

*Authors' Response*

*The referee is of course right that the probability of finding high correlation between random vectors of low dimension is higher than that of random vectors of high dimension. However, if those low dimensional vectors are averages obtained from block-structured matrices the overall distribution of correlations is sharply skewed toward the high correlation values. To demonstrate this we show below simulations in which we take a 30x40 noisy block structured matrix (with 3x4 blocks) and a random matrix of the same size. Typical histograms of correlations of the original matrices and their averages are shown below. Both histograms of the noisy block-structured matrix (top left) and the random matrix (bottom left) are bell-shaped, whereas the histogram obtained for the block averages of the noisy block-structured matrix shows a clear peak of correlations between 0.8-1 (top right), and the histogram obtained for similar averages of the random matrix is fairly uniform. In this example the ratio of entropies of the correlation histogram of the block data to that of the random data is about 1, while after averaging the ratio of entropies decreases to about 0.9 implying more order in the averaged block data relative to the random data.*

