Supplementary Table 1. Within- and between-network breakdown of the group edge-wise differential power vector (*DP*, top) and group edge-wise consistency vector (Φ, bottom) at six sparsity thresholds. Each cell reflects the percentage of edges in the vector linking two networks (shown at left) at a given sparsity threshold. The three visual networks (Visual I, Visual II and Visual association; networks 6, 7 and 8) were grouped for purposes of this table. *FP, frontoparietal (networks 1 and 2); DMN, default-mode network (network 3). All other networks as in Fig. 1c.*

DP	Sparsity thresholds					
	99.9	99.5	99	98	95	90
FP <---> FP	33.33	27.93	27.65	24.86	20.68	16.27
FP <---> DMN	13.89	16.20	13.97	13.55	11.18	8.80
FP <---> Subcortical	25	20.11	17.88	17.60	14.25	12.91
FP <---> Motor	0	5.03	6.14	7.68	9.67	10.40
FP <---> Visual	5.55	7.26	9.50	11.17	12.91	12.63
DMN <---> DMN	2.78	5.58	3.91	3.07	1.68	1.12
DMN <---> Subcortical	8.33	5.03	3.07	4.33	4.47	4.36
DMN <---> Motor	5.56	2.23	1.96	1.96	2.29	2.57
DMN <---> Visual	0	2.23	2.51	3.21	3.52	3.33
Subcortical <---> Subcortical	2.78	1.12	1.68	1.40	1.96	2.46
Subcortical <---> Motor	2.78	3.91	5.59	4.89	4.58	4.95
Subcortical <---> Visual	0	1.68	2.23	2.51	4.69	7.35
Motor <---> Motor	0	0	0.28	0.28	0.50	0.87
Motor <---> Visual	0	1.12	1.95	1.68	4.58	7.63
Visual <---> Visual	0	0.56	1.68	1.82	3.02	4.36

Φ	Sparsity Thresholds					
	99.9	99.5	99	98	95	90
FP <---> FP	11.11	13.97	16.76	18.16	17.22	15.68
FP <---> DMN	2.78	4.47	5.31	5.59	5.87	7.35
FP <---> Subcortical	0	2.23	3.07	4.33	6.93	8.22
FP <---> Motor	0	1.12	2.79	4.47	8.66	10.93
FP <---> Visual	2.78	5.59	3.35	2.79	6.09	9.00
DMN <---> DMN	5.56	4.47	3.63	3.35	2.74	2.07
DMN <---> Subcortical	0	0	0	0.84	1.57	2.32
DMN <---> Motor	0	0	0	0.14	1.45	2.32
DMN <---> Visual	0	0	0.84	1.68	2.40	3.55
Subcortical <---> Subcortical	0	2.23	4.75	4.19	5.20	5.76
Subcortical <---> Motor	0	0	1.12	2.09	3.41	4.61
Subcortical <---> Visual	0	0.56	1.12	2.09	2.30	2.63
Motor <---> Motor	19.44	22.35	22.90	21.65	17.27	11.63
Motor <---> Visual	0	0.56	1.12	2.23	2.68	3.35
Visual <---> Visual	58.33	42.46	33.24	26.40	16.21	10.59

Network pair

Supplementary Table 2. Identification accuracy based on different smoothing kernel sizes for the BOLD data.

Rates based on the frontoparietal networks (1+2) as well as the whole brain ("All") are shown.

	No smoothing		4mm		6mm		8mm	
Database/target	1+2	All	1+2	All	1+2	All	1+2	All
Rest1/Rest2	0.9921	0.9286	0.9921	0.9286	0.9921	0.9286	0.9841	0.9048
Rest2/Rest1	0.9762	0.9444	0.9683	0.9286	0.9762	0.9444	0.9683	0.9286

Supplementary Table 3. Comparing accuracy of identification based on functional connectivity versus BOLD variance.

In each cell, the top number in the smaller font represents the identification accuracy achieved using the connectivity matrices (identical to Fig. 2b in the manuscript), and the larger number underneath is the accuracy of identification based on BOLD variance (see Online Methods for details of how BOLD variance was calculated). Data shown are from BOLD variance in the frontoparietal networks (1 and 2), to facilitate comparison.

Test ⇒ Database ⇓	Rest2	Language	Emotion	Test ⇒ Database ⇓	Rest1	WM	Motor
Rest1	0.99 / 0.87	0.85 / 0.49	0.82 / 0.71	Rest2	0.98 / 0.86	0.89 / 0.60	0.92 / 0.52
WM	0.87 / 0.60	0.90 / 0.69	0.86 / 0.62	Language	0.89 / 0.52	0.90 / 0.67	0.79 / 0.48
Motor	0.83 / 0.51	0.64 / 0.51	0.79 / 0.48	Emotion	0.92 / 0.71	0.86 / 0.64	0.93 / 0.56