Supplemental Materials: MEG Imaging reveals abnormal information flow in TLE

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1. Peak frequency distribution around the alpha band

Distributions of peak frequencies around the alpha band (8–12 Hz) for each participant was detected, and their means obtained by averaging over each group were shown in Figures 1 D–E in the main text. We employed the method described in Mahjoory et al. (2020) for detecting the peak frequencies: first we estimated aperiodic component of PSD such as 1/f noise between 1 and 45 Hz using the FOOOF algorithm (Haller et al., 2018), and then subtracted it from the original PSD. After that, we applied the MAT-LAB 'findpeaks' function to the corrected PSD and extracted the frequency with maximum PSD amplitude. For several participants not having peak frequency within the range of 8–12 Hz on several ROIs, a peak frequency with the strongest power or a frequency with maximum power in the range of 6–14 Hz was defined as a peak frequency.

2. Distances between brain regions based on Brainnetome Atlas

In the main text, we mentioned distances between brain regions in the context of showing the feature of the PTE matrices (e.g., Figs. 2C and F). Here we show how we estimated the distances between ROIs based on the Brainnetome atlas dataset.

The binary data of structural connections between brain regions for Brainnetome Atlas (Fan et al., 2016) are provided as a csv file at the Brainnetome web page. It also provides MNI coordinates for each ROIs as an xlsx file ¹. Based on these data, we estimated shortest-path length between brain regions. First we calculated euclidean distances between directly connected ROIs using their MNI coordinate values and obtained a distance-weighted

¹Tables 1 and 2 are based on the xlsx file.



Figure S1: Distances between brain regions evaluated based on Brainnetome Atlas database.

matrix. After that, for all the pairs of ROIs, the length of the shortest possible path between the ROIs was computed by Floyd-Warshall algorithm that is implemented in a MATLAB toolbox, Brain Connectivity Toolbox (Rubinov and Sporns, 2010).

Figure S1 shows the the obtained shortest-path lengths. By comparing the shortest-path-length matrix (Fig. S1) with the PTE matrices (e.g., Figs. 2C and F), we can find that large information flow shown in the main text appears between brain regions with short distance less than approximately 8 cm (having warm color).

3. Normalized phase transfer entropy (NPTE) in the beta band

Computation results of PTE for beta band are shown in Figure S2. In beta band, information outflow increases in the superior frontal gyrus and orbital gyrus, and it decreases in the cuneus and occipital gyri (Fig. S2G). On the other hand, information inflow decreases in the middle and inferior frontal gyri (Fig. S2H).

4. Directional phase transfer entropy (dPTE)

In the main text, we have focused on the results on regional dPTE for the delta-theta and alpha bands. Here we show dPTE matrices for all the



Figure S2: Information flow patterns in the beta band based on normalized phase transfer entropy (NPTE). Regional information out- and in-flow patterns for HC (A,B) and TLE (D,E), and average NPTE matrices for HC (C) and TLE (F). (*Bottom row*) Beta-band disrupted information flow. Regional information out- and in-flow patterns (G and H) in TLE compared with HC. The color depicts the mean Z scores that survived in the ROIwise comparison of regional NPTEs between groups using permutation tests, and colors in orange indicate increased information flow. The colormaps are thresholded at 5% FDR. *Panel I*: Information flow connectogram in TLE compared with HC. The color depicts the average Z scores which are thresholded by t-tests with 0.1%-FDR correction. Only links with maximum absolute value of average Z scores between ROIs within each module were displayed.

frequency bands and regional dPTE in the beta band.



Figure S3: Average dPTE matrices for HC and TLE in the delta-theta (A,D), alpha (B,E), and beta (C,F) bands. For comparisons between HC and TLE, the colorbar ranges are aligned between (A) and (D), (B) and (E), and (C) and (F), respectively.



Figure S4: Beta-band regional directionality of information flow for HC and TLE (A and B). Red (blue) indicates outflow (resp. inflow) directionality. (C) Disrupted directionality patterns in TLE as the Z-score map. The color depicts the average Z scores that survived in the ROI-wise comparison of regional dPTEs between groups using permutation tests with 5%-FDR correction. Blue (orange) denote decreased (resp. increased) directionality. (D) Disrupted information directionality depicted as connectograms. The color depicts the average Z scores thresholded by t-tests with 1%-FDR correction. Only links with maximum absolute value of average Z scores between ROIs within each module were displayed.

The dPTE matrices for delta-theta, alpha, and beta bands are shown in Figure S3. It should be noting that the dPTE matrix is an anti-symmetric



Figure S5: (A,B,C) Neural synchrony evaluated using ImCoh in TLE compared with agematched HC. The color depicts the mean Z-score maps from the ROI-wise comparison of global imaginary coherence between groups in the delta-theta, alpha, and beta bands. Blue indicates hyposynchrony, and orange indicates hypersynchrony. The color maps are thresholded at 5% FDR (n = 19, TLE; n = 20, age-matched HC) after permutation tests. (D,E,F) Mean global synchrony estimated by using ImCoh averaged across the 210 Brainnetome cortical regions for the delta-theta, alpha, and beta bands. Significant hypersynchrony was observed in TLE in delta-theta band (**p < 0.01, t-tests). The data are shown as mean \pm SD (arbitrary units).

one. The regional dPTE in the beta band for HC and TLE, and their comparisons are shown in Figure S4.

5. Neural Synchrony

Neural synchrony between ROI-level brain areas was evaluated by computing the imaginary part of the coherence 'ImCoh'. The coherence for a pair of source timecourses, x and y, within a frequency band B was defined by

$$\operatorname{Coh}_{xy} = \frac{\sum_{k=1}^{K} \sum_{f \in B} X_k(f) Y_k^*(f)}{\sqrt{\sum_{k=1}^{K} \sum_{f \in B} |X_k(f)|^2 \sum_{k=1}^{K} \sum_{f \in B} |Y_k(f)|^2}},$$
(S1)

where $X_k(f)$ and $Y_k(f)$ are the k-th windowed Fourier transforms of x and y, respectively (Nolte et al., 2004). K is the total number of windows. We



Figure S6: (A,B,C) Group comparisons of mean global strength of dPTE in the deltatheta, alpha, and beta bands. Significant difference was observed in the alpha band (**p = 0.0036 < 0.01 in permutation test) and beta band (*** $p = 1.8^{-4} < 0.001$ in permutation test). There was no significant difference in the delta-theta band. (D) ROC curves of the global strength of dPTE for the delta-theta, alpha, and beta bands.

used Hanning window as a window function, the length of which was 3.41 sec $(2048/f_s)$. ImCoh is the imaginary part of Coh_{xy} , and we defined it as $\operatorname{ImCoh}_{xy} = |\operatorname{Im Coh}_{xy}|$. The connectivity strength at each ROI, regional ImCoh, was estimated by averaging across all Fisher's Z-transformed ImCohs (Guggisberg et al., 2008), i.e., using $\tanh[\frac{1}{N_{\text{ROI}}-1}\sum_{y} \tanh^{-1} \operatorname{ImCoh}_{xy}]$.

In patients with TLE, neuronal synchrony within the alpha and beta bands was reduced (hyposynchrony) compared to controls, whereas neuronal synchrony within the delta-theta band was increased (hypersynchrony) compared to controls. Anatomically, alpha hyposynchrony was found especially in posterior parietal and occipital regions (Fig. S5B). In contrast, delta-theta hypersynchrony was found especially in frontal regions (Fig. S5A). Interestingly, these distribution patterns of hypo- and hyper-synchrony are quite similar to those observed in MEGI in AD patients (Ranasinghe et al., 2020).

6. Supplementary results for NPTE and dPTE

6.1. Mean global strength of PTE directionality

Like ImCoh, a mean global measure averaged over all the ROI pairs (i.e., edges) can be defined for the directionality of phase transfer entropy (dPTE). Since dPTE takes both positive and negative value, it is appropriate to define such a scalar measure by taking an average of absolute values of dPTE-matrix components (i.e., |dPTE|). This quantifies global strength of PTE directionality. Here we show group comparisons of the strength between HC



Figure S7: Group comparison of alpha-band seed-based PTE out- and in-flow between HC and TLE. Seeds for PTE outflow and inflow were chosen based on maximal group differences in Z-scores between HC and TLE across the entire matrix. For PTE outflow, the seed region was the orbital gyrus [medial area 11]. For PTE inflow, the seed region was the left lateral posterior parahippocampal gyrus. (see Figs. 2G and H in the main text). The seed ROIs were denoted as black filled circles. For the NPTE rendering (A, B, D, and E), a converted quantity, $tanh[NPTE(i)/(NPTE_{max}/3)]$, was used for visualization, where $NPTE_{max} = \max_{j=1,\dots,210} NPTE(j)$. (C, F): Information flow from and into the seed regions in patients with TLE were larger than those in HCs. The color maps which represent Z scores are thresholded at 5% FDR after permutation tests. Significant statistical difference was observed between the groups. The large difference in the regional PTE outflow at the right orbital gyrus [medial area 11] mainly originates in the information flow into right cingulate gyrus [rostroventral area 24], left precuneus [medial area 5], and left cingulate gyrus [ventral area 23] (mean Z-scores in these regions are larger than 2). The large difference in the regional PTE inflow at the lateral posterior parahippocampal gyrus mainly originates in the information flow from left inferior occipital gyrus (mean Z-scores in this region is larger than 2).

and TLE for the delta-theta, alpha, and beta bands. The results were shown as box plots. A Matlab tool 'notBoxPlot' (Campbell, 2016) was used for making the box plots.

