



**S1 Fig: Replication results.** Results obtained by repeating the analysis using an alternative tractography dataset [1] (A) Connectivity matrix of intra-hemispheric axon counts, averaged across the two hemispheres. Parcels are ordered into 10 functional networks [2]. (B) Histograms showing the distribution of inter- and intra-hemispheric pairwise axon counts. Physically adjacent and non-adjacent parcel pair intra-hemispheric histograms are stacked. Median connectivity, shown in gray, is  $\sim 2,500$  axons between cortical areas in the same hemisphere, and  $\sim 300$  inter-hemispherically. Parcel pairs with zero axons connecting them are represented by the bars left of the y-axis. (C) dMRI connectivity as a function fiber tract distance. Pairwise values averaged within 15 fiber-length bins. Shading shows bootstrapped 95% confidence intervals. (D-F) axons counts and densities averaged across the two hemispheres and visualized on the left fsaverage template cortex [3]. (D) total axons connecting each parcel to all others. (E) axons connecting each parcel to all others, normalized by the reference parcel's area. (F) axons connecting the hippocampus to the rest of the cortex, normalized by the area of the cortical parcel, shown in log scale.

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