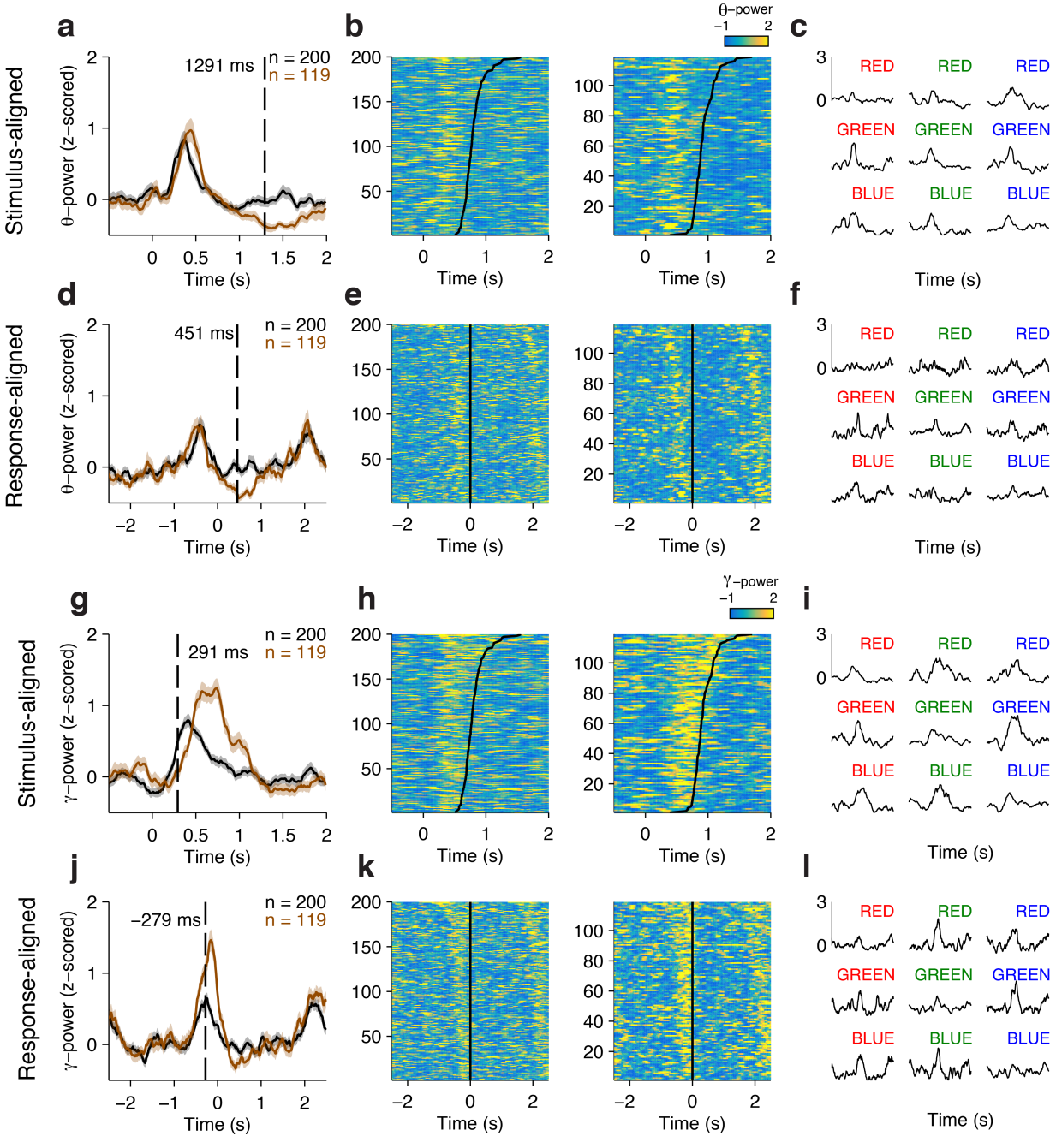


Figure 4-figure supplement 1

