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Supplemental Information

Category boundaries modulate memory in a place-cell-like manner

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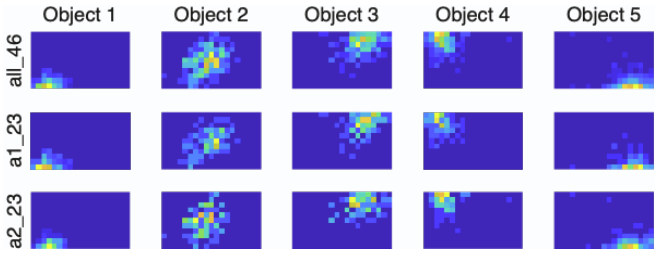

Figure S1 Response distributions in the memory test displayed per assignment group. Related to Figure 1. Response distributions displayed for all participants (N=46; first row) and separately for each feature (dot/stripe) to dimension (stretch/non-stretch) assignment group (a1:N=23; a2: N=23; middle & bottom row). Distribution a1 and a2 do not differ (t=0, p=1).

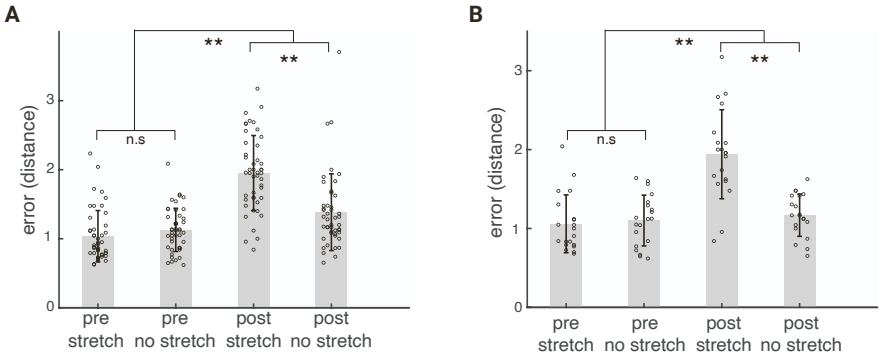

Figure S2 Replication of the time x dimension interaction on memory. Related to Figure 3. The effect is replicated in uncorrected trials only in A) all 46 participants and B) only participants that experienced <= 2 corrections in POST (cf. methods). A) We find a main effect of time (pre, post; F=12.29, p<.0006), a main effect of dimension (stretched, non-stretched; F=75 p=0), and a time x dimension interaction effect (F=23.65, p=0). Post-hoc t-tests reveal no significant memory differences between the stretched and the non-stretched dimension in the pre-test (t= -1.416, p=.164), but in the post-test (t=5.272, p<.0001; Bonferroni adjusted alpha level of .025). B) We find main effects of dimension (F(1, 76)=17, p<.00009), timepoint (F(1,76)=28, p<.0000008), and a time x dimension interaction effect (F(1,76)=21, p<.00001). Post-hoc t-tests reveal no significant memory differences between the stretched and the non-stretched dimension in the pre-test (t= -0.467, p=.646), but in the post-test (t=4.791, p<.0001).

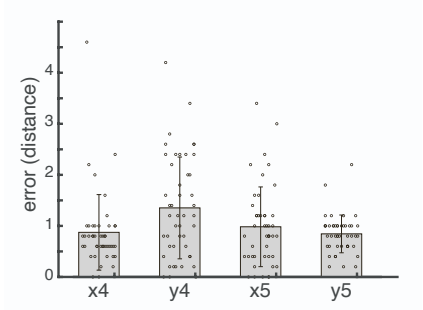

Figure S3 PRE-stretch position memory per dimension. Related to Figure 4. For positions 4 and 5, which both combine low/high feature values (upper left and lower right corner of the category space), pre-test memory is better for the dimension with the lower feature value (error y>x for position 4, t=-2.61, p=.01; error x>y for position 5, t=1.1, p=.27).

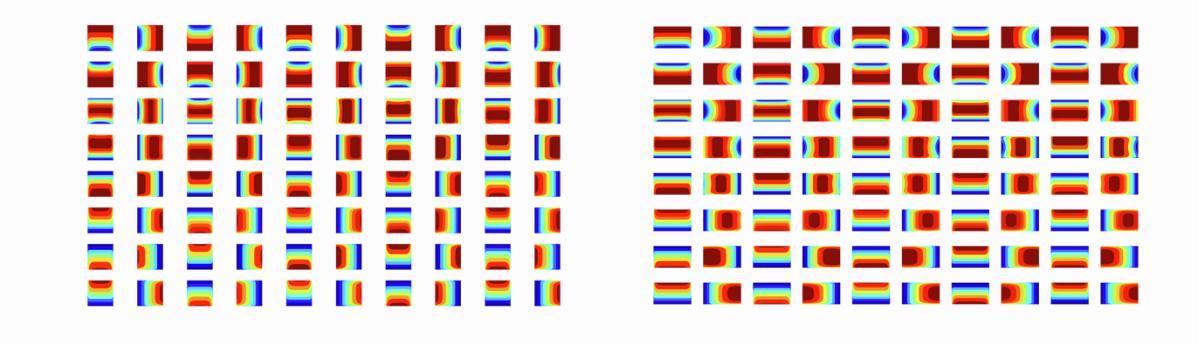

Figure S4 Rate maps of simulated BVCs. **Related to Figure 4.** Rate maps of simulated BVCs in the square (left) and rectangular (right) environment.