

## Supplemental Material

Distributed and Overlapping Representations of Faces and Objects in Ventral Temporal Cortex  
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### 1. Reanalysis of Ishai et al. (1999): Does the pattern of response to line drawings indicate the category of photographs being viewed and vice versa?

It is possible that low-level features that are shared by grayscale photographs of exemplars from a single category, such as mean luminance, mean contrast, spatial frequencies, straight vs curved edges, contour length, etc., might underlie the distinctiveness of patterns of response for each category rather than high-level features that are more definitive of a category and invariant across variations in these low-level features. We addressed this issue by reanalyzing an older data set (Ishai et al. Proc Natl Acad Sci, USA, 1999) in which we had a smaller number of categories (faces, houses, and chairs) but had two markedly different types of depictions of each category, namely photographs and line drawings. We reanalyzed these data to determine whether the pattern of response to a category of line drawings could be identified based on its similarity to the patterns of response to photographs of the same and different categories, and, conversely, can the pattern of response to photographs be identified based on similarities to responses to line drawings. Because the issue raised concerns mainly the nature of the information carried by nonmaximal responses, we analyzed the ability to discriminate patterns of response to two categories, e.g. faces and houses, in the region in which neither elicited maximal responses, namely the region that responded maximally to chairs. The results were exactly as predicted. The complete results are presented below, and they are summarized in the paper. When patterns of response for all of object-responsive ventral temporal cortex were considered, there were no errors identifying the category being viewed. When only the patterns of nonmaximal responses were considered, there were no errors discriminating faces from houses or faces from chairs and only 12% errors discriminating houses from chairs. Moreover, the magnitudes of within-category correlations between stimulus types (photos and drawings) were equivalent to the magnitudes of within-category correlations within stimulus type for the current experiment, suggesting that the patterns of response to faces and objects in ventral temporal cortex are minimally affected by the low-level feature differences between photographs and line drawings. This stimulus transformation does not address all possible low-level features that might be confounded with category differences, but does show invariance across marked changes in luminance, contrast, and spatial frequencies.

*Within and between category correlations (mean  $\pm$  SE) across stimulus types (photographs vs line drawings) in all of ventral temporal cortex*

<u>Drawings</u>	<u>Photographs</u>		
	<u>Faces</u>	<u>Houses</u>	<u>Chairs</u>
Faces	0.83 $\pm$ 0.02	-0.65 $\pm$ 0.06	-0.39 $\pm$ 0.07
Houses	-0.61 $\pm$ 0.05	0.78 $\pm$ 0.04	-0.09 $\pm$ 0.07
Chairs	-0.33 $\pm$ 0.07	-0.11 $\pm$ 0.09	0.64 $\pm$ 0.08

Accuracy of identifying category being viewed: 100%

*Within and between category correlations (mean  $\pm$  SE) across stimulus types (photographs vs line drawings) in region that responded maximally to the category that is not in the comparison*

In the region that responded maximally to houses:

<u>Drawings</u>	<u>Photographs</u>	
	<u>faces</u>	<u>chairs</u>
faces	0.74 $\pm$ 0.03	-0.17 $\pm$ 0.07
chairs	-0.26 $\pm$ 0.08	0.49 $\pm$ 0.08

Accuracy of identifying category being viewed: 100%

In the region that responded maximally to chairs:

<u>Drawings</u>	<u>Photographs</u>	
	<u>faces</u>	<u>houses</u>
faces	0.70 $\pm$ 0.05	-0.45 $\pm$ 0.09
houses	-0.52 $\pm$ 0.05	0.64 $\pm$ 0.07

Accuracy of identifying category being viewed: 100%

In the region that responded maximally to faces:

<u>Drawings</u>	<u>Photographs</u>	
	<u>houses</u>	<u>chairs</u>
houses	0.54 $\pm$ 0.08	0.04 $\pm$ 0.12
chairs	0.05 $\pm$ 0.13	0.58 $\pm$ 0.08