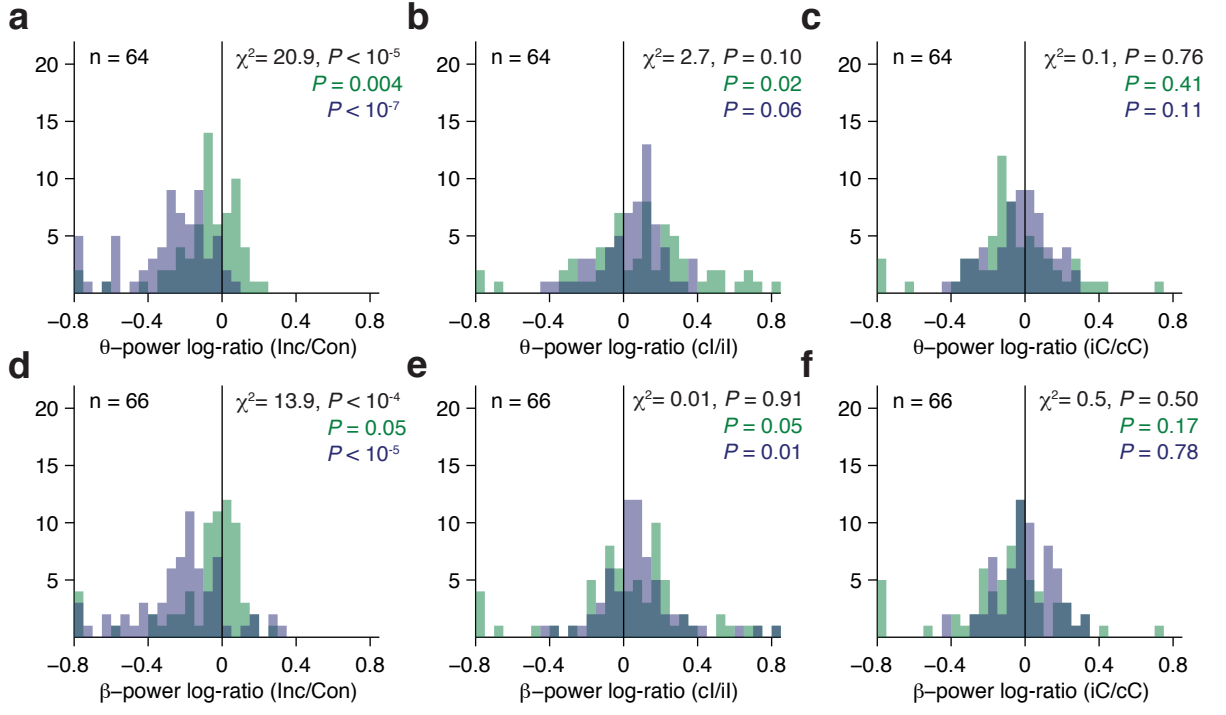


Figure 4-figure supplement 2