There was no significant difference between HC and TLE in the deltatheta-band global directionality strength (Fig. S6A). On the other hand, significant reductions in the directionality strength in TLE were observed for the alpha and beta bands (Figs. S6B and C). It is worth noting that these reduc-



Figure S8: Group comparison of several components in the alpha-band NPTE matrix (Figs. 2C and F) between HC and TLE. The comparisons at the ROI pairs (i.e., edges) that have large mean absolute Z scores (> 2; see Fig. 2I in the main text) were depicted. Clear discrimination between the groups with p < 0.001 in the permutation test for NPTE values was observed at all the selected ROI pairs. The panels are arranged from the upper left in descending order of absolute value of Z score.

tions do not represents information-flow reduction in TLE. As we mentioned in the main text in the context of comparing the results of alpha-band dPTE with those of NPTE (e.g., Figs. 4G-H and Figs. 2G-I), the directionalitystrength reductions rather originate in cancellation between the larger information out- and in-flow in TLE compared with HC (see Figs. 2G-I).

To check performance of mean global measures for TLE/HC discrimination, Receiver Operating Characteristic (ROC) curve analysis was also performed (Fig. S6D). Logistic, non-parametric method (Qin and Hotilovac, 2008) was used for their Area Under Curve (AUC) estimates. The alpha- and beta-band mean global |dPTE| have a potential to become a good scalar diagnostic measure for TLE in the sense that AUC is greater than 0.80 (Fig. S6D).

6.2. Seed-based PTE

In the main text, we investigated regional information outflow and inflow based on PTE matrix. Such an investigation is effective and convenient for



Figure S9: Group comparison of alpha-band regional NPTE outflow (Figs. 2A and D) and inflow (Figs. 2B and E) between HC and TLE. Clear discrimination between the groups (p < 0.001 in the permutation test) were observed at 7 and 9 ROIs for regional outflow and inflow, respectively. The comparisons at 5 ROIs among them that have top 5 absolute values of Z score (Figs. 2G or H) were depicted, being arranged from the left in descending order of the values.

data-dimension reduction and regional comparisons. There is however yet another approach to explore regional features: considering seed-based connectivity. Detailed consideration of seed-based connectivity is out of scope in this paper, but here we exemplify seed-based PTEs and their comparisons between HC and TLE; two ROIs where the greatest inflow and outflow difference within the alpha band were observed (see Figs 2G and H in the main text) were picked up as seeds.

Figure S7 shows the results. Information flow from and into the seed regions in patients with TLE were larger than those in HCs (Figs. S7C and F), reflecting aggregate increases in the outflow and inflow at the seed regions in TLE (Figs. 2G and H). This seed-based analysis further clarifies that the aggregate increases emerged in a region-specific way; several regions mainly contribute to the increases. This kind of seed-based approach, especially by putting a seed on ROI which highly correlates with clinical measures, such as spike frequency and duration of epilepsy, might be useful to investigate



Figure S10: (Upper panels:) Group comparison of several components in the alpha-band dPTE matrix (Figs. S3B and E) between HC and TLE. The comparisons at the ROI pairs (i.e., edges) that have large mean absolute Z scores (> 1.6; see Fig. 4H in the main text) were depicted. Clear discrimination between the groups with ***p < 0.001 in the permutation test for dPTE values was observed at all the selected ROI pairs. The panels are arranged from the left in descending order of absolute value of Z score. (Lower panels:) Group comparison of alpha-band regional dPTE (Figs. 4E and F). The comparisons at the ROIs providing provide clear discrimination between the groups (***p < 0.001 in the permutation test) were depicted. The panels are arranged from the left in descending order of the absolute value of Z score (Fig. 4G).

information-network contribution to the clinical measures, but this is a future study.

6.3. Group comparisons of NPTE matrix, regional NPTE and dPTE

In the main text, we discussed the deviation of connectivity in people with TLE versus HCs by introducing the Z score based on the connectivity in the HC group. This treatment makes a little hard to see intra-group variability for the connectivity measures, especially for those in the HC group. In order to clear the intra-group variability, we here exemplify group comparisons of the measures for several ROIs or edges that show clear group differences, focusing on the alpha band. The variability was visually shown by violin plots using a Matlab tool for them (Bechtold, 2016).



Figure S11: Relative-power spatial patterns for HC, TLE, and their difference represented as Z-score map for the delta-theta (A, B, and C), alpha (D, E, and F), and beta (G, H, and I) bands. The Z-score maps denote change in the relative-power pattern in TLE compared with HC-average pattern. The color in the Z-score maps represents mean Z scores thresholded by 5% FDR after permutation tests. Blue (orange) denote negative (resp. positive) change in relative power.

Figures S8 show group comparison of several components in the alphaband NPTE matrix (see Figs. 2C and F). By comparing these figures with the connectogram (Fig. 2I), it is identified that a mean NPTE value for HC is larger (smaller) than that for TLE when mean Z is positive (resp. negative), which is along with the definition of Z score.

6.4. Correlation between spatial patterns of dPTE and those of relative power

As we showed in the main text, the dPTE for HC had a clear posterior-toanterior pattern in the alpha band (see Fig. 4E). The back-to-front pattern is visually like a well-known mean relative-power spatial pattern [see, e.g.,



Figure S12: Similarity between group differences in regional dPTE values and those in the delta-theta (A), alpha (B), and beta (C) relative power. Z scores standardized by HC values [a standard definition was used here: $Z = (w - w_{\rm HC})/\sigma_{\rm HC}$, in which the multiplication of sgn($w_{\rm HC}$) is not included] were computed for each ROI, and then the group differences were quantified by averaging the Z scores over TLE group. The number of circular dots is accordingly equal to that of ROIs, i.e., 210. The similarity was evaluated by computing Pearson's correlation coefficient. A strong positive correlation ($r \sim 0.7$) was observed in the alpha band.



Figure S13: ROC curves of the global strength of relative power and ImCoh for the delta-theta, alpha, and beta bands.

Fig. 4 in Hillebrand et al. (2012)], and our HC data also provide such a backto-front pattern in the alpha band (Fig. S11D). Theoretically, regional dPTE and relative power can be independent measures computed on a time-series since PTE measure is based on phase timecourse, in which signal amplitude is omitted. Nevertheless, we empirically investigated if regional spectral power was associated with regional dPTE. To our surprise, in the alpha and beta bands, but not delta, we found that the correlation between regional relative power and dPTE also showed a clear posterior-to-anterior pattern, a pattern also observed in the regional spectral power (Fig. S11). Moreover, group differences in regional dPTE and relative power were correlated with each other especially for the alpha band (Fig. S12). These results suggest a complex relationship between spectral power and PTE measures.

6.5. Comparison of scalar measures as potential biomarkers

In the Supplementary section 6.1, we mentioned the alpha- and beta-band mean global |dPTE| have a potential to become a good scalar diagnostic measure for TLE. Here we compare them with the other scalar measures: mean global relative power and mean global ImCoh. ROC curve analysis was performed and the results are shown in Fig. S13. For the mean global relative power, their delta-theta- and beta-band measures exhibit good performance for TLE/HC discrimination. For the mean global ImCoh, its delta-thetaband quantity exhibits good performance.

Interestingly, the three scalar measures, mean global |dPTE|, relative power, and ImCoh were complementary to each other in terms of the frequency bands. This indicates that a combined use of total 9 scalar measures (the frequency bands × the three measures) may provide a biomarker with high TLE/HC discrimination performance.

7. Cortical brain regions in the Brainnetome Atlas

The Brainnetome Atlas (Fan et al., 2016) was utilized in our atlas-based MEG analysis. The atlas is composed of 210 cortical regions and 36 subcortical regions. We focused on 210 cortical brain regions among the total 246 brain regions. Here we shows the list of the 210 cortical brain regions and their abbreviations we used (see Fan et al. (2016) for details); Table 1 is for label IDs from 1 to 108, and Table 2 is for label IDs from 109 to 210. The 210 regions are grouped into 20 modules, SFG, MFG, IFG, OrG, PrG, PCL, STG, MTG, ITG, FuG, PhG, pSTS, SPL, IPL, Pcun, PoG, INS, CG, MVOcC, and LOcC. The 20 modules are furthermore grouped into 6 lobes of the brain: Frontal (F), Temporal (T), Parietal (P), Insular (I), Limbic (L), and Occipital (O) lobes.