Accuracy of identifying category being viewed: 88%

## 2. Detailed results of other analyses

### Region: all object-selective ventral temporal cortex

#### Mean correlations ( $\pm$ SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.74 $\pm$ 0.02	-0.41 $\pm$ 0.08	0.31 $\pm$ 0.04	-0.12 $\pm$ 0.06	-0.03 $\pm$ 0.1	-0.25 $\pm$ 0.06	-0.38 $\pm$ 0.1	-0.19 $\pm$ 0.05
Houses	-0.39 $\pm$ 0.05	0.81 $\pm$ 0.05	-0.28 $\pm$ 0.06	-0.24 $\pm$ 0.04	-0.27 $\pm$ 0.11	-0.21 $\pm$ 0.07	0 $\pm$ 0.09	0.07 $\pm$ 0.1
Cats	0.4 $\pm$ 0.06	-0.42 $\pm$ 0.1	0.47 $\pm$ 0.07	-0.11 $\pm$ 0.06	-0.05 $\pm$ 0.08	-0.03 $\pm$ 0.05	-0.15 $\pm$ 0.06	-0.32 $\pm$ 0.08
Bottles	-0.16 $\pm$ 0.11	-0.33 $\pm$ 0.08	-0.26 $\pm$ 0.05	0.28 $\pm$ 0.1	-0.05 $\pm$ 0.07	0.16 $\pm$ 0.03	-0.14 $\pm$ 0.07	-0.13 $\pm$ 0.06
Scissors	-0.07 $\pm$ 0.08	-0.39 $\pm$ 0.07	0.03 $\pm$ 0.08	0.11 $\pm$ 0.06	0.31 $\pm$ 0.1	0.18 $\pm$ 0.07	-0.09 $\pm$ 0.1	-0.29 $\pm$ 0.05
Shoes	-0.16 $\pm$ 0.06	-0.24 $\pm$ 0.06	-0.22 $\pm$ 0.05	0.24 $\pm$ 0.08	-0.04 $\pm$ 0.13	0.43 $\pm$ 0.1	-0.19 $\pm$ 0.11	-0.28 $\pm$ 0.06
Chairs	-0.47 $\pm$ 0.09	0.11 $\pm$ 0.05	-0.18 $\pm$ 0.08	-0.26 $\pm$ 0.08	0.11 $\pm$ 0.14	-0.13 $\pm$ 0.1	0.4 $\pm$ 0.06	0.14 $\pm$ 0.07
Scr	-0.33 $\pm$ 0.08	0.1 $\pm$ 0.09	-0.45 $\pm$ 0.05	0.02 $\pm$ 0.1	-0.37 $\pm$ 0.05	-0.13 $\pm$ 0.07	-0.08 $\pm$ 0.07	0.6 $\pm$ 0.05

Mean within-category  $r = .50$ , mean between-category  $r = -.13$ .

#### Percent correct identifications of category being viewed

##### Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	98 $\pm$ 1	90 $\pm$ 6	92 $\pm$ 6	92 $\pm$ 7	96 $\pm$ 2	100 $\pm$ 0

##### Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	83 $\pm$ 11	67 $\pm$ 21	67 $\pm$ 17	75 $\pm$ 17	83 $\pm$ 11	100 $\pm$ 0

Region: object-selective ventral temporal cortex minus regions that respond maximally to categories being compared