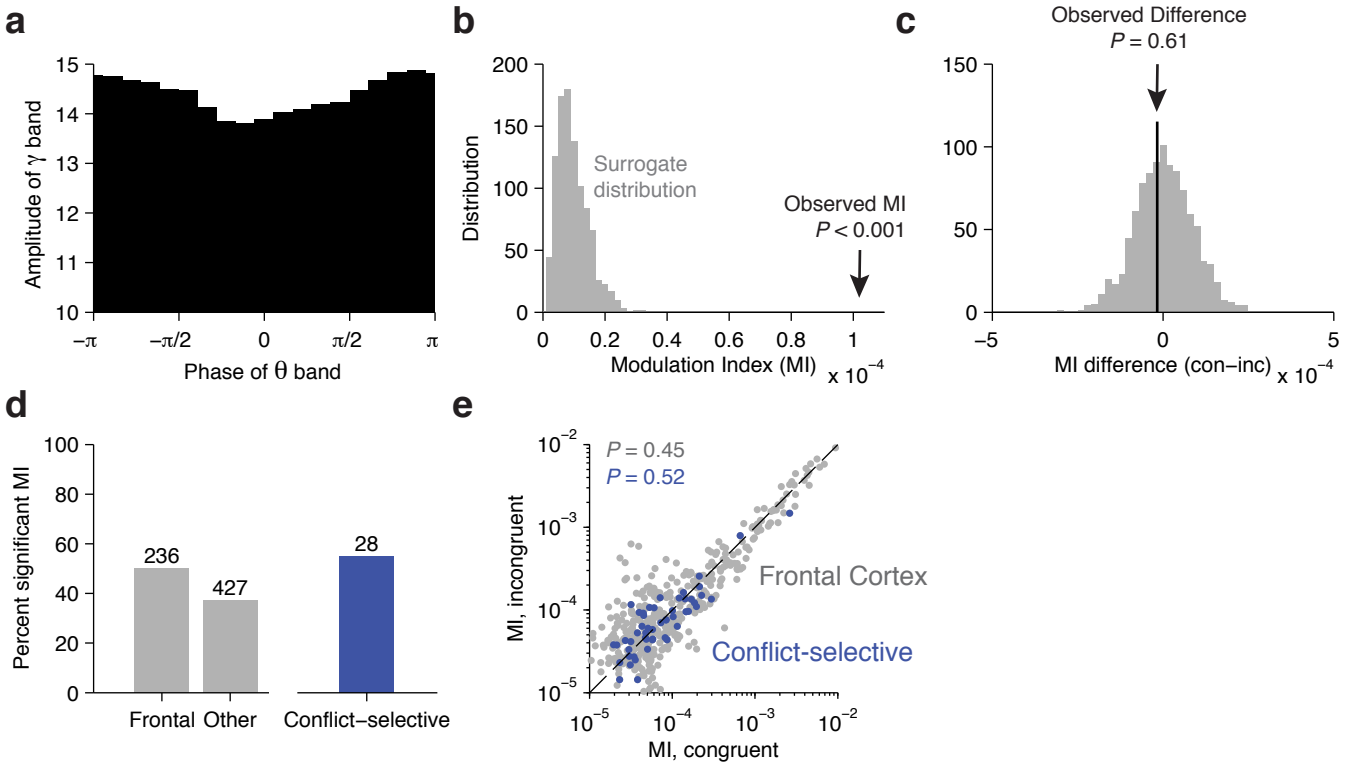
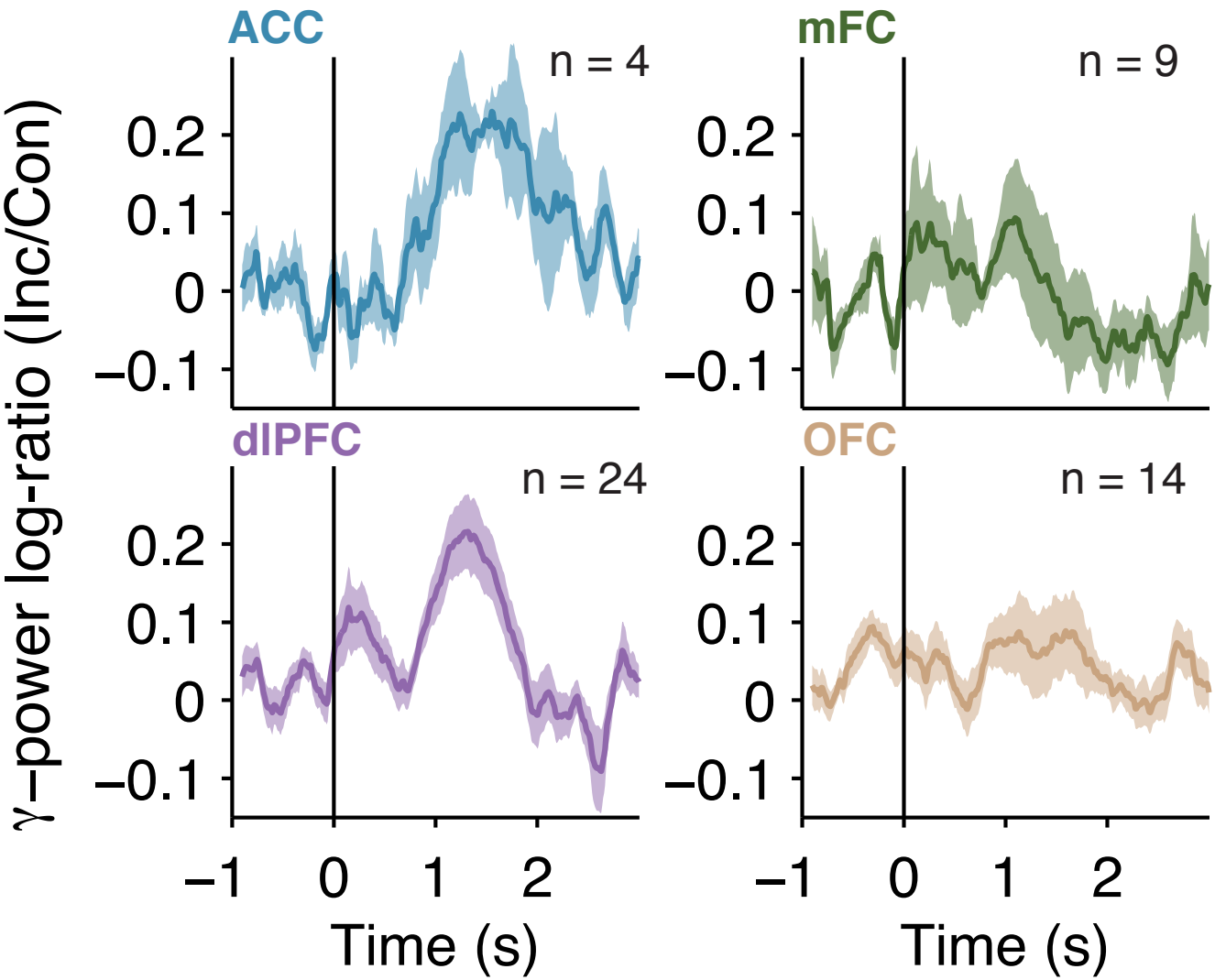