References

Bechtold, B., 2016. Violin plots for matlab. Github Project, https://github.com/bastibe/Violinplot-Matlab, DOI: 10.5281/zenodo.4559847.

- Campbell, R., 2016. notboxplot. Github Project, https://github.com/raacampbell/notBoxPlot.
- Fan, L., Li, H., Zhuo, J., Zhang, Y., Wang, J., Chen, L., Yang, Z., Chu, C., Xie, S., Laird, A.R., et al., 2016. The human brainnetome atlas: a new brain atlas based on connectional architecture. Cerebral cortex 26, 3508–3526.
- Guggisberg, A.G., Honma, S.M., Findlay, A.M., Dalal, S.S., Kirsch, H.E., Berger, M.S., Nagarajan, S.S., 2008. Mapping functional connectivity in patients with brain lesions. Annals of neurology 63, 193–203.
- Haller, M., Donoghue, T., Peterson, E., Varma, P., Sebastian, P., Gao, R., Noto, T., Knight, R.T., Shestyuk, A., Voytek, B., 2018. Parameterizing neural power spectra. BioRxiv, 299859.
- Hillebrand, A., Barnes, G.R., Bosboom, J.L., Berendse, H.W., Stam, C.J., 2012. Frequency-dependent functional connectivity within resting-state networks: an atlas-based meg beamformer solution. Neuroimage 59, 3909– 3921.
- Mahjoory, K., Schoffelen, J.M., Keitel, A., Gross, J., 2020. The frequency gradient of human resting-state brain oscillations follows cortical hierarchies. eLife 9, e53715.
- Nolte, G., Bai, O., Wheaton, L., Mari, Z., Vorbach, S., Hallett, M., 2004. Identifying true brain interaction from eeg data using the imaginary part of coherency. Clinical neurophysiology 115, 2292–2307.
- Qin, G., Hotilovac, L., 2008. Comparison of non-parametric confidence intervals for the area under the roc curve of a continuous-scale diagnostic test. Statistical Methods in Medical Research 17, 207–221.
- Ranasinghe, K.G., Cha, J., Iaccarino, L., Hinkley, L.B., Beagle, A.J., Pham, J., Jagust, W.J., Miller, B.L., Rankin, K.P., Rabinovici, G.D., et al., 2020. Neurophysiological signatures in alzheimer's disease are distinctly associated with tau, amyloid- β accumulation, and cognitive decline. Science translational medicine 12.
- Rubinov, M., Sporns, O., 2010. Complex network measures of brain connectivity: uses and interpretations. Neuroimage 52, 1059–1069.

