Supplementary Figure 8. Object exploration analysis. (**a**) Virtual objects used in the task. Object shape and coloring were randomized between sessions. (**b**) Fine direction of trajectories towards virtual objects. Diagram on the left shows the areas used to calculate fine trajectories: percentage between inner (3 cm) and outer (10 cm) radius from the center of objects where consider as trajectories. Sham (dotted circles) and virtual object locations (filled circles) used in the calculations are shown for all objects (top). Percentage of inner trajectories for sham (Sham) and virtual object (VR Obj) locations (**c**) Discriminatory index from same data shown in b, significant discrimination index is observed only in center and wall object (Center: Z=2.889, n=17, ** p<.01; Wall: Z=2.130, n=17, * p<.05; Corner Z=1.008, n=17, p=.08, Wilcoxon sign-rank test). (**d**) Deflection analysis for trajectories around the object. Scatter plots showing the relationship of arc angle made by trajectories entering and leaving the 10 cm circle around the object (deflection angle) and shortest distance between the trajectory to the object, for virtual ("VR", top) and real ("Real", bottom) objects for sham locations (blue) and object locations (red). Note that there is a concentration of trajectories in the vicinity of the object (~3 cm) with low arc angle value (<1.56 rad, 90 degrees), indicated by a dotted rectangle . These trajectories were used in the analysis in Fig. 4D, as they corresponded to trajectories that deflected from the object. Right column, cumulative proportion of deflecting trajectories (<1.56 rad) as function of distance from the object. Distances showing significant difference between object and sham conditions are indicated by thick black line on the right (p<.05, p-value calculated from a permutation distribution shuffled between conditions). (**e**) Example of the occupancy (projected on arena length) distribution of empty arena for the trials that followed object exploration trials, note the peaks that appear at the center of the arena (0, location of the center object), +/- 30cm (location of the wall object), and +/- 50 cm (location of the corner object), indicating a bias of rat behavior by potential spatial memory of the previous virtual object experience in these locations. Error bars above the modes at 0, 30 and 50cm show bootstrap confidence intervals of the mode position computed across control sessions.