Figure 4-figure supplement 3



Supplementary File 1

Subject #	Subject ID	Age	Gender	# Electrodes	# Trials	Trial length (s)	Language
1	j00018	42	F	87	202	3	English
2	j00023	27	M	132	414	2	English
3	j00024	30	M	64	337	2	English
4	j00025	32	F	152	439	2	English
5	j00029	50	M	101	470	2	English
6	j00031	41	F	87	213	2	English
7	j00033	39	M	120	470	2	English
8	m00098	45	F	112	375	2	English
9	m00100	10	F	122	461	2	English
10	m00103	10	F	104	431	2	English
11	tw0005	30	M	64	360	2	Mandarin
12	tw0007	34	M	40	364	2	Mandarin
13	tw0009	19	M	64	452	2	Mandarin
14	tw0012	13	M	84	371	2	Mandarin
15	tw0014	24	F	64	470	2	Mandarin

Information about each of the 15 subjects that participated in this study

Supplementary File 2

Subject #	Location	Gamma-power, Stroop task		Gamma-power, Reading task	
		Congruent	Incongruent	Congruent	Incongruent
1	Superior Frontal Gyrus	1.85	1.94	1.88	1.74
1	Anterior Cingulate Cortex	3.12	3.14	2.87	2.77
1	Superior Frontal Gyrus	2.14	2.53	2.06	2.12
1	Anterior Cingulate Cortex	3.10	3.44	3.01	2.82
1	Anterior Cingulate Cortex	2.55	3.19	2.25	2.35
4	Orbital Gyrus	2.29	2.27	2.49	2.31
5	Frontomarginal Gyrus	1.87	1.80	2.25	2.30
5	Orbital Gyrus	2.34	2.68	2.13	2.11
5	Middle Frontal Gyrus	2.07	2.21	2.06	2.09
5	Orbital Gyrus	2.66	2.41	2.60	2.42
5	Superior Frontal Gyrus	2.11	1.88	2.08	2.00
5	Superior Frontal Gyrus	2.33	1.98	2.18	2.10
5	Middle Frontal Gyrus	2.15	2.47	2.10	2.00
5	Middle Frontal Gyrus	3.42	3.29	2.21	2.22
6	Superior Frontal Gyrus	2.02	2.18	-	-
6	Middle Frontal Gyrus	1.94	2.18	-	-
7	Frontomarginal Gyrus	1.71	1.48	1.96	2.03
7	Frontomarginal Gyrus	1.64	1.76	1.92	2.01
7	Frontomarginal Gyrus	1.67	1.69	1.82	1.88
7	Middle Frontal Gyrus	1.66	1.83	1.83	1.88
7	Middle Frontal Gyrus	1.88	2.32	1.80	1.72
7	Middle Frontal Gyrus	2.49	2.65	2.39	2.44
7	Middle Frontal Gyrus	2.77	4.14	2.10	1.96
7	Middle Frontal Gyrus	1.86	2.45	1.89	1.93
8	Middle Frontal Gyrus	2.27	2.15	2.20	2.15
8	Orbital Gyrus	2.46	2.34	2.22	2.61
9	Middle Frontal Gyrus	2.97	3.04	2.96	2.86
9	Middle Frontal Gyrus	2.32	2.80	2.32	2.43
9	Middle Frontal Gyrus	2.79	2.65	2.82	2.74
10	Orbital Gyrus	2.30	2.65	2.50	2.26
10	Middle Frontal Gyrus	3.50	4.49	4.28	3.24
11	Orbital Gyrus	2.01	2.29	2.18	1.95
11	Orbital Gyrus	1.90	2.07	2.09	2.23
11	Orbital Gyrus	2.14	2.17	1.98	2.16
11	Middle Frontal Gyrus	2.81	2.98	2.12	2.12
12	Middle Frontal Gyrus	2.26	2.82	2.19	2.35
13	Inferior Orbital Gyrus	2.00	2.56	2.17	2.37
13	Middle Frontal Gyrus	2.11	2.59	2.15	2.18
14	Middle Frontal Gyrus	2.29	2.89	2.14	2.41
15	Middle Frontal Gyrus	3.36	4.53	2.66	2.74
15	Middle Frontal Gyrus	2.55	2.74	2.00	2.01
15	Middle Frontal Gyrus	7.30	9.26	5.00	5.09
15	Middle Frontal Gyrus	3.23	4.88	3.37	3.25
15	Middle Frontal Gyrus	4.04	6.45	3.11	2.74
15	Middle Frontal Gyrus	3.27	3.60	2.39	2.55
15	Inferior Orbital Gyrus	3.06	3.22	2.78	2.77
15	Anterior Cingulate Cortex	3.72	4.34	2.40	2.51
15	Superior Frontal Gyrus	3.36	3.67	2.31	2.51
15	Superior Frontal Gyrus	2.84	4.05	2.22	1.98