Mean correlations ( $\pm$  SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.61 $\pm$ 0.03	-0.21 $\pm$ 0.05	0.24 $\pm$ 0.07	-0.11 $\pm$ 0.1	0.01 $\pm$ 0.06	-0.21 $\pm$ 0.06	-0.44 $\pm$ 0.07	-0.26 $\pm$ 0.09
Houses	-0.1 $\pm$ 0.06	0.49 $\pm$ 0.06	-0.13 $\pm$ 0.09	-0.3 $\pm$ 0.05	-0.26 $\pm$ 0.05	-0.23 $\pm$ 0.05	-0.02 $\pm$ 0.08	0.05 $\pm$ 0.1
Cats	0.19 $\pm$ 0.06	-0.07 $\pm$ 0.03	0.35 $\pm$ 0.07	-0.24 $\pm$ 0.05	-0.04 $\pm$ 0.08	-0.23 $\pm$ 0.06	-0.23 $\pm$ 0.06	-0.37 $\pm$ 0.06
Bottles	-0.09 $\pm$ 0.06	-0.23 $\pm$ 0.03	-0.13 $\pm$ 0.07	0.25 $\pm$ 0.1	-0.03 $\pm$ 0.06	0.14 $\pm$ 0.08	-0.21 $\pm$ 0.07	0.04 $\pm$ 0.1
Scissors	-0.01 $\pm$ 0.08	-0.1 $\pm$ 0.06	-0.05 $\pm$ 0.1	-0.17 $\pm$ 0.05	0.14 $\pm$ 0.08	-0.16 $\pm$ 0.1	0.01 $\pm$ 0.13	-0.34 $\pm$ 0.05
Shoes	-0.27 $\pm$ 0.05	-0.18 $\pm$ 0.08	-0.04 $\pm$ 0.06	0.06 $\pm$ 0.01	0.04 $\pm$ 0.08	0.36 $\pm$ 0.1	-0.08 $\pm$ 0.08	-0.16 $\pm$ 0.07
Chairs	-0.38 $\pm$ 0.09	-0.16 $\pm$ 0.09	-0.26 $\pm$ 0.07	-0.16 $\pm$ 0.05	-0.13 $\pm$ 0.08	-0.15 $\pm$ 0.08	0.35 $\pm$ 0.05	-0.04 $\pm$ 0
Scr	-0.14 $\pm$ 0.04	0.04 $\pm$ 0.08	-0.23 $\pm$ 0.09	-0.13 $\pm$ 0.06	-0.27 $\pm$ 0.03	-0.28 $\pm$ 0.06	0.15 $\pm$ 0.06	0.59 $\pm$ 0.05

Mean within-category  $r = .39$ , mean between-category  $r = -.13$ .

Percent correct identifications of category being viewed

Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	95 $\pm$ 2	89 $\pm$ 6	85 $\pm$ 9	90 $\pm$ 8	99 $\pm$ 1	100 $\pm$ 0

Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	67 $\pm$ 17	58 $\pm$ 20	50 $\pm$ 18	75 $\pm$ 17	92 $\pm$ 8	100 $\pm$ 0

Region: object-selective ventral temporal cortex that responds maximally to facesMean correlations ( $\pm$  SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.46 $\pm$ 0.09	-0.18 $\pm$ 0.13	0.21 $\pm$ 0.09	-0.21 $\pm$ 0.09	-0.16 $\pm$ 0.1	-0.09 $\pm$ 0.15	-0.21 $\pm$ 0.15	-0.16 $\pm$ 0.12
Houses	-0.16 $\pm$ 0.07	0.45 $\pm$ 0.09	-0.05 $\pm$ 0.12	-0.09 $\pm$ 0.1	0.07 $\pm$ 0.13	-0.28 $\pm$ 0.09	-0.24 $\pm$ 0.09	-0.24 $\pm$ 0.09
Cats	0.23 $\pm$ 0.11	-0.14 $\pm$ 0.12	0.21 $\pm$ 0.14	-0.19 $\pm$ 0.12	-0.36 $\pm$ 0.08	-0.08 $\pm$ 0.11	-0.08 $\pm$ 0.08	-0.23 $\pm$ 0.14
Bottles	-0.34 $\pm$ 0.08	-0.31 $\pm$ 0.11	-0.25 $\pm$ 0.05	0.1 $\pm$ 0.17	-0.2 $\pm$ 0.08	0.04 $\pm$ 0.08	0.03 $\pm$ 0.07	-0.02 $\pm$ 0.1
Scissors	-0.14 $\pm$ 0.08	-0.05 $\pm$ 0.09	-0.16 $\pm$ 0.14	-0.1 $\pm$ 0.09	0.08 $\pm$ 0.11	-0.05 $\pm$ 0.08	-0.05 $\pm$ 0.08	-0.03 $\pm$ 0.05
Shoes	-0.16 $\pm$ 0.09	-0.13 $\pm$ 0.05	-0.25 $\pm$ 0.12	0.2 $\pm$ 0.08	0 $\pm$ 0.16	0.09 $\pm$ 0.11	-0.07 $\pm$ 0.1	-0.11 $\pm$ 0.09
Chairs	-0.4 $\pm$ 0.12	-0.02 $\pm$ 0.12	-0.17 $\pm$ 0.08	-0.34 $\pm$ 0.04	-0.18 $\pm$ 0.15	-0.16 $\pm$ 0.09	0.15 $\pm$ 0.08	0.23 $\pm$ 0.04
Scr	-0.4 $\pm$ 0.13	0.1 $\pm$ 0.13	-0.44 $\pm$ 0.1	0.06 $\pm$ 0.12	-0.17 $\pm$ 0.06	-0.13 $\pm$ 0.12	-0.06 $\pm$ 0.08	0.55 $\pm$ 0.08

