Supplemental Material

Fixations at test

Experiment 1. We compared the number of fixations at test using a 2 x 2 x 4 repeated-measures ANOVA, with factors of Test Item (correct, lure), Condition (object, scene), and Trial Type (AB, BC, AC, XY). We compared fixations between the two test items (correct vs. lure), which were always of the same category and did not include fixations to the cue item at the top of the screen (see below for analyses of cue item fixations). This ANOVA revealed significant main effects for all three factors, as well as significant 2-way interactions (all ps < 0.05), but no significant 3-way interaction, $F(3, 93) = 0.54$, $p = 0.65$ (see Figure S1). Given the significant interactions between Trial Type and Condition, $F(3, 93) = 101.77$, $p < 0.001$, $\eta^2_G = 0.10$, and between Trial Type and Test Item, $F(3, 93) = 6.25$, $p < 0.001$, $\eta^2_G = 0.01$, we conducted follow-up repeated-measures ANOVAs for each Trial Type comparing the effects of Test Item and Condition.

For AB test trials, in which cue items were objects and test items were objects or scenes, there was a significant main effect of Condition, $F(1, 31) = 41.43$, $p < 0.001$, $\eta^2_G = 0.11$, and of Test Item (correct vs. lure), $F(1, 31) = 30.11$, $p < 0.001$, $\eta^2_G = 0.13$, but no significant interaction, $F(1, 31) = 3.31$, $p = 0.079$. The main effect of Condition reflects significantly more fixations to test items in the scene condition, when both items are scenes (M = 2.83, SD = 0.78), than in the object condition (M = 2.38, SD = 0.63). The main effect of Test Item reflects significantly more fixations to correct items (M = 2.85, SD = 0.76) than to lure (incorrect) items (M = 2.35, SD = 0.65) in both conditions.

For BC test trials, in which the cue item varied but test items were objects in both conditions, there was a significant main effect of Condition, $F(1, 31) = 124.99$, $p < 0.001$, $\eta^2_G = 0.19$, and of Test Item (correct vs. lure), $F(1, 31) = 5.94$, $p = 0.021$, $\eta^2_G = 0.03$, but no significant

interaction, $F(1, 31) = 0.99$, $p = 0.33$. The main effect of Condition reflects significantly more fixations to test items in the object condition (M = 2.50, SD = 0.65), than in the scene condition (M = 1.90, SD = 0.64). In both conditions the test items were objects, but the cue (top) item differed, and when it was a scene the test objects received fewer fixations than when it was an object. The main effect of Test Item reflects significantly more fixations to correct items (M = 2.32, SD = 0.74) than to lures (M = 2.07, SD = 0.65) in both conditions.

For AC test trials, in which all items were objects in both conditions, there was a significant main effect of Condition, $F(1, 31) = 7.35$, $p = 0.011$, $\eta^2_G = 0.02$, and of Test Item (correct vs. lure), $F(1, 31) = 28.91$, $p < 0.001$, $\eta^2_G = 0.10$, but no significant interaction, $F(1, 31) = 0.65$, $p = 0.43$. The main effect of Condition reflects significantly more fixations to test items in the object condition (M = 2.69, SD = 0.65), than in the scene condition (M = 2.54, SD = 0.65), despite the fact that in both conditions all items on screen are objects, though this effect was small compared to other conditions. The main effect of Test Item reflects significantly more fixations to correct items (M = 2.81, SD = 0.66) than to lures (M = 2.41, SD = 0.59) in both conditions.

For XY test trials, in which the cue item varied but test items were objects in both conditions, there was a significant main effect of Condition, $F(1, 31) = 85.29$, $p < 0.001$, $\eta^2_G = 0.16$, and of Test Item (correct vs. lure), $F(1, 31) = 23.33$, $p < 0.001$, $\eta^2_G = 0.16$, but no significant interaction, $F(1, 31) = 0.06$, $p = 0.81$. The main effect of Condition reflects significantly more fixations to test items in the object condition (M = 2.46, SD = 0.78), than in the scene condition (M = 1.89, SD = 0.69). Like the BC condition, in both cases the test items are objects, but the cue item differs. The main effect of Test Item reflects significantly more

fixations to correct items (M = 2.47, SD = 0.78) than to lures (M = 1.88, SD = 0.69) in both conditions.