15	Superior Frontal Gyrus	1.96	2.27	1.88	1.92
15	Superior Frontal Gyrus	2.34	2.50	1.94	2.10

Information about each of the 51 electrodes that were modulated by conflict

Supplementary File 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Anterior Cingulate Cortex	3														1	**4**
Medial Frontal Cortex	2				2	1									4	**9**
Dorsolateral Prefrontal Cortex					3	1	5	1	3	1	1	1	1	1	6	**24**
Orbitofrontal Cortex				1	3		3	1		1	3		1		1	**14**
Total	**5**	**0**	**0**	**1**	**8**	**2**	**8**	**2**	**3**	**2**	**4**	**1**	**2**	**1**	**12**	**51**

Distribution of the 51 electrodes that were modulated by conflict across the four frontal cortex areas and the 15 subjects in our study.

Cascade of neural processing orchestrates cognitive control in human frontal cortex

Tang H, Yu H, Chou C, Crone N, Madsen J, Anderson W, Kreiman G

Supplementary File 4

Description	Location	Effects tested	Statistical Test	n	definition
Performance (Task X Congruency)	Results, para 2	Task X Congruency	ANOVA	15	subjects
Performance (Stroop)	Results, para 2	C vs I	paired t-test	15	subjects
Performance (Reading)	Results, para 2	C vs I	paired t-test	14	subjects
RT (Task x Congruency)	Results, para 2	Task X Congruency	ANOVA	15	subjects
RT (Stroop)	Results, para 2	C vs I	paired t-test	15	subjects
RT (Reading)	Results, para 2	C vs I	paired t-test	14	subjects
RT (Previous X Current)	Results, para 2	Previous X Current	ANOVA	15	subjects
RT (cI vs iI)	Results, para 2	cI vs iI	paired t-test	14	subjects
RT (iC vs. cC)	Results, para 2	iC vs cC	paired t-test	14	subjects
Gamma Power (C vs I, Stroop)	Results, para 5	C vs I	non-parametric ANOVA	150	trials
Gamma Power (Task X Congruency)	Results, para 5	Task X Congruency	non-parametric ANOVA	160	trials
False Positive analysis (ACC)	Results, para 7	N/A	permutation test	10,000	shuffles
False Positive analysis (mFC)	Results, para 7	N/A	permutation test	10,000	shuffles
False Positive analysis (dlPFC)	Results, para 7	N/A	permutation test	10,000	shuffles
False Positive analysis (OFC)	Results, para 7	N/A	permutation test	10,000	shuffles
Correlation of Gamma with RT	Fig. 2H	N/A	Pearson correlation	84	conflict trials
Gamma Power (Task X Congruency)	Fig. 4A	Task X Congruency	MLM, likelihood ratio test	51	electrodes
Gamma Power (C vs I, Stroop)	Fig. 4A	C vs I	MLM, likelihood ratio test	51	electrodes
Gamma Power (C vs I, Reading)	Fig. 4A	C vs I	MLM, likelihood ratio test	51	electrodes
Gamma Power (Trial X Congruency)	Fig. 4D	Trial X Congruency	MLM, likelihood ratio test	51	electrodes
Gamma Power (cI vs iI, Stroop)	Fig. 4D	cI vs iI	MLM, likelihood ratio test	51	electrodes
Gamma Power (cI vs iI, Reading)	Fig. 4D	cI vs iI	MLM, likelihood ratio test	51	electrodes
Gamma Power (Trial X Congruency)	Fig. 4E	Trial X Congruency	MLM, likelihood ratio test	51	electrodes
Gamma Power (iC vs cC Stroop)	Fig. 4E	iC vs cC	MLM, likelihood ratio test	51	electrodes
Gamma Power (iC vs cC Reading)	Fig. 4E	iC vs cC	MLM, likelihood ratio test	51	electrodes