Mean within-category  $r = .26$ , mean between-category  $r = -.12$ .

## Percent correct identifications of category being viewed

## Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
94 $\pm$ 6	99 $\pm$ 1	76 $\pm$ 13	81 $\pm$ 14	77 $\pm$ 9	70 $\pm$ 16	77 $\pm$ 11	92 $\pm$ 7

## Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
67 $\pm$ 21	83 $\pm$ 17	50 $\pm$ 22	50 $\pm$ 18	17 $\pm$ 11	33 $\pm$ 21	33 $\pm$ 21	58 $\pm$ 20

Region: object-selective ventral temporal cortex that responds maximally to housesMean correlations ( $\pm$  SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.67 $\pm$ 0.03	-0.4 $\pm$ 0.09	0.28 $\pm$ 0.08	-0.08 $\pm$ 0.08	-0.02 $\pm$ 0.08	-0.27 $\pm$ 0.08	-0.46 $\pm$ 0.08	-0.12 $\pm$ 0.07
Houses	-0.34 $\pm$ 0.05	0.73 $\pm$ 0.07	-0.2 $\pm$ 0.06	-0.16 $\pm$ 0.08	-0.18 $\pm$ 0.12	-0.19 $\pm$ 0.07	0.05 $\pm$ 0.1	-0.13 $\pm$ 0.09
Cats	0.25 $\pm$ 0.08	-0.42 $\pm$ 0.11	0.26 $\pm$ 0.09	-0.09 $\pm$ 0.11	-0.06 $\pm$ 0.08	0.04 $\pm$ 0.09	-0.27 $\pm$ 0.09	-0.16 $\pm$ 0.1
Bottles	-0.12 $\pm$ 0.09	-0.34 $\pm$ 0.05	-0.23 $\pm$ 0.08	0.22 $\pm$ 0.11	-0.18 $\pm$ 0.04	0.03 $\pm$ 0.05	-0.14 $\pm$ 0.06	-0.14 $\pm$ 0.09
Scissors	0 $\pm$ 0.07	-0.32 $\pm$ 0.05	0.13 $\pm$ 0.08	-0.1 $\pm$ 0.07	0.18 $\pm$ 0.08	0.07 $\pm$ 0.07	-0.15 $\pm$ 0.08	-0.27 $\pm$ 0.04
Shoes	-0.22 $\pm$ 0.09	-0.24 $\pm$ 0.09	-0.24 $\pm$ 0.03	0.1 $\pm$ 0.09	-0.09 $\pm$ 0.12	0.39 $\pm$ 0.09	-0.03 $\pm$ 0.11	-0.35 $\pm$ 0.04
Chairs	-0.53 $\pm$ 0.06	0.09 $\pm$ 0.07	-0.31 $\pm$ 0.05	-0.2 $\pm$ 0.09	0.08 $\pm$ 0.07	-0.03 $\pm$ 0.11	0.34 $\pm$ 0.05	0.05 $\pm$ 0.08
Scr	-0.17 $\pm$ 0.12	-0.1 $\pm$ 0.09	-0.29 $\pm$ 0.1	0.03 $\pm$ 0.1	-0.38 $\pm$ 0.04	-0.17 $\pm$ 0.05	-0.1 $\pm$ 0.07	0.49 $\pm$ 0.03

