between memory and visually-guided saccades was statistically reliable (cf., Figure 6a and b; $p < 0.001$).

We plotted the distribution of differences in saccade direction with and without SNr stimulation and found that the angular difference of vectors for memory-guided saccades (Figure 6d) was broader than the distribution of angular differences for visually-guided saccades (Figure 6c). The mean angular difference for visually-guided saccades was 6.65º (SD = 50.97), whereas the mean angular difference for memory-guided saccades was 21.87º (SD = 90.30). Note that to compute the means we used the absolute value of the angular differences which does not provide directional information. To compare these distributions statistically, we used the non-parametric Wilcoxon signed-rank test and found that indeed, the difference between visually-guided and memory-guided stimulation distributions was statistically significant ($p<0.001$). Importantly, we also compared the distributions of vector lengths and angles for the no stimulation condition. If the distribution of amplitudes and angles differed in the no stimulation condition we could not be certain that the differences obtained in the stimulation condition resulted from stimulation or from the pre-existing differences in memory-guided and visually-guided saccades (White et al. 1994). We performed the F test on the distribution of amplitudes in the no stimulation condition for visually-guided and memory-guided eye movements and found no significant differences across the sample of sites ($p = 0.212$). Likewise, for the distribution of angles in the two conditions without stimulation, there was no significant difference using the F Test ($p = 0.138$). Thus, we conclude that for