Error vs Correction (ACC electrode)	Fig. 5B	Error vs Correction	sign-rank test	11 trials
Error vs Correction (dlPFC electrode)	Fig. 5D	Error vs Correction	sign-rank test	10 trials
Latency by Region	Fig. 6	N/A	permutation test	51 electrodes
Latency (ACC-MFC)	Fig. 6	N/A	permutation test	51 electrodes
Latency (ACC-dlPFC)	Fig. 6	N/A	permutation test	51 electrodes
Latency (dlPFC-OFC)	Fig. 6	N/A	permutation test	51 electrodes

Effect size measures	**Definition**	**Source**
Cohen's d (repeated measures)	(m1-m2)/(pooled SD)/sqrt(1-r)	Cohen, J. (1988). Statistical power analysis for the
Eta-squared	SS_between/SS_total	Pearson, K. (1911). On a correction needful in the c
f-squared	(R^2_model-R^2_null)/(1-R^2_model)	Cohen, J. (1988). Statistical power analysis for the
s.d.	Standard deviation from null distribution	

test statistic	p-value	d.f.	Effect Size	
F = 22.87	p = 0.0004	1	0.12	Eta-squared
t = 4.9	p = 2.4e-04	14	1.9	Cohen's d
t = 0.32	p = 0.76	13	0.12	Cohen's d
F = 65.23	p = 2e-06	1	0.04	Eta-squared
t = 8.96	p = 3.5e-07	14	3.42	Cohen's d
t = -2.6	p = 0.02	13	1.29	Cohen's d
F = 19.46	p = 0.0006	1	0.02	Eta-squared
t = 2.4	p = 0.03	13	0.88	Cohen's d
t = 4.6	p = 0.0004	13	1.7	Cohen's d
F = 36.6	p < 0.0001	149	N/A	
F = 13.5	p = 0.007	159	N/A	
n = 4	p = 0.007	N/A	4.1	s.d.
n = 9	p = 0.0007	N/A	6.3	s.d.
n = 24	p < 0.0001	N/A	14.9	s.d.
n = 14	p < 0.0001	N/A	9.7	s.d.
r = 0.25	p = 0.02	83	0.25	r
χ^2=9.2	p = 0.002	1	0.06	f-squared
χ^2=19.7	p < 0.0001	1	0.48	f-squared
χ^2=0.34	p = 0.56	1	0.007	f-squared
χ^2=4.4	p = 0.03	1	0.03	f-squared
χ^2=11	p < 0.0001	1	0.25	f-squared
χ^2=0.12	p = 0.72	1	0.002	f-squared
χ^2=1.9	p = 0.17	1	0.01	f-squared
χ^2=1.9	p = 0.16	1	0.002	f-squared
χ^2=1.8	p = 0.19	1	0.001	f-squared

signedrank=0	p = 0.001	10	1.76	Cohen's d
signedrank=0	p = 0.002	9	2.69	Cohen's d
F = 7.2	p = 0.01	50	3.5	s.d.
388 ms	p = 0.0012	50	2	s.d.
207 ms	p = 0.016	50	2.2	s.d.
319 ms	p = 0.009	50	2.3	s.d.

behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
case of the correlation ratio. Biometrika, 8, 254-256
behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.