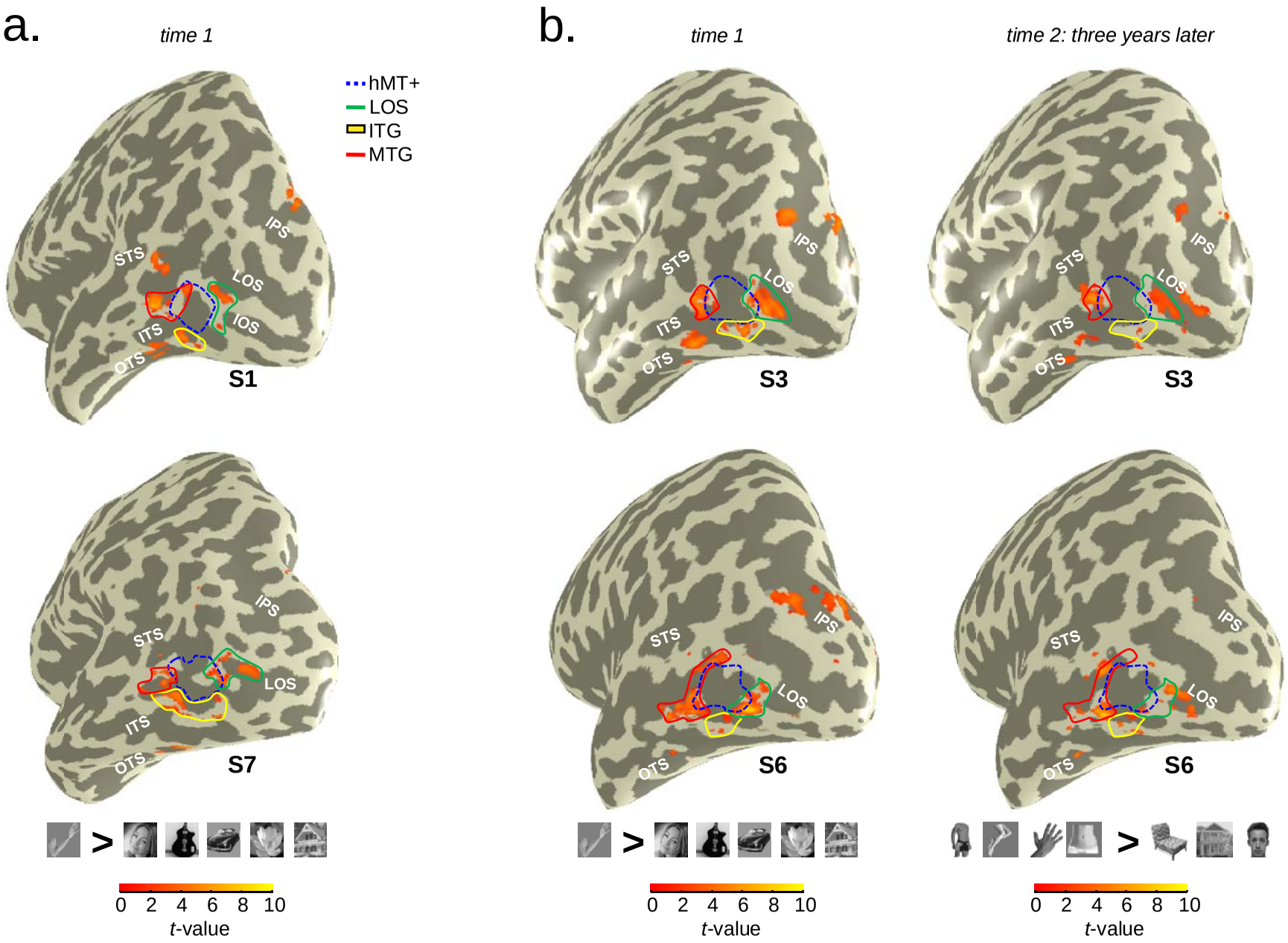
Supplemental Table 1. Summary of stimuli and statistical contrasts used in 20 recent studies examining the EBA.

