Table S1. Node and fMRI image of Edge (Neuroticism)

Edge	Node	
Positive		
34775	 Posterior lobe cerebelli	 Thalamus
35216	 Anterior lobe cerebelli	 Posterior lobe cerebelli
37466	 Posterior lobe cerebelli	 Thalamus
Negative		
8664	 Inferior parietal lobule	 Caudate nucleus
10935	 Visual association cortex	 Posterior lobe cerebelli
15413	 Middle frontal gyrus	 Posterior lobe cerebelli
18651	 Frontal lobe	 Middle temporal gyrus

26744			
	Posterior lobe cerebelli	Somatosensory association cortex	
32355			
	Posterior lobe cerebelli	Pons	
41644			
	Orbitofrontal cortex	Anterior lobe cerebelli	

Functional connections that are significantly associated with Neuroticism (P = 0.05). There are 3 positive functional connections and 7 negative functional connections.

Table S2. Node and fMRI image of Edge (Extroversion)

Edge	Node	
Positive		
6291		
	Visual association cortex	Anterior lobe cerebelli
42791		
	Posterior lobe cerebelli	Posterior lobe cerebelli
Negative		
39149		
	Posterior lobe cerebelli	Midbrain
40532		
	Midbrain	Primary visual cortex
43134		
	Posterior lobe cerebelli	Striatum

Functional connections that are significantly associated with Extroversion (P = 0.05). There are 2 positive functional connections and 3 negative functional connections.

Table S3. Node and fMRI image of Edge (Openness)

Edge	Node	
Positive		
551		
	Visual association cortex	Anterior lobe cerebelli
7925		
	Superior parietal lobule & Precentral sulcus	Posterior lobe cerebelli
Negative		
14333		
	Primary visual cortex	Thalamus

Functional connections that are significantly associated with Openness (P = 0.05). There are 2 positive functional connections and 1 negative functional connection.

Table S4. Node and fMRI image of Edge (Conscientiousness)

Edge	Node	
Positive		
1179		
	Primary visual cortex	Anterior lobe cerebelli
Negative		
41518		
	Orbitofrontal cortex	Anterior lobe cerebelli
43134		
	Posterior lobe cerebelli	Striatum

Functional connections that are significantly associated with Conscientiousness (P = 0.05). There are 1 positive functional connection and 2 negative functional connections.

Table S5. Node and fMRI image of Edge (Agreeableness)

Edge	Node	
Positive		
6469		
	Lateral sulcus	Striatum
21300		
	Fusiform gyrus	Striatum
44742		
	Posterior lobe cerebelli	Visual association cortex
Negative		
28992		
	Posterior lobe cerebelli	Posterior lobe cerebelli

Functional connections that are significantly associated with Agreeableness ($P = 0.05$).

There are 3 positive functional connections and 1 negative functional connection.

Table S6. Weight calculation of neural functional networks (Neuroticism)

Edge	Weight
35216	0.13
18651	0.21
34775	0.10
32355	0.01
10935	-0.17
41644	0.24
15413	-0.09
26744	0.33
37466	0.17
8664	0.08
Total	1

Weights of different edges are determined by principal component analysis. The neural function network is obtained by adding the edges according to the calculated weights.

Table S7. Weight calculation of neural functional networks (Extroversion).

Edge ID	Weight
43134	0.10
42791	0.21
39149	0.07
6291	0.35
40532	0.27
Total	1

Weights of different edges are determine by principal component analysis. The neural function network is obtained by adding the edges according to the calculated weights.

Table S8. Weight calculation of neural functional networks (Openness).

Edge ID	Weight
7925	0.38
551	0.21
14333	0.41
Total	1

Weights of different edges are determine by principal component analysis. The neural function network is obtained by adding the edges according to the calculated weights.

Table S9. Weight calculation of neural functional networks (Conscientiousness)

Edge ID	Weight
1179	-2.52
43134	0.33
41518	3.20
Total	1

Weights of different edges are determine by principal component analysis. The neural function network is obtained by adding the edges according to the calculated weights.

Table S10. Weight calculation of neural functional networks (Agreeableness)

Edge ID	Weight
44742	-0.73
28992	0.34
21300	0.47
6469	0.92
Total	1

Weights of different edges are determine by principal component analysis. The neural function network is obtained by adding the edges according to the calculated weights.

Table S11. Simple slopes analyses

Level	Neuroticism	Extroversion	Openness	Conscientiousness
Low	0.000	0.036***	0.025***	0.022***
Media	0.014***	0.015***	0.015***	0.014***
High	0.029***	-0.007	0.005	0.007*

Estimate of different levels of personality traits in simple slopes analyses. ***, **, * denote significance at $P < 0.001$, $P < 0.01$, $P < 0.05$ respectively.