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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1	2	Superior Frontal Gyrus	SFG A8m	medial area 8	-5, 15, 54	7, 16, 54
5 6 SFG A91 Interial area 9 1.1, 49, 40 13, 8, 40 7 8 SFG A6d dorsolateral area 6 -6, -5, 58 7, 4, 60 9 10 SFG A6m medial area 9 -5, 36, 38 6, 38, 35 13 14 SFG A10m medial area 10 -27, 43, 31 30, 37, 36 15 16 Midel Frontal Gyrus MFC A9/46d dorsal area 9/46 -27, 43, 31 30, 37, 36 17 18 MFC A6/6 area 46 -28, 65, 15 8, 58, 14 28, 55, 17 21 22 MFC A64d dorsal area 9/46 -21, 43, 34 42, 27, 39 32 26 MFC A60d ventrolateral area 6 -32, 4, 55 34, 8, 64 22 28 MFG A601 ventrolateral area 4 -46, 13, 21 48, 56, 15 33 34 IFG A44d dorsal area 44 -46, 13, 24 45, 65, 15 33 34 IFG A44p opercular area 4 -39, 23, 4 42, 22, 3 36 IFG A44p <t< td=""><td>3</td><td>4</td><td></td><td>SFG A8dl</td><td>dorsolateral area 8</td><td>-18, 24, 53</td><td>22, 26, 51</td></t<>	3	4		SFG A8dl	dorsolateral area 8	-18, 24, 53	22, 26, 51
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$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	7	8		SFG A6dl	dorsolateral area 6	-18, -1, 65	20, 4, 64
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9	10		SFG A6m	medial area 6	-6, -5, 58	7, -4, 60
13 14 SFG A1/0n medial area 10 $+ 8, 56, 15$ $8, 58, 13$ $8, 58, 13$ 15 16 Middle Frontal Gyrus MFG A9/460 dorsal area 9/46 $-27, 43, 36$ $42, 11, 33$ 17 18 MFG A9/46v ventral area 9/46 $-42, 13, 36$ $42, 11, 43$ 13 24 MFG A9/46v ventrolateral area 6 $-32, 45, 55$ $34, 8, 54$ 25 26 MFG A101 lateral area 10 $-32, 60, 6-6$ $25, 61, -4$ 28 MFG A104 dorsal area 44 $-46, 13, 24$ $45, 16, 25$ $31, 8, 54$ 33 34 IFG A45c caudal area 14 $-46, 35, 23, 11$ $54, 24, 22, 3$ 39 40 IFG A447 ventral area 44 $-39, 23, 4$ $42, 22, 3$ $43, 22, 23, 3-1, 44$ 41 42 Orbital Gyrus OrG A14m medial area 11 $-52, 19, 6, 5, 7, 16$ $49, 30, -14$ 45 46 OrG A111 lateral area 11 $-62, 23, 63, 818$ $23, 36, -18$ 47 48 OrG A12/470 orbital area 12/47 $-46, 32, 29, 63, 3, 7, 57$ 55 56	11	12		SFG A9m	medial area 9	-5, 36, 38	6, 38, 35
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	25	26		MFG A6vl	ventrolateral area 6	-32, 4, 55	34, 8, 54
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	27	28		MFG A101	lateral area10	-26, 60, -6	25, 61, -4
31 32 IFG IFS inferior frontal sulcus -47 , 32 , 14 48 , 35 , 13 33 34 IFG A45c caudal area 45 -53 , 23 , 11 54 , 24 , 12 37 38 IFG A45r rostral area 45 -49 , 36 , -35 , 13 , 36 , -1 39 40 IFG A44v ventral area 44 -52 , 13 , 65 54 , 14 , 11 41 42 Orbital Gyrus OrG A14m medial area 14 -7 , 54 , -7 6 , 47 , -7 43 44 OrG A12/470 orbital area $12/47$ -36 , 33 , -18 23 , 36 , -18 47 48 OrG A12 medial area 11 -6 , 52 , -19 6 , 57 , -16 49 50 OrG A12/471 lateral area $12/47$ -41 , 32 , -9 23 , 1 , 9 51 52 Precentral Gyrus PrG Advtl area 4 (head and face region) -49 , 83 , 9 55 , -23 , 33 55 56 PrG A4u1 area 4 (trunk region) -32 , 05 , 85 , 33 , $-7, 57$ 58 PrG A4u1 area 4 (lower limb region) -52 , 0 , 8 85 , 10 , -34 , 49 56	29	30	Inferior Frontal Gyrus	IFG A44d	dorsal area 44	-46, 13, 24	45, 16, 25
33 34 IFG A45c caudal area 45 $-53, 23, 11$ $54, 24, 12$ 35 36 IFG A45r rostral area 44 $-52, 13, 6$ $54, 14, 11$ 41 42 Orbital Gyrus OrG A14m wentral area 14 $-52, 13, 6$ $54, 14, 11$ 41 42 Orbital Gyrus OrG A12/47o orbital area 12/47 $-36, 33, -16$ $40, 39, -14$ 45 46 OrG A11 lateral area 11 $-23, 38, -18$ $23, 36, -18$ 47 48 OrG A13 area 13 $-10, 18, -19$ $9, 20, -19$ 51 52 OrG A14f area 4 (head and face region) $-49, -83, -85$ $52, 23$ 55 56 Precentral Gyrus PrG A4t1 area 4 (trunk region) $-13, 20, 73$ $15, -22, 71$ 59 60 PrG A4t1 area 4 (trunk region) $-13, 20, 73$ $15, -22, 71$ 61 62 PrG A4t1 area 4 (tower timb region) $-43, 83, 85$ $80, -23, 03, -18$ 66 PCL A1/2/3II area 4 (tower timb region) $-43, -23, 61$ $5, -21, 61$ 67 68 PCL A12/2II<	31	32		IFG IFS	inferior frontal sulcus	-47, 32, 14	48, 35, 13
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	33	34		IFG A45c	caudal area 45	-53, 23, 11	54, 24, 12
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	35	36		IFG A45r	rostral area 45	-49, 36, -3	51, 36, -1
3940IFG A44vventral area 44-52, 13, 654, 14, 114142Orbital GyrusOrG A14mmedial area 14-7, 54, -76, 47, -74344OrG A12/470orbital area 12/47-36, 33, -1604, 03, -144546OrG A111lateral area 11-23, 38, -1823, 36, -184748OrG A16medial area 11-6, 52, -196, 57, -164950OrG A12/471lateral area 12/47-41, 32, -942, 31, -95152OrG A12/471lateral area 6-32, -9, 5833, -7, 5756Precentral GyrusPrG Adefcaudal dorsolateral area 6-32, -9, 5833, -7, 575758PrG Adutarea 4 (upper limb region)-26, -25, 6334, -19, 595960PrG At1area 4 (tongue and larynx region)-32, -9, 5854, 4, 96364PrG A6cvlcaudal ventrolateral area 6-49, 5, 3051, 7, 306566PCL A1/2/31area 4 (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38nmedial area 38-32, 14, -3431, 15, -347172STG A22rrostral area 32-62, -33, 766, -22, 0, 617778STG A22rrostral area 22-62, -33, 766, -22, 0, 617778STG A22rrostral area 21-65, -30, -1265, -22, 07884MTGs A21rrostral area 21-55, -30, -1265, -22, -9,	37	38		IFG A44op	opercular area 44	-39, 23, 4	42, 22, 3
4142Orbital GyrusOrG A14mmedial area 14-7, 54, -76, 47, -74344OrG A12/47oorbital area 12/47-36, 33, -1640, 39, -144546OrG A111lateral area 11-23, 38, -1823, 36, -184748OrG A111medial area 11-6, 52, -196, 57, -164950OrG A13area 13-10, 18, -199, 20, -195152OrG A12/471lateral area 12/47-41, 32, -942, 31, -95354Precentral GyrusPrG A4hfarea 4 (head and face region)-49, -8, 3955, -23, 335556PrG A4u1area 4 (upper limb region)-6, 22, 6334, -19, 5960PrG A4t1area 4 (tongue and larynx region)-13, -20, 7315, -22, 716162PrG A4t1area 4 (tongue and larynx region)-52, 0, 854, 4, 96566PCL A1/2/311area 12/2/3 (lower limb region)-8, -38, 5810, -34, 546768PCL A1/2/311area 4/2 (lower limb region)-8, -38, 5810, -34, 546768PCL A1/2/311area 4/1/22-54, -32, 1254, -24, 117374STG A22ccaudal area 22-60, -11, 1-51, -4, -17576STG A22ccaudal area 22-55, -3, -1066, -22, 0, 67778STG A21rrostral area 21-55, -3, -1265, -29, -137884MTGs A21rrostral area 20-55, -3, -12, 665, -29, -13<	39	40		IFG A44v	ventral area 44	-52, 13, 6	54, 14, 11
4344OrG A12/470orbital area 12/47-36, 33, -1640, 39, -144546OrG A111lateral area 11-23, 38, -1823, 36, -184748OrG A11medial area 11-6, 52, -196, 57, -164950OrG A12/471lateral area 12/47-41, 32, -942, 31, -95152OrG A12/471lateral area 12/47-41, 32, -942, 31, -95354Precentral GyrusPrG Adufarea 4 (head and face region)-49, -8, 3955, -2, 335556PrG Adu1area 4 (trunk region)-13, 20, 7315, -22, 716162PrG Atarea 4 (trunk region)-3, 20, 7315, -22, 716162PrG Adt1area 4 (trunk region)-4, 23, 615, -21, 616566PCL A1/2/311area 1/2/37 (lower limb region)-8, -38, 5810, -34, 546768PCL A1/2/311area 4/ (lower limb region)-4, -32, 165, -21, 616970Superior Temporal GyrusSTG A22rreat al1/24-54, -32, 1254, -24, 117374STG TE1.0 and TE1.2TE1.0/TE1.2-50, -11, 151, -4, -17576STG A22rrostral area 23-45, 32, -3051, -53, 317884MTGs A21ccaudal area 12-55, -3, -1056, -12, -58182Middle Temporal GyrusMTGs A21ccaudal area 21-55, -3, -1056, -12, -58384MTGs A37dldorsolateral area 37 <t< td=""><td>41</td><td>42</td><td>Orbital Gyrus</td><td>OrG A14m</td><td>medial area 14</td><td>-7, 54, -7</td><td>6, 47, -7</td></t<>	41	42	Orbital Gyrus	OrG A14m	medial area 14	-7, 54, -7	6, 47, -7
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	43	44		OrG A12/470	orbital area $12/47$	-36, 33, -16	40, 39, -14