Mean within-category  $r = .41$ , mean between-category  $r = -.14$ .

## Percent correct identifications of category being viewed

## Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	88 $\pm$ 5	85 $\pm$ 10	81 $\pm$ 6	96 $\pm$ 2	94 $\pm$ 3	100 $\pm$ 0

## Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
83 $\pm$ 17	83 $\pm$ 17	33 $\pm$ 17	50 $\pm$ 18	33 $\pm$ 21	58 $\pm$ 20	58 $\pm$ 20	83 $\pm$ 17

Region: object-selective ventral temporal cortex that responds maximally to catsMean correlations ( $\pm$  SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.45 $\pm$ 0.09	-0.02 $\pm$ 0.08	0.09 $\pm$ 0.05	-0.1 $\pm$ 0.11	-0.11 $\pm$ 0.07	-0.19 $\pm$ 0.07	-0.39 $\pm$ 0.09	-0.24 $\pm$ 0.09
Houses	-0.22 $\pm$ 0.08	0.43 $\pm$ 0.11	-0.08 $\pm$ 0.12	-0.14 $\pm$ 0.1	-0.21 $\pm$ 0.12	-0.07 $\pm$ 0.1	-0.41 $\pm$ 0.1	-0.17 $\pm$ 0.06
Cats	0.27 $\pm$ 0.09	-0.09 $\pm$ 0.13	0.29 $\pm$ 0.08	-0.13 $\pm$ 0.1	0.11 $\pm$ 0.1	0.08 $\pm$ 0.1	0.13 $\pm$ 0.11	-0.36 $\pm$ 0.05
Bottles	-0.23 $\pm$ 0.1	-0.28 $\pm$ 0.1	-0.14 $\pm$ 0.12	0.02 $\pm$ 0.13	-0.05 $\pm$ 0.13	-0.01 $\pm$ 0.12	-0.21 $\pm$ 0.12	-0.05 $\pm$ 0.09
Scissors	-0.19 $\pm$ 0.13	-0.27 $\pm$ 0.05	0.14 $\pm$ 0.08	-0.12 $\pm$ 0.1	0.02 $\pm$ 0.08	-0.04 $\pm$ 0.1	-0.04 $\pm$ 0.13	-0.15 $\pm$ 0.07
Shoes	-0.14 $\pm$ 0.1	-0.06 $\pm$ 0.08	-0.2 $\pm$ 0.14	0.16 $\pm$ 0.06	-0.1 $\pm$ 0.09	0.15 $\pm$ 0.07	-0.27 $\pm$ 0.08	-0.22 $\pm$ 0.08
Chairs	-0.34 $\pm$ 0.09	-0.12 $\pm$ 0.08	-0.05 $\pm$ 0.12	-0.3 $\pm$ 0.06	0.01 $\pm$ 0.14	-0.13 $\pm$ 0.06	0.32 $\pm$ 0.12	0.06 $\pm$ 0.13
Scr	-0.38 $\pm$ 0.07	-0.11 $\pm$ 0.11	-0.52 $\pm$ 0.08	0.03 $\pm$ 0.16	-0.29 $\pm$ 0.09	-0.26 $\pm$ 0.08	-0.17 $\pm$ 0.12	0.66 $\pm$ 0.05

Mean within-category  $r = .29$ , mean between-category  $r = -.13$ .

