Supplementary

Equation and explanation

1. $$Cp = \sum_{i \in N} \frac{2ti}{ki(ki-1)}$$

The clustering coefficient was regarded as the probability of finding a connection between any two neighbors of node *i*, k_i is the degree of node *i*, and t_i is the number of closed triangles attached to *i* (44).

2. $$Lp = \frac{1}{N}\sum_{i} li = \frac{1}{N(N-1)}\sum_{i \neq j} lij$$

l_i is the average shortest path length from node *i* to all other nodes and l_{ij} is the shortest path length from node *j* to node *i*, which is computed with Dijkstra's algorithm or one of its variants. This formulation is applicable to both directed and undirected networks (44).

3. $$\gamma = \frac{Cp}{Cprand}$$

Cp_{rand} is the average clustering coefficient computed in an ensemble of randomized surrogate networks (44).

4. $$\lambda = \frac{Lp}{Lprand}$$

L*p* is the average shortest path length between nodes in the network. Lp_{rand} is the average shortest path length computed in an ensemble of randomized surrogate networks (44).

5. $$\sigma = \frac{\gamma}{\lambda}$$

This index is a ratio of the normalized clustering and path length measures (44).

6. $$Eglob = \frac{1}{N(N-1)}\sum_{i \neq j} \frac{1}{lij}$$

E*glob* is the reciprocal of the harmonic mean of its path lengths (44).
G*i* denotes the subgraph comprising all nodes that are immediate neighbors of the *ith* node (44).

7. $$Eloc = \frac{1}{NGi(NGi-1)} \sum_{j,h \in Gi} \frac{1}{jh'}$$

References

44. Fornito A, Zalesky A, Bullmore E. Fundamentals of brain network analysis: Academic Press; 2016.

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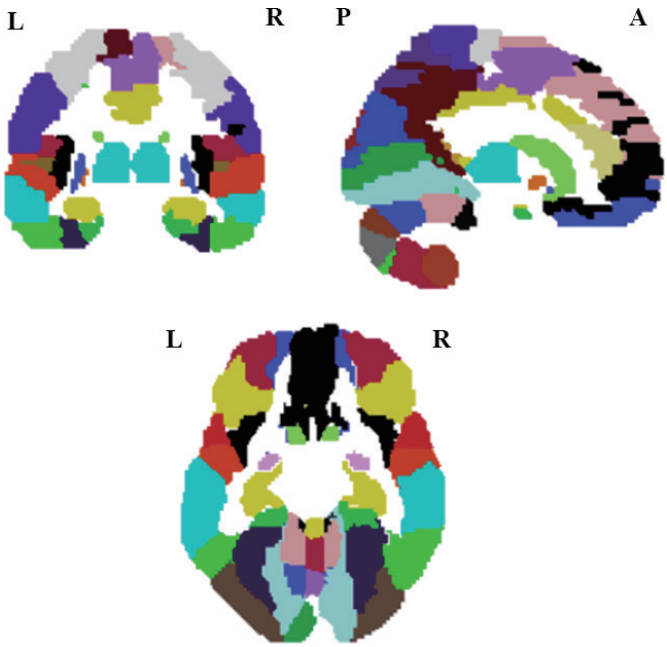

Figure S1 Automated anatomical labeling (AAL) atlas. Different colors represent different regions. L = left; R = right; P=Posterior; A = anterior.

Table S1 Brief introduction of network metrics

Network metrics	Definition
Clustering coefficient (*Cp*)	A measure of network average local density
Characteristic path length (*Lp*)	The average of the shortest path lengths between any pair of nodes in the network.
Normalized *Cp* (γ)	The ratio of the *Cp* between real and random networks
Normalized *Lp* (λ)	The ratio of the *Lp* between real and random networks
Small-worldness (σ)	Scalar quantitative measurement of the small-wordness of a network
Global efficiency (*Eglob*)	A measure of the global efficiency of parallel information transfer in the network
Local efficiency (*Eloc*)	A measure of the fault tolerance of the network

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