4748OrG A11mmedial area 11-6, 52, -196, 57, -164950OrG A13area 13-10, 18, -199, 20, -195152OrG A12/471lateral area 12/47-41, 32, -942, 31, -95354Precentral GyrusPrG A4hfarea 4 (head and face region)-49, -8, 3955, -2, 335556PrG A6cdlcaudal dorsolateral area 6-32, -9, 5833, -7, 575758PrG A4tlarea 4 (trunk region)-13, -20, 7315, -22, 716162PrG A4tlarea 4 (toruk region)-13, -20, 7315, -22, 716364PrG A4tlarea 4 (toruc region)-4, -23, 615, -2, 1366PCL A1/2/31area 4 (toruc rimb region)-4, -23, 615, -24, 616768PCL A1/2/31area 4 (lower limb region)-4, -23, 615, -24, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A22ccaudal area 21-65, -30, -12-56, -12, -5-5776STG A22ccaudal area 38-45, 11, -2047, 12, -207980STG A37dldorsolateral area 37-59, -58, 460, -53, -308182Middle Temporal GyrusMTGs A37dldorsolateral area 20-56, -26, -7388MTGs A37dldorsolateral area 37-51, -57, -55, -53, -1056, -12, -538990Inferior Temporal GyrusTTG A20rrostral area 20	45	46		OrG A111	lateral area 11	-23, 38, -18	23, 36, -18
4950OrG A13area 13 $-10, 18, -19$ 9, 20, -19 5152OrG A12/471lateral area 12/47 $-41, 32, -9$ $42, 31, -9$ 5354Precentral GyrusPrG A4hfarea 4 (head and face region) $-49, -8, 39$ $55, -2, 33$ 5556PrG A6cdlcaudal dorsolateral area 6 $-32, -9, 58$ $33, -7, 57$ 5758PrG A4tlarea 4 (trunk region) $-26, -25, 63$ $34, -19, 59$ 60PrG A4tlarea 4 (trunk region) $-52, 0, 8$ $54, 4, 9$ 6364PrG A6cvlcaudal ventrolateral area 6 $-49, 5, 30$ $51, 7, 30$ 6566PCL A1/2/30larea 1/2/3 (lower limb region) $-8, -38, 58$ $10, -34, 54$ 6768PCL A1/2/30larea 1//42 $-54, -32, 12$ $5, -21, 61$ 6970Superior Temporal GyrusSTG A38mmedial area 38 $-32, 14, -34$ $31, 15, -34$ 7172STG A41/42area 4/1/42 $-54, -32, 12$ $54, -24, 11$ $73, 74$ 7374STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A38llateral area 38 $-45, 11, -20$ $47, 12, -20$ 7980STG A37dldorsolateral area 21 $-55, -3, 0, -12$ $55, -29, -13$ 8384MTGs A21ccaudal area 11 $-65, -30, -12$ $55, -29, -13$ 8384MTGs A37dldorsolateral area 20 $-45, -26, -27, 46, -14, -33$ 9192Inferior Temporal G	47	48		OrG A11m	medial area 11	-6. 5219	6. 5716
5152OrG A12/471lateral area $12/47$ $41, 32, -9, 42, 31, -9$ 5354Precentral GyrusPrG Adhfarea 4 (head and face region) $-49, -8, 39$ $55, -2, 33$ 5556PrG Adularea 4 (head and face region) $-26, -25, 63$ $34, -19, 59$ 5960PrG Adularea 4 (upper limb region) $-52, 0, 8$ $54, 4, 4, 9$ 6364PrG Adularea 4 (uopre limb region) $-52, 0, 8$ $54, 4, 4, 9$ 6566PCL A1/2/311area 4 (lower limb region) $-8, -38, 58$ $0, -34, 54$ 6768PCL A1/2/311area 4 (lower limb region) $-8, -38, 58$ $0, -34, 54$ 6970Superior Temporal GyrusSTG A38mmedial area 38 $-32, 14, -34$ $31, 15, -34$ 7172STG A41/42area 41/42 $-54, -32, 12$ $54, -24, 11$ $73, 74$ 74STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A22rrostral area 21 $-65, -30, -12$ $65, -29, -13$ 7884MTGs A21rrostral area 21 $-58, 20, -9$ $58, -20, -9$ $58, -20, -9$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 37 $-59, -58, -40, -53, -10$ $-58, -20, -9$ 8990Inferior Temporal GyrusITG A20ivintermediate lateral area 37 $-59, -58, -40, -53, -10$ $-58, -20, -9$ 8990Inferior Temporal GyrusITG A20ivintermediate lateral area 37 $-59, -58, -40, -53, -$	49	50		OrG A13	area 13	-10, 18, -19	9, 20, -19
5354Precentral GyrusPrG Ath PrG Adedarea 4 (head and face region) $-49, 8, 39$ $55, -2, 33$ 5556PrG Adedcaudal dorsolateral area 6 $-32, 9, 58$ $33, -7, 57$ 5758PrG Adularea 4 (upper limb region) $-26, -25, 63$ $34, -19, 59$ 5960PrG Attarea 4 (trunk region) $-13, -20, 73$ $55, -22, 33$ 6162PrG Adtlarea 4 (trunk region) $-13, -20, 73$ $55, -22, 33$ 6364PrG Adcvlcaudal ventrolateral area 6 $-49, 5, 30$ $51, 7, 30$ 6566PCL A1/2/3llarea 4 (lower limb region) $-4, -23, 61$ $5, -21, 61$ 6970Superior Temporal GyrusSTG A38mmedial area 38 $-32, 14, -34$ $31, 15, -34$ 7172STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A22rrostral area 22 $-65, -30, -12$ $65, -30, -12$ $65, -32, -13$ 7980STG A22rrostral area 21 $-55, -30, -12$ $65, -32, -13$ 8384MTGs A37dldorsolateral area 37 $-59, -58, 4$ $60, -53, 3$ 8586MTGs A37elvanterior superior temporal sulcus $-58, -60, -6$ $54, -26, -27$ 8990Inferior Temporal GyrusITG A20ivintermediate lateral area 37 $-55, -60, -6$ $54, -57, -8$ 8990Inferior Temporal GyrusITG A20ivintermediate lateral area 37 $-55, -60, -6$ $54, -57, -8$	51	52		OrG A12/471	lateral area 12/47	-41, 32, -9	42. 319
5556PrG A6cdlcaudal dorsolateral area 6-32, -9, 5833, -7, 575758PrG A4ularea 4 (upper limb region)-26, -25, 6334, -19, 595960PrG A4tarea 4 (trunk region)-13, -20, 7315, -22, 716162PrG A6cvlarea 4 (trunk region)-52, 0, 854, 4, 96364PrG A6cvlcaudal ventrolateral area 6-49, 5, 3051, 7, 306566PCL A1/2/3llarea 1/2/3 (lower limb region)-8, -38, 5810, -34, 546768PCL A4llarea 4 (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A41/42area 41/42-54, -32, 1254, -24, 117374STG FEL.0 and TE1.2TE1.0/TE1.2-50, -11, 151, -4, -17576STG A22ccaudal area 22-62, -33, 766, -20, 67778STG A21rrostral area 21-53, 2, -3051, -7, -58182Middle Temporal GyrusMTGs A21ccaudal area 37-59, -58, 460, -53, 38384MTGs A37dldorsolateral area 37-59, -58, -60, -65, -53, -21, -518182Middle Temporal GyrusITG A20ivintermediate ventral area 20-45, -26, -2746, -14, -338990Inferior Temporal GyrusITG A20ivintermediate area 37-59, -58, -60, -65, -53, -23, -2883 <t< td=""><td>53</td><td>54</td><td>Precentral Gyrus</td><td>PrG A4hf</td><td>area 4 (head and face region)</td><td>-49, -8, 39</td><td>552. 33</td></t<>	53	54	Precentral Gyrus	PrG A4hf	area 4 (head and face region)	-49, -8, 39	552. 33
5758PrG A4ul PrG A4ularea 4 (upper limb region) area 4 (trunk region)-26, -25, 63 -26, -25, 6334, -19, 595960PrG A4tarea 4 (trunk region)-13, -20, 7315, -22, 716162PrG A4tlarea 4 (trunk region)-52, 0, 854, 4, 96364PrG A6cvlcaudal ventrolateral area 6-49, 5, 3051, 7, 306566PCL A1/2/3llarea 1/2/3 (lower limb region)-8, -38, 5810, -34, 546768PCL A4llarea 4 (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A41/42area 41/42-54, -32, 1254, -24, 117374STG A22ccaudal area 22-62, -33, 766, -20, 67778STG A22ccaudal area 22-65, -30, -12, 65, -12, -58182Middle Temporal GyrusMTGs A21ccaudal area 21-53, 2, -3051, 6, -328586MTGs A37dldorsolateral area37-59, -58, 460, -53, 38990Inferior Temporal GyrusITG A20ivintermediate ventral area 20-43, -24, 1140, 0, -439192ITG A20ivintermediate ventral area 20-45, -26, -2766, -44, -339394ITG A20ivintermediate ventral area 20-43, -2, -4140, 0, -439596ITG A20ilintermediate area 20-56, -16, -2855, -11, -3	55	56		PrG A6cdl	caudal dorsolateral area 6	-32 -9 58	33 -7 57
5960FrG Attarea 4 (trunk region) $-13, -20, 73$ $15, -22, 71$ 6162PrG Attarea 4 (trunk region) $-52, 0, 8$ $54, 4, 9$ 6364PrG Actlcaudal ventrolateral area 6 $-49, 5, 30$ $51, 7, 30$ 6566PCL A1/2/3llarea 1/2/3 (lower limb region) $-8, -38, 58$ $10, -34, 54$ 6768PCL A1/2area 4 (lower limb region) $-4, -23, 61$ $5, -21, 61$ 6970Superior Temporal GyrusSTG A38mmedial area 38 $-32, 14, -34$ $31, 15, -34$ 7172STG A41/42area 41/42 $-54, -32, 12$ $54, -24, 11$ 7374STG A22ccaudal area 22 $-56, -11, 1$ $51, -2, 0$ 7778STG A381lateral area 38 $-45, 11, -20$ $47, 12, -20$ 7980STG A22rrostral area 21 $-65, -30, -12, 65, -29, -13$ 8184Middle Temporal GyrusMTGs A21rrostral area 37 $-55, -58, 4$ $60, -53, 3$ 8384MTGs A37dldorsolateral area37 $-59, -58, 4$ $60, -53, 3$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27, -46, -44, -33$ 9192ITG A20ivintermediate ventral area 37 $-51, -57, -15, 53, -53, -54, -46, -44, -33$ 9394ITG A20ivintermediate area 37 $-55, -60, -6, 54, -57, -8$ 99100ITG A20ilintermediate area 20 $-56, -16, -28, 55, -11, -32$ 97 <t< td=""><td>57</td><td>58</td><td></td><td>PrG A4ul</td><td>area 4 (upper limb region)</td><td>-26 -25 63</td><td>34 -19 59</td></t<>	57	58		PrG A4ul	area 4 (upper limb region)	-26 -25 63	34 -19 59
6162PrG A4tlarea 4 (tongue and larynx region)-52, 0, 854, 4, 96364PrG A6cvlarea 4 (tongue and larynx region)-52, 0, 854, 4, 96566PCL A1/2/3llarea 1/2/3 (lower limb region)-8, -38, 5810, -34, 546970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A41/42area 41/42-54, -32, 1254, -24, 117374STG A22ccaudal area 12-50, -11, 151, -4, -17576STG A22ccaudal area 22-62, -33, 766, -20, 67778STG A22rrostral area 21-55, -30, -1265, -29, -138384MTGs A21ccaudal area 21-65, -30, -1265, -29, -138586MTGs A37dldorsolateral area37-59, -58, 460, -53, 390Inferior Temporal GyrusITG A20ivintermediate ventral area 20-43, -24, -1440, 0, -439192ITG A20ivintermediate ventral area 37-59, -58, -46, -14, -339192ITG A20ilintermediate ventral area 37-51, -57, -1553, -52, -189394ITG A20ilintermediate area 20-43, -24, -1440, 0, -439596ITG A20ilintermediate area 20-55, -60, -654, -57, -899100ITG A20clcaudolateral area 20-55, -31, -2754, -57, -899100ITG A20clcaudolateral area 20-5	59	60		PrG A4t	area 4 (trunk region)	-13 -20 73	15 -22 71