## Percent correct identifications of category being viewed

## Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
96 $\pm$ 4	96 $\pm$ 2	82 $\pm$ 8	65 $\pm$ 11	69 $\pm$ 5	76 $\pm$ 9	95 $\pm$ 4	100 $\pm$ 0

## Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
67 $\pm$ 21	75 $\pm$ 17	42 $\pm$ 20	17 $\pm$ 17	0 $\pm$ 0	25 $\pm$ 17	58 $\pm$ 20	83 $\pm$ 17

Region: object-selective ventral temporal cortex that responds maximally to small, manmade objectsMean correlations ( $\pm$  SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
Faces	0.47 $\pm$ 0.06	-0.15 $\pm$ 0.04	0.08 $\pm$ 0.06	-0.24 $\pm$ 0.06	-0.06 $\pm$ 0.11	-0.27 $\pm$ 0.06	-0.22 $\pm$ 0.14	0.03 $\pm$ 0.06
Houses	-0.15 $\pm$ 0.05	0.47 $\pm$ 0.04	-0.11 $\pm$ 0.04	-0.22 $\pm$ 0.04	-0.15 $\pm$ 0.07	-0.1 $\pm$ 0.06	-0.02 $\pm$ 0.07	-0.07 $\pm$ 0.07
Cats	0.16 $\pm$ 0.04	-0.17 $\pm$ 0.08	0.3 $\pm$ 0.08	-0.1 $\pm$ 0.09	-0.14 $\pm$ 0.06	-0.13 $\pm$ 0.06	-0.03 $\pm$ 0.08	-0.21 $\pm$ 0.07
Bottles	-0.17 $\pm$ 0.12	-0.28 $\pm$ 0.07	-0.27 $\pm$ 0.07	0.23 $\pm$ 0.12	-0.13 $\pm$ 0.12	0.11 $\pm$ 0.07	-0.17 $\pm$ 0.12	-0.17 $\pm$ 0.08
Scissors	-0.17 $\pm$ 0.05	-0.26 $\pm$ 0.07	-0.07 $\pm$ 0.11	0.13 $\pm$ 0.1	0.37 $\pm$ 0.15	0.02 $\pm$ 0.14	-0.12 $\pm$ 0.12	-0.37 $\pm$ 0.06
Shoes	-0.15 $\pm$ 0.08	-0.1 $\pm$ 0.08	-0.16 $\pm$ 0.11	0.22 $\pm$ 0.12	-0.2 $\pm$ 0.14	0.43 $\pm$ 0.13	-0.44 $\pm$ 0.11	-0.31 $\pm$ 0.07
Chairs	-0.39 $\pm$ 0.14	0.05 $\pm$ 0.1	-0.01 $\pm$ 0.12	-0.39 $\pm$ 0.1	0.12 $\pm$ 0.18	-0.31 $\pm$ 0.15	0.4 $\pm$ 0.13	0.1 $\pm$ 0.07
Scr	-0.18 $\pm$ 0.07	-0.02 $\pm$ 0.06	-0.36 $\pm$ 0.05	-0.09 $\pm$ 0.15	-0.47 $\pm$ 0.06	-0.09 $\pm$ 0.11	-0.08 $\pm$ 0.14	0.54 $\pm$ 0.1

Mean within-category  $r = .40$ , mean between-category  $r = -.13$ .

## Percent correct identifications of category being viewed

## Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	95 $\pm$ 3	83 $\pm$ 7	92 $\pm$ 8	94 $\pm$ 6	90 $\pm$ 6	96 $\pm$ 4

## Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
83 $\pm$ 17	83 $\pm$ 17	67 $\pm$ 21	25 $\pm$ 17	67 $\pm$ 21	67 $\pm$ 21	50 $\pm$ 18	67 $\pm$ 21



Region: object-selective ventral temporal cortex minus regions that respond maximally to categories being compared plus adjacent voxels in x, y, and z directions (mean region volume = 9.2 ml)

It is possible that the voxels that are not excluded as maximally responsive may still be influenced by the maximally-responsive regions because of spatial blurring of the response profile. We analyzed our data with no spatial smoothing, but some residual smoothness and partial volume effects could influence our results. Accordingly, we performed an additional analysis in which we excluded all maximally-responsive voxels for the categories being compared and all adjacent voxels. The effect of spatial smoothness would be evident in these adjacent voxels. On average, this analysis excluded 58% of voxels. Nonetheless, the category being viewed could still be identified with 92% accuracy. Our results do not appear attributable to spatial smoothness and partial volume artifacts.

