



S4 Fig: Simulated effect of short axon underestimation on pairwise axon counts. In order to explore the possibility that dMRI tractography is less sensitive to shorter connections the streamline-to-axon ratio was increased linearly with inverse fiber length using a range of slope parameters. Packing density was assumed to be reciprocally decreased in order to fix a constant total cerebral white matter volume. (A) Distributions of Intra- and inter-hemispheric inter-areal axons counts. Gray histograms show the effect of uniformly halving the ratio and doubling the assumed packing density. (B) intra-hemispheric and (C) inter-hemispheric adjustments to the # of pairwise axons as a function of inverse fiber tract length and the resultant increase in median axon count as a function of the adjustments' slope parameter. At slope = 0, values are unadjusted from the primary analysis. Large adjustments only increase median counts modestly in the context of the log-normal distribution. For example, for intra-hemispheric connections (B), at a slope of 0.004, the number of the shortest axons is about doubled (i.e., corresponding to doubling the axon density and halving the sensitivity of dMRI to axons), but the median number of inter-parcel axons only increases by ~36%.