6364PrG A6cvlcaudal ventrolateral area 6-49, 5, 3051, 7, 306566PCL A1/2/3llarea 1/2/3 (lower limb region)-4, -23, 615, -21, 616768PCL A4llarea 4 (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A1/42area 41/42-54, -32, 1254, -24, 117374STG A22ccaudal area 22-62, -33, 766, -20, 67778STG A22rrostral area 38-45, 11, -2047, 12, -207980STG A21ccaudal area 21-65, -30, -1265, -29, -138384MTGs A21ccaudal area 21-53, 2, -3051, 6, -328586MTGs A37dldorsolateral area 37-59, -58, 460, -53, 38990Inferior Temporal GyrusITG A20ivintermediate ventral area 20-45, -62, -746, -14, -339192ITG A20iintermediate area 37-51, -57, -1553, -52, -189394ITG A20iintermediate area 37-55, -60, -654, -57, -899100ITG A20clcaudolateral area 20-56, -16, -2855, -11, -329798ITG A20clcaudolateral area 20-56, -16, -2855, -11, -329798ITG A20clcaudolateral area 20-56, -16, -2855, -11, -329798ITG A20clcaudolateral area 20-56,	61	62		PrG A4tl	area 4 (tongue and larvnx region)	-52 0 8	54 4 9
6566FCL A1/2/3llarea $1/2/3$ (lower limb region)-8, -38, 5810, -34, 546768FCL A1/2/3llarea $1/2/3$ (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A41/42area $41/42$ -54, -32, 1254, -24, 117374STG FE1.0 and TE1.2TE1.0/TE1.2-50, -11, 151, -4, -17576STG A22ccaudal area 22-62, -33, 766, -20, 67778STG A21ccaudal area 21-65, -30, -1265, -29, -138384MTGs A21ccaudal area 21-53, 2, -3051, 6, -328586MTGs A21rrostral area 21-53, 2, -3051, 6, -638990Inferior Temporal GyrusITG A20ivintermediate ventral area 37-59, -58, 460, -53, 39192ITG A20ivintermediate ventral area 37-51, -57, -1553, -52, -189394ITG A20ivrostral area 20-43, -2, -4140, 0, -439596ITG A20ilintermediate lateral area 37-51, -57, -1553, -52, -1899100ITG A20ilintermediate area 37-55, -60, -654, -57, -899100ITG A20clcaudolateral area 20-56, -16, -2855, -11, -329798ITG A37vlventrolateral area 20-56, -16, -2855, -11, -3291102ITG A20clcaudolater	63	64		PrG A6cyl	caudal ventrolateral area 6	-49 5 30	51, 7, 30
6768PCL Allarea $1/2/5$ (lower limb region)-4, -23, 615, -21, 616970Superior Temporal GyrusSTG A38mmedial area 38-32, 14, -3431, 15, -347172STG A41/42area $41/42$ -54, -32, 1254, -24, 117374STG A41/42area $41/42$ -54, -32, 1254, -24, 117576STG A22ccaudal area 22-50, -11, 151, -4, -17778STG A22ccaudal area 38-45, 11, -2047, 12, -207980STG A21ccaudal area 21-65, -30, -1265, -29, -138384MTGs A21ccaudal area 21-65, -30, -56, -65, -29, -138586MTGs A37dldorsolateral area 37-59, -58, 460, -53, 38788MTGs A37dldorsolateral area 20-45, -26, -2746, -14, -339192ITG A20ivintermediate ventral area 20-45, -26, -27, -46, -14, -339394ITG A20ivintermediate area 37-51, -57, -1553, -52, -189394ITG A20ilintermediate lateral area 37-55, -60, -654, -57, -899100ITG A20ilintermediater area 37-55, -60, -654, -57, -899100ITG A20clcaudolateral area 37-55, -60, -654, -57, -899100ITG A20clcaudolateral area 20-56, -16, -2855, -11, -3291102ITG A37lvventrolateral area 20-56, -16, -2855, -11, -32	65	66		PCL A1/2/31	area $1/2/3$ (lower limb region)	-8 -38 58	10 -34 54
6970Superior Temporal GyrusSTG A38mmedial area 38 $-32, 14, -34$ $31, 5, -34$ 7172STG A41/42area 41/42 $-54, -32, 12$ $54, -24, 11$ 7374STG TE1.0 and TE1.2TE1.0/TE1.2 $-50, -11, 1$ $51, -4, -1$ 7576STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A22rrostral area 22 $-55, -3, -10$ $56, -12, -5$ 8182Middle Temporal GyrusMTGs A21ccaudal area 21 $-65, -30, -12$ $65, -29, -13$ 8384MTGs A21rrostral area 21 $-53, 2, -30$ $51, 6, -32$ 8586MTGs A37dldorsolateral area37 $-59, -58, 4$ $60, -53, 3$ 8788MTGs aSTSanterior superior temporal sulcus $-58, -20, -9$ $-88, -16, -10$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27$ $46, -14, -33$ 9192ITG A20ivintermediate lateral area 20 $-43, -2, -41$ $40, 0, -43$ 9596ITG A20iintermediate lateral area 20 $-43, -24, -14$ $40, 0, -43$ 9798ITG A37vlventrolateral area 20 $-55, -60, -6, 54, -57, -8$ 99100ITG A20clcaudolateral of area 20 $-55, -31, -27, 54, -31, -26$ 103104Fusiform GyrusFuG A20rvrostroventral area 37 $-31, -64, -14, -31, -26, -27$ 103104Fusiform GyrusFuG A20rvrostroventral area 20 </td <td>67</td> <td>68</td> <td></td> <td>PCL A4ll</td> <td>area 4 (lower limb region)</td> <td>-4 -23 61</td> <td>5 -21 61</td>	67	68		PCL A4ll	area 4 (lower limb region)	-4 -23 61	5 -21 61
ofToExperies Femporal GynasSTG A41/42area 41/42 $-54, -32, 12$ $54, -24, 11$ 7374STG TE1.0 and TE1.2TE1.0/TE1.2 $-50, -11, 1$ $51, -4, -1$ 7576STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A381lateral area 38 $-45, 11, -20$ $47, 12, -20$ 7980STG A22rrostral area 21 $-55, -3, 0, -12$ $65, -29, -13$ 8184MTGs A21ccaudal area 21 $-65, -30, -12$ $65, -29, -13$ 8384MTGs A21rrostral area 37 $-59, -58, 4$ $60, -53, 3$ 8788MTGs aSTSanterior superior temporal sulcus $-45, -26, -27$ $66, -14, -33$ 9192ITG A20ivintermediate ventral area 37 $-51, -57, -15$ $53, -52, -18$ 9394ITG A20ivintermediate ventral area 20 $-43, -2, -41$ $40, 0, -43$ 9596ITG A20ilintermediate area 20 $-56, -16, -28$ $55, -11, -32$ 9798ITG A20clcaudolateral area 20 $-55, -30, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -37, -8$ 91102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 91102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 91102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 103	69	70	Superior Temporal Gyrus	STG A38m	medial area 38	-32 14 -34	31 15 -34
7374STG TE1.0 and TE1.2TE1.0/TE1.2 $-50, -61, 12$ $51, -4, -1$ 7576STG A22ccaudal area 22 $-62, -33, 7$ $66, -20, 6$ 7778STG A381lateral area 38 $-45, 11, -20$ $47, 12, -20$ 7980STG A22rrostral area 21 $-55, -3, -10$ $56, -12, -5$ 8182Middle Temporal GyrusMTGs A21ccaudal area 21 $-65, -30, -12$ $65, -20, -62, -33$ 8384MTGs A21rrostral area 21 $-53, 2, -30$ $51, 6, -32$ 8586MTGs A37dldorsolateral area37 $-59, -58, 4$ $60, -53, 3$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27$ $46, -14, -33$ 9192ITG A37clvextreme lateroventral area 37 $-51, -57, -15$ $53, -52, -18$ 9394ITG A20irintermediate lateral area 37 $-55, -60, -6$ $54, -57, -8$ 99100ITG A20ilintermediate area 37 $-55, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral area 37 $-55, -60, -6$ $54, -57, -8$ 91102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 91104Fusiform GyrusFuG A20rvrostroventral area 37 $-55, -50, -50, -60, -6$ $54, -57, -8$ 92100ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 93104Fusiform GyrusFuG A20clcaudolater	71	72	Superior remportat offus	STG A41/42	area 41/42	-54 -32 12	54 -24 11
7576STG A22ccaudal area 22 $-62, -33, 7$ $-66, -20, 6$ 7778STG A22ccaudal area 22 $-62, -33, 7$ $-66, -20, 6$ 7778STG A22rrostral area 22 $-55, -3, -10$ $56, -12, -5$ 8182Middle Temporal GyrusMTGs A21ccaudal area 21 $-65, -30, -12$ $65, -30, -12$ 8384MTGs A21rrostral area 21 $-53, 2, -30$ $51, 6, -32$ 8586MTGs A37dldorsolateral area37 $-59, -58, 4$ $60, -53, 3$ 8788MTGs A37dlanterior superior temporal sulcus anterior superior temporal sulcus area 20 $-45, -26, -27$ $46, -14, -33$ 9192ITG A20ivinterme lateroventral area 20 $-45, -26, -27$ $46, -14, -33$ 9394ITG A20ivintermediate lateral area 20 $-43, -2, -41$ $40, 0, -43$ 9596ITG A20ilintermediate area 20 $-56, -16, -28$ $55, -11, -32$ 9798ITG A20clcaudolateral area 37 $-55, -56, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral area 20 $-55, -31, -27$ $54, -57, -8$ 91102ITG A20clcaudolateral area 20 $-55, -31, -27$ $54, -31, -26$ 103104Fusiform GyrusFuG A20rvrostroventral area 37 $-33, -16, -32$ $33, -16, -32$ $33, -16, -32$ 105106FuG A37hvmedioventral area 37 $-31, -64, -14$ $31, -62, -14$ 107108FuG A37hv	73	74		STG TE1 0 and TE1 2	TE1 0/TE1 2	-50 -11 1	51 -4 -1