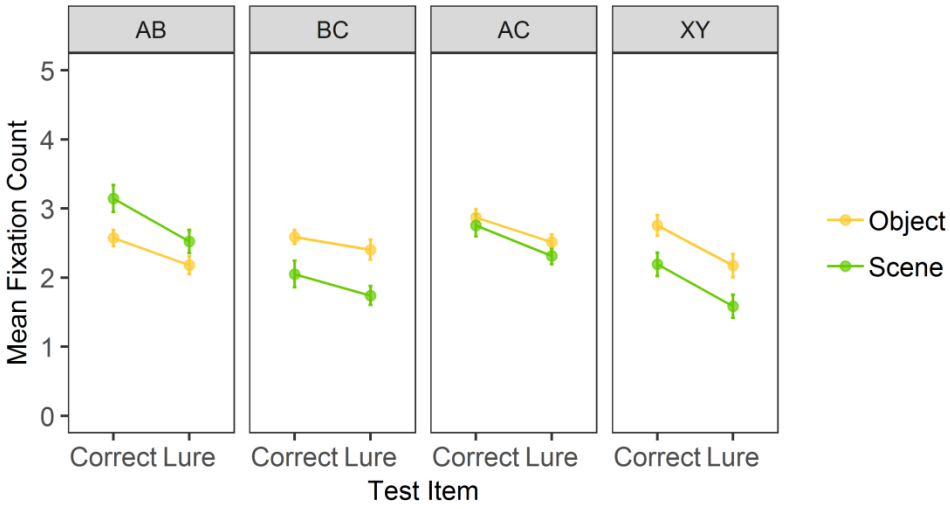

Figure S1. Experiment 1 – Fixations at test. Mean number of fixations made to correct and incorrect items at test (fixations to cue items are not shown), by condition and trial type for Experiment 1. In AB trials, test items were objects or scenes, depending on condition. In all other trials, all test items were objects, though the cue item varied in BC and XY trials. Error bars are within-subjects 95% confidence intervals of the means.

Although the primary analyses of interest were focused on the test items, which were always of the same stimulus type, we also separately compared fixations to the cue items across conditions with a 2 x 4 repeated-measures ANOVA, with factors of Condition (object, scene), and Trial Type (AB, BC, AC, XY). We found significant effects of Condition, $F(1,31) = 8.83$, $p = 0.006$, $\eta^2_G = 0.02$, Trial Type, $F(3, 93) = 38.30$, $p < 0.001$, $\eta^2_G = 0.08$, and a significant interaction, $F(3, 93) = 65.88$, $p < 0.001$, $\eta^2_G = 0.10$. Follow-up paired *t*-tests showed that more fixations were made to cue items when they were scenes compared to objects, in BC, $t(31) = 7.90$, $p < 0.001$, $M_{diff} = 1.05$, $95\%CI_{diff} = [0.78, 1.32]$, and XY conditions, $t(31) = 6.07$, $p < 0.001$, $M_{diff} = 0.91$, $95\%CI_{diff} = [0.60, 1.21]$. In contrast, in the AB condition, in which the cue items were both objects but test items varied, more fixations were made to the object cue when

the test items were objects compared to scenes, $t(31) = -7.02$, $p < 0.001$, $M_{diff} = -0.89$, $95\%CI_{diff} = [-0.63, -1.15]$. In the AC condition, when all items were objects in both conditions, fixations did not differ to the cue item across conditions, $t(31) = 0.91$, $p > 0.99$. Taken together, fixations to cue items mirrored the finding that more fixations are made to scenes, and that objects receive fewer fixations when scenes are simultaneously on screen.

Experiment 2. A 2 x 2 x 4 repeated-measures ANOVA, with factors of Test Item (correct, lure), Condition (face, scene), and Trial Type (AB, BC, AC, XY) revealed significant main effects for all three factors, as well as significant 2-way interactions (all *p*s < 0.05), but no significant 3-way interaction, $F(3, 93) = 0.83$, $p = 0.48$ (see Figure S2). Given the significant interactions between Trial Type and Condition, $F(3, 93) = 20.13$, $p < 0.001$, $\eta^2_G = 0.04$, and between Trial Type and Test Item, $F(3, 93) = 7.65$, $p < 0.001$, $\eta^2_G = 0.01$, we conducted follow-up repeated-measures ANOVAs for each Trial Type.

For AB test trials, in which cue items were objects and test items were scenes or faces, there was a significant main effect of Condition, $F(1, 31) = 35.18$, $p < 0.001$, $\eta^2_G = 0.14$, and of Test Item (correct vs. lure), $F(1, 31) = 32.43$, $p < 0.001$, $\eta^2_G = 0.19$, but no significant interaction, $F(1, 31) = 0.30$, $p = 0.59$. The main effect of Condition reflects significantly more fixations to test items in the face condition, when both items are faces (M = 3.91, SD = 1.25), than in the scene condition, when both items are scenes (M = 3.05, SD = 1.16). The main effect of Test Item reflects significantly more fixations to correct items (M = 3.99, SD = 1.32) than to lures (M = 2.96, SD = 0.98) in both conditions.

For BC test trials, in which the cue item was either a face or a scene, but test items were objects in both conditions, there was a significant main effect of Test Item (correct vs. lure), $F(1, 31) = 16.07$, $p < 0.001$, $\eta^2_G = 0.13$, but no significant main effect of Condition, $F(1, 31) = 0.68$, p

= 0.42, nor a significant interaction, $F(1, 31) = 2.67$, $p = 0.11$. The main effect of Test Item reflects significantly more fixations to correct items (M = 2.32, SD = 0.94) than to lures (M = 1.68, SD = 0.72) in both conditions.