#### Mean correlations ( $\pm$ SE)

	Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
faces	0.57 $\pm$ 0.04	-0.11 $\pm$ 0.07	0.24 $\pm$ 0.08	-0.05 $\pm$ 0.11	-0.03 $\pm$ 0.08	-0.24 $\pm$ 0.08	-0.39 $\pm$ 0.09	-0.17 $\pm$ 0.1
houses	0.11 $\pm$ 0.07	0.45 $\pm$ 0.07	-0.16 $\pm$ 0.09	-0.26 $\pm$ 0.08	-0.18 $\pm$ 0.06	-0.18 $\pm$ 0.06	-0.03 $\pm$ 0.08	0.05 $\pm$ 0.12
cats	0.18 $\pm$ 0.07	0.02 $\pm$ 0.03	0.26 $\pm$ 0.07	-0.17 $\pm$ 0.08	-0.05 $\pm$ 0.1	-0.32 $\pm$ 0.08	-0.16 $\pm$ 0.05	-0.27 $\pm$ 0.05
bottles	-0.01 $\pm$ 0.06	-0.22 $\pm$ 0.06	-0.08 $\pm$ 0.1	0.21 $\pm$ 0.09	-0.06 $\pm$ 0.08	0.11 $\pm$ 0.1	-0.18 $\pm$ 0.07	0.09 $\pm$ 0.09
scissors	-0.03 $\pm$ 0.1	-0.06 $\pm$ 0.06	-0.03 $\pm$ 0.09	-0.21 $\pm$ 0.07	0.06 $\pm$ 0.09	-0.22 $\pm$ 0.11	0.02 $\pm$ 0.12	-0.35 $\pm$ 0.05
shoes	-0.3 $\pm$ 0.05	-0.25 $\pm$ 0.04	-0.04 $\pm$ 0.07	0.01 $\pm$ 0.03	0.05 $\pm$ 0.1	0.32 $\pm$ 0.1	-0.08 $\pm$ 0.11	-0.13 $\pm$ 0.08
chairs	-0.36 $\pm$ 0.1	-0.2 $\pm$ 0.1	-0.27 $\pm$ 0.09	-0.18 $\pm$ 0.06	-0.13 $\pm$ 0.07	-0.1 $\pm$ 0.09	0.3 $\pm$ 0.05	0.01 $\pm$ 0
controls	-0.02 $\pm$ 0.04	0.1 $\pm$ 0.08	-0.14 $\pm$ 0.1	-0.11 $\pm$ 0.06	-0.2 $\pm$ 0.05	-0.22 $\pm$ 0.05	0.2 $\pm$ 0.05	0.57 $\pm$ 0.05

Mean within-category  $r = .34$ , mean between-category  $r = -.10$ .

#### Percent correct identifications of category being viewed

##### Pairwise comparisons (chance = 50%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	90 $\pm$ 4	82 $\pm$ 8	76 $\pm$ 9	90 $\pm$ 8	94 $\pm$ 3	100 $\pm$ 0

##### Correct against all other categories (chance = 12.5%)

Faces	Houses	Cats	Bottles	Scissors	Shoes	Chairs	Scrambled
100 $\pm$ 0	100 $\pm$ 0	50 $\pm$ 18	42 $\pm$ 20	25 $\pm$ 17	75 $\pm$ 17	67 $\pm$ 17	100 $\pm$ 0