7778STG A381lateral area 38 $-45, 11, -20$ $47, 12, -20$ 7980STG A22rrostral area 22 $-55, -3, -10$ $56, -12, -5$ 8182Middle Temporal GyrusMTGs A21ccaudal area 21 $-65, -30, -12$ $65, -29, -13$ 8384MTGs A21rrostral area 21 $-53, 2, -30$ $51, 6, -32$ 8586MTGs A37dldorsolateral area 37 $-59, -58, 4$ $60, -53, 3$ 8788MTGs A37dluserior superior temporal sulcus $-58, -20, -9$ $58, -16, -10$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27$ $46, -14, -33$ 9192ITG A37elvextreme lateroventral area 37 $-51, -57, -15$ $53, -52, -18$ 9394ITG A20iintermediate lateral area 20 $-43, -2, -41$ $40, 0, -43$ 9596ITG A20ilintermediate lateral area 37 $-55, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral area 37 $-55, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral area 20 $-59, -42, -16$ $61, -40, -17$ 101102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -31, -26$ 103104Fusiform GyrusFuG A20rvrostroventral area 20 $-33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, -16, -32$ $33, $	75	76		STG A22c	caudal area 22	-62 -33 7	66 -20 6
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	77	78		STG A381	lateral area 38	-45 11 -20	47 12 -20
1550Middle Temporal GyrusMTGs A21crostral area 21 $-65, -30, -12$ $65, -29, -13$ 8384MTGs A21rrostral area 21 $-53, 2, -30$ $51, 6, -32$ 8586MTGs A37dldorsolateral area 37 $-59, -58, 4$ $60, -53, 3$ 8788MTGs aSTSanterior superior temporal sulcus $-58, -20, -9$ $58, -60, -10$ 8990Inferior Temporal GyrusITG A20ivintermediate ventral area 37 $-51, -57, -15$ $53, -52, -18$ 9394ITG A20ilintermediate area 20 $-43, -2, -41$ $40, 0, -43$ 9596ITG A20ilintermediate area 37 $-56, -16, -28$ $55, -11, -32$ 9798ITG A20ilintermediate area 37 $-55, -60, -6$ $54, -57, -8$ 99100ITG A20clcaudolateral area 37 $-55, -60, -6$ $54, -57, -8$ 91102ITG A20clcaudolateral area 20 $-55, -31, -27$ $54, -57, -8$ 91102ITG A20clcaudolateral of area 20 $-55, -31, -27$ $54, -57, -8$ 103104Fusiform GyrusFuG A20rvrostroventral area 37 $-31, -64, -14$ $31, -62, -14$ 106FuG A37lylateroventral area 37 $-31, -64, -14$ $31, -62, -14$ 107108FuG A37lylateroventral area 37 $-31, -64, -14, -14, -17$	79	80		STG A22r	rostral area 22	-55 -3 -10	56 -12 -5
org	81	82	Middle Temporal Gyrus	MTGs A21c	caudal area 21	-65 -30 -12	65 -29 -13
85 86 MTGS A37dldorsolateral area37 $-59, -58, 4$ $60, -53, 3$ 87 88 MTGS aSTSanterior superior temporal sulcus $-58, -20, -9$ $58, -16, -10$ 89 90 Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27$ $46, -14, -33$ 91 92 ITG A37elvextreme lateroventral area 37 $-51, -57, -15$ $53, -52, -18$ 93 94 ITG A20rrostral area 20 $-43, -2, -41$ $40, 0, -43$ 95 96 ITG A20ilintermediate lateral area 20 $-56, -16, -28$ $55, -11, -32$ 97 98 ITG A20ilintermediate lateral area 37 $-55, -60, -6$ $54, -57, -8$ 99 100 ITG A20clcaudolateral of area 20 $-59, -42, -16$ $61, -40, -17$ 101 102 ITG A20cvcaudolateral of area 20 $-55, -31, -27$ $54, -31, -26$ 103 104 Fusiform GyrusFuG A20rvrostroventral area 37 $-31, -44, -14$ $31, -62, -14$ 105 106 FuG A37hvmedioventral area 37 $-31, -64, -14$ $31, -62, -14$ 107 108 FuG A37hvlateroventral area 37 $-31, -64, -14$ $31, -62, -14$	83	84	windene Temporar Gyras	MTGs A21r	rostral area 21	-53 2 -30	51 6 -32
87 88 MTGs aSTSanterior superior temporal subus $-58, -20, -9$ $-58, -16, -10$ 89 90 Inferior Temporal GyrusITG A20ivintermediate ventral area 20 $-45, -26, -27$ $46, -14, -33$ 91 92 ITG A37elvextreme lateroventral area 37 $-51, -57, -15$ $53, -52, -18$ 93 94 ITG A20irrostral area 20 $-43, -2, -41$ $40, 0, -43$ 95 96 ITG A20ilintermediate lateral area 20 $-43, -2, -41$ $40, 0, -43$ 97 98 ITG A37vlventrolateral area 37 $-55, -60, -6$ $54, -57, -8$ 99 100 ITG A20clcaudolateral of area 20 $-59, -42, -16$ $61, -40, -17$ 101 102 ITG A20cvcaudolateral of area 20 $-55, -31, -27$ $54, -31, -26$ 103 104 Fusiform GyrusFuG A20rvrostroventral area 20 $-33, -16, -32$ $33, -16, -32$ 105 106 FuG A37mvmedioventral area 37 $-31, -64, -14$ $31, -62, -14$ 107 108 FuG A37lylateroventral area 37 $-31, -64, -14$ $40, -12$	85	86		MTGs A37dl	dorsolateral area37	-59 -58 4	60 -53 3
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	87	88		MTGs aSTS	anterior superior temporal sulcus	-58 -20 -9	58 -16 -10
05 05 05 110	89	90	Inferior Temporal Gyrus	ITG A20iv	intermediate ventral area 20	-45 -26 -27	46 -14 -33
31 32 11 G A20r rostral area 20 -43, -51, -17 60, -52, -10 60, -43 90, -52, -10 60, -43 90, -52, -10 60, -43 90, -52, -10 60, -43 90, -43 91, -43 95 96 ITG A20il intermediate lateral area 20 -43, -2, -41 40, 0, -43 91, -32 97 98 ITG A37vl ventrolateral area 37 -55, -60, -6 54, -57, -8 99 100 ITG A20cl caudolateral of area 20 -55, -41, -40, -17 61, -40, -17 101 102 ITG A20cv caudolateral of area 20 -55, -51, -57, -54, -31, -26 103, -10, -17 101 102 ITG A20cv caudolateral of area 20 -55, -31, -27 54, -31, -26 103, -10 104 Fusiform Gyrus Fug A20rv rostroventral area 20 -33, -16, -32 33, -15, -34 105 106 Fug A37ly Interviewentral area 37 -31, -64, -14 31, -62, -14 107 108 Fug A37ly Interviewentral area 37 -31, -64, -14 31, -62, -14 40, -10	01	02	interior reinporar Gyrus	ITG A37ely	extreme lateroventral area 20	-51 -57 -15	53 -52 -18
95 96 ITG A20il intermediate lateral area 20 -56, -16, -28 55, -11, -32 97 98 ITG A20il intermediate lateral area 20 -55, -60, -6 54, -57, -8 99 100 ITG A20cl caudolateral of area 20 -59, -42, -16 61, -40, -17 101 102 ITG A20cv caudolateral of area 20 -55, -31, -27 54, -31, -26 103 104 Fusiform Gyrus FuG A20rv rostroventral area 20 -33, -16, -32 33, -15, -34 105 106 FuG A37ly lateroventral area37 -31, -64, -14 31, -62, -14 107 108 FuG A37ly lateroventral area37 -31, -64, -14 31, -62, -14	93	94		ITG A20r	rostral area 20	-43 -2 -41	40 0 -43
97 98 ITG A37vl ventrolateral area 37 -55, -60, -6 54, -57, -8 99 100 ITG A20cl caudolateral of area 20 -59, -42, -16 61, -40, -17 101 102 ITG A20cl caudolateral of area 20 -55, -51, -27 54, -31, -26 103 104 Fusiform Gyrus FuG A20rv rostroventral area 20 -33, -16, -32 33, -15, -34 105 106 FuG A37hv medioventral area37 -41, -64, -14 31, -62, -14 107 108 FuG A37hv lateroventral area37 -42, -51, -17, 43, -40, -19	95	96		ITG A20il	intermediate lateral area 20	-56 -16 -28	55 -11 -32
57 56 11G A3/W vendolateral area 37 -50, -00, -0 53, -07, -8 99 100 ITG A20cl caudolateral of area 20 -59, -42, -16 61, -40, -17 101 102 ITG A20cl caudoventral of area 20 -55, -31, -27 54, -31, -26 103 104 Fusiform Gyrus FuG A20rv rostroventral area 20 -33, -16, -32 33, -15, -34 105 106 FuG A37hv medioventral area37 -31, -64, -14 31, -62, -14 107 108 FuG A37hv lateroventral area37 -42, -51, 17, 43, -40, -19	97	08		ITC A37vl	ventrolatoral area 27	-55 -60 -6	54 -57 -8
35 100 11G A20Cr Caudotate a to area 20 -39, 42, -10 01, -40, -11 101 102 ITG A20cv caudotate a to area 20 -55, -31, -27 54, -31, -26 103 104 Fusiform Gyrus FuG A20rv rostroventral area 20 -53, -16, -32 33, -15, -34 105 106 FuG A37mv medioventral area37 -31, -64, -14 31, -62, -14 107 108 FuG A37ly lateroventral area37 -42, -51, -17, 43, -40, -19	91	100		ITC A20el	condulatoral of area 20	-50, -00, -0	61 -40 -17
101 102 110 110 110 110 110 110 111 <td>101</td> <td>102</td> <td></td> <td>ITG A20ev</td> <td>caudoventral of area 20</td> <td>-55 -31 -27</td> <td>54 _31 _26</td>	101	102		ITG A20ev	caudoventral of area 20	-55 -31 -27	54 _31 _26
105 106 FuG A37hv nedioventral area37 -31, -64, -14 31, -62, -14 107 108 FuG A37hv lateroventral area37 -42, -51, -17, 43, -40, -19	103	102	Fusiform Gyrus	FuG A20ry	rostroventral area 20	-33 -16 -32	33 -15 -34
105 105 106 Full AsTly Interventral areas -01, -04, -14 01, -02, -14 107 108 Full AsTly lateroventral areas -42, -51, -17, 43, 40, -10	105	104	rusitorin Gyrus	FuG A37my	medioventral area 20	-31 -64 -14	31 -62 -14
	107	108		FuG A37ly	lateroventral area37	-42 -51 -17	43 -49 -19