For AC test trials, in which all items on the screen are objects, but are associated with either a face or a scene B item depending on Condition, there was a significant main effect of Test Item (correct vs. lure), $F(1, 31) = 23.17$, $p < 0.001$, $\eta^2_G = 0.12$, and a significant interaction between Test Item and Condition, $F(1, 31) = 5.69$, $p = 0.023$, $\eta^2_G = 0.006$, but no main effect of Condition, $F(1, 31) = 2.59$, $p = 0.12$. For both conditions, participants made significantly more fixations to the correct item, Scene condition: $t(31) = 4.56$, $p < 0.001$, $M_{diff} = 0.72$, $95\%CI_{diff} = [0.40, 1.05]$; Face condition: $t(31) = 4.41$, $p < 0.001$, $M_{diff} = 0.47$, $95\%CI_{diff} = [0.25, 0.68]$. Comparing test items across conditions revealed that participants made more fixations to lures in the face condition compared to the scene condition, $t(31) = 2.99$, $p = 0.022$, $M_{diff} = 0.23$, $95\%CI_{diff} = [0.074, 0.39]$, even though in both cases the lures were objects. There was no difference in fixations to the correct item (object) across conditions, $t(31) = 0.26$, $p > 0.99$.

For XY test trials, in which the cue item was either a face or scene but the test items were objects in both conditions, there was a significant main effect of Test Item (correct vs. lure), $F(1, 31) = 28.38$, $p < 0.001$, $\eta^2_G = 0.24$, but no significant main effect of Condition, $F(1, 31) = 1.18$, $p = 0.29$, nor a significant interaction, $F(1, 31) = 0.32$, $p = 0.58$. The main effect of Test Item reflects significantly more fixations to correct items (M = 2.44, SD = 0.86) than to lures (M = 1.59, SD = 0.66) in both conditions.

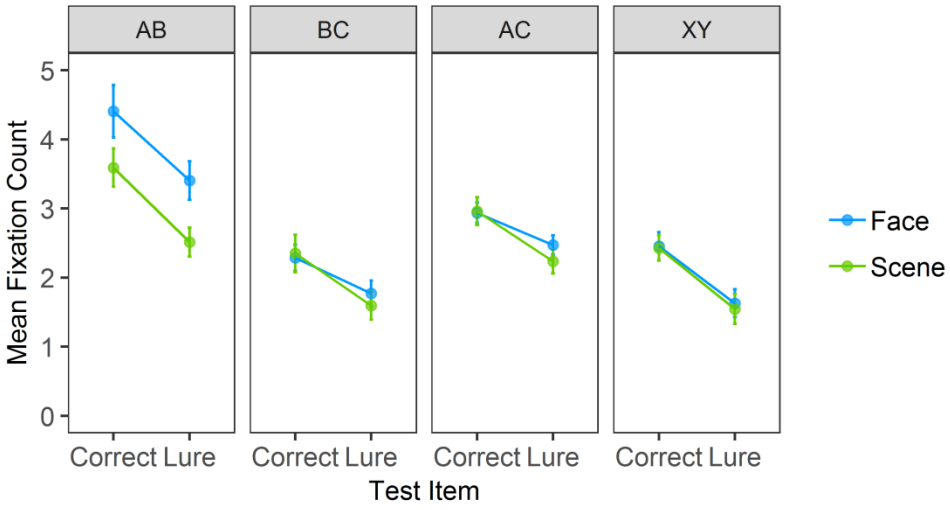

Figure S2. Experiment 2 – Fixations at test. Mean number of fixations made to correct and incorrect items at test (fixations to cue items are not shown), by condition and trial type for Experiment 2. In AB trials, test items were faces or scenes, depending on condition. In all other trials, all test items were objects, though the cue item varied in BC and XY trials. Error bars are within-subjects 95% confidence intervals of the means.

We also compared fixations to the cue items across conditions with a 2 x 4 repeated-measures ANOVA, with factors of Condition (face, scene), and Trial Type (AB, BC, AC, XY). We found significant effects of Condition, $F(1,31) = 16.20$, $p < 0.001$, $\eta^2_G = 0.02$, Trial Type, $F(3, 93) = 160.24$, $p < 0.001$, $\eta^2_G = 0.30$, and a significant interaction, $F(3, 93) = 13.70$, $p < 0.001$, $\eta^2_G = 0.02$. Follow-up paired *t*-tests showed that more fixations were made to cue items when they were faces compared to scenes, in BC, $t(31) = 5.24$, $p < 0.001$, $M_{diff} = 0.91$, $95\%CI_{diff} = [0.55, 1.26]$, and XY conditions, $t(31) = 4.36$, $p < 0.001$, $M_{diff} = 0.75$, $95\%CI_{diff} = [0.40, 1.10]$. In contrast, when the cue items were objects, fixations did not differ, in both the AB, $t(31) = 0.18$, $p > 0.99$, and AC conditions, $t(31) = 0.03$, $p > 0.99$. Together, these results demonstrate that more fixations were made to faces compared to scenes, in both the cue and test item positions.