Table 1: Brain regions and their abbreviations in the Brainnetome Atlas (ID: 1-108). Abbreviations: lh, left hemisphere; rh, right hemisphere; MNI, Montreal Neurological Institute coordinates.

Table 2: Brain regions and their abbreviations in the Brainnetome Atlas (ID: 109-210). Abbreviations: lh, left hemisphere; rh, right hemisphere; MNI, Montreal Neurological Institute coordinates.

lh.ID	rh.ID	Module	Abbreviation	Regions	lh.MNI	rh.MNI
109	110	Parahippocampal Gyrus	PhG A35/36r	rostral area 35/36	-27, -7, -34	28, -8, -33
111	112		PhG A35/36c	caudal area 35/36	-25, -25, -26	26, -23, -27
113	114		PhG TL	area TL (lateral posterior parahippocampal gyrus)	-28, -32, -18	30, -30, -18
115	116		$\rm PhG~A28/34$	area 28/34 (EC entorhinal cortex)	-19, -12, -30	19, -10, -30
117	118		PhG TI	area 11 (temporal agranular insular cortex)	-23, 2, -32	22, 1, -36
119	120	nectorion Currenion	PhG TH	area TH (medial PPHC)	-17, -39, -10	19, -36, -11
121	122	Temporal Sulcus	pSTS rpSTS	rostroposterior superior temporal sulcus	-54, -40, 4	53, -37, 3
123	124		pSTS cpSTS	caudoposterior superior temporal sulcus	-52, -50, 11	57, -40, 12
125	126	Superior Parietal Lobule	SPL A7r	rostral area 7	-16, -60, 63	19, -57, 65
127	128		SPL A7c	caudal area 7	-15, -71, 52	19, -69, 54
129	130		SPL A51	lateral area 5	-33, -47, 50	35, -42, 54
131	132		SPL A7pc	postcentral area 7	-22, -47, 65	23, -43, 67
133	134		SPL A7ip	intraparietal area 7 (hIP3)	-27, -59, 54	31, -54, 53
135	136	Inferior Parietal Lobule	IPL A39c	caudal area 39 (PGp)	-34, -80, 29	45, -71, 20
137	138		IPL A39rd	rostrodorsal area 39 (Hip3)	-38, -61, 46	39, -65, 44
139	140		IPL A40rd	rostrodorsal area 40 (PFt)	-51, -33, 42	4735. 45
141	142		IPL A40c	caudal area 40 (PFm)	-56 -49 38	57 -44 38
143	144		IPL A39rv	rostroventral area 39 (PGa)	-47 -65 26	53 -54 25
145	146		IDI A40m	rostroventral area 40 (PEop)	53 31 23	55 26 26
140	140	Procurous	Doup A7m	modial area 7 (DEn)	5 69 51	6 65 51
147	140	Fieculieus	P CUIIA7III D cuii A Fair	mediai area 7 (FEp)	-0, -00, 01	0, -05, 51
149	150		PeunAbm	dorsomedial parietooccipital	-8, -47, 57	1, -41, 58
151	152		PcundmPOS	sulcus (PEr)	-12, -67, 25	16, -64, 25
153	154		PcunA31	area 31 (Lc1) area $1/2/3$	-6, -55, 34	6, -54, 35
155	156	Postcentral Gyrus	PoG A1/2/3ulhf	(upper limb, head and face region)	-50, -16, 43	50, -14, 44
157	158		PoG A1/2/3tonIa	area $1/2/3$ (tongue and larynx region)	-56, -14, 16	56, -10, 15
159	160		PoG A2	area 2	-46, -30, 50	48, -24, 48
161	162		PoG A1/2/3tru	area1/2/3 (trunk region)	-21, -35, 68	20, -33, 69
163	164	Insular Gyrus	INS G	hypergranular insula	-36, -20, 10	37, -18, 8
165	166		INS vIa	ventral agranular insula	-32, 14, -13	33, 14, -13
167	168		INS dIa	dorsal agranular insula	-34, 18, 1	36, 18, 1
169	170		INS vId/vIg	ventral dysgranular and granular insula	-38, -4, -9	39, -2, -9
171	172		INS dIg	dorsal granular insula	-38, -8, 8	39, -7, 8
173	174		INS dId	dorsal dysgranular insula	-38, 5, 5	38, 5, 5
175	176	Cingulate Gyrus	CG A23d	dorsal area 23	-4 -39 31	4 -37 32
177	178	emganate egras	CG A24rv	rostroventral area 24	-3 8 25	5 22 12
179	180		CG A32n	pregenual area 32	-6 34 21	5 28 27
181	182		CG A23v	ventral area 23	-8 -47 10	9 -44 11
183	184		CC A24ed	anudodorsal area 24	5 7 97	4 6 38
105	104		CG A2400	caudodolsal area 24	-0, 7, 07	6 20 40
100	100		CG A23c	caudai area 23	-1, -23, 41	5 41 6
107	100	MedioVentral	UG A528g	subgenuar area 52	-4, 39, -2	5, 41, 0
189	190	Occipital Cortex	MVOcC cLinG	caudal lingual gyrus	-11, -82, -11	10, -85, -9
191	192		MVOcC rCunG	rostral cuneus gyrus	-5, -81, 10	7, -76, 11
193	194		MVOcC cCunG	caudal cuneus gyrus	-6, -94, 1	8, -90, 12
195	196		MVOcC rLinG	rostral lingual gyrus	-17, -60, -6	18, -60, -7
197	198		MVOcC vmPOS	ventromedial parietooccipital sulcus	-13, -68, 12	15, -63, 12
199	200	Lateral Occipital Cortex	LOcC mOccG	middle occipital gyrus	-31, -89, 11	34, -86, 11
201	202	-	LOcC V5/MT+	area V5/MT+	-46, -74, 3	48, -70, -1
203	204		LOcC OPC	occipital polar cortex	-18, -99, 2	22, -97, 4
205	206		LOcC iOccG	inferior occipital gyrus	-30, -88, -12	32, -85, -12
207	208		LOcC msOccG	medial superior occipital gyrus	-11, -88, 31	16, -85, 34
209	210		LOcC IsOccG	lateral superior occipital gyrus	-22, -77, 36	2975. 36
	210		1000 00000	interal superior occipital gyrus		20, 10,00