EBA localized with headless bodies

Research group	Stimuli	Statistical Contrast
Peelen and Downing, 2005a, *Hum Brain Mapp*	bodies, faces, tools, scenes	bodies > faces, tools, scenes
Peelen and Downing, 2005b, *J Neurophysiol*	bodies, faces, tools, scenes	bodies > tools
Dowing et al., 2006, *Cereb Cortex*	bodies, faces, scenes, tools, mammals, fish, fruits and vegetables, reptiles, spiders, rocks and crystals, musical instruments, cars, insects, microbes, birds, weapons, flowers, prepared food, clothes, chairs	bodies > average of 19 other categories
Peelen et al., 2006, *Neuron*	bodies, faces, scenes, tools	bodies > tools
Downing et al., 2007, *J Neurosci*	bodies, chairs	bodies > chairs
Taylor et al., 2007, *J Neurophysiol*	bodies, body parts (hands, arms, torsos), chairs, object parts	bodies > chairs
Schwarzlose et al., 2008, *J Neurosci*	bodies, faces, objects, scenes, scrambled objects	bodies > objects
Peelen et al., 2009, *Developmental Science*	bodies, faces, tools, scenes	bodies > tools
Pitcher et al., 2009, *Curr Biol*	bodies, faces, household objects, scrambled objects	bodies > objects
Kret et al., 2010, *NeuroImage*	bodies, faces, houses, tools	bodies > houses
Jastorff et al., 2010, *Cereb Cortex*	bodies, chairs	bodies > chairs
Taylor et al., 2010, *J Neurophysiol*	bodies, chairs	bodies > chairs

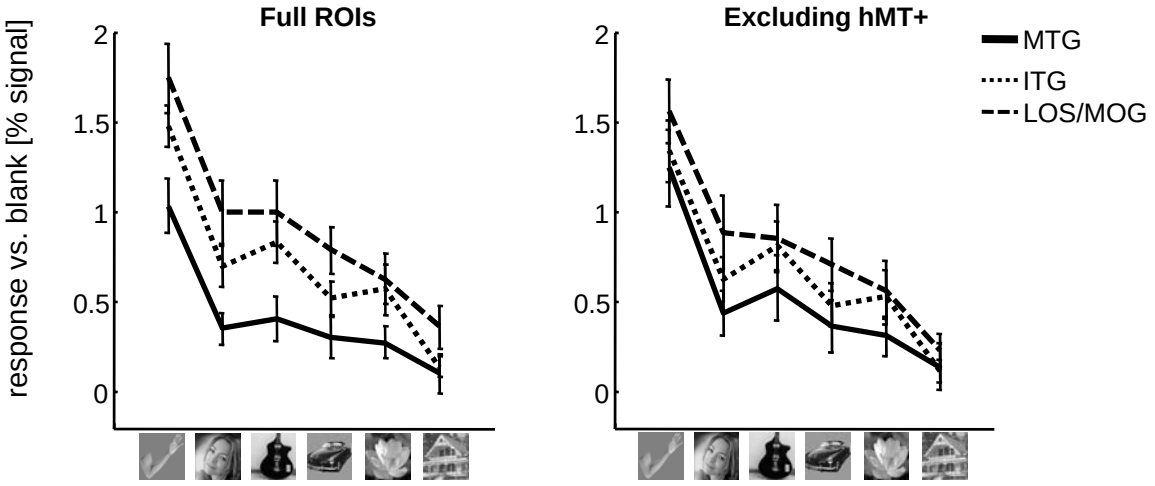
EBA localized with body parts or body parts and headless bodies

Research group	Stimuli	Statistical Contrast
Downing et al., 2001 (original paper), *Science*	bodies, body parts (arms, legs, hands), inanimate objects, object parts	bodies + body parts > objects + object parts
Astafiev et al., 2004, *Nat Neurosci*	body parts, object parts	body parts > object parts
Spiridon et al., 2006, *Hum Brain Mapp*	body parts (leg, foot, arm), objects (man made or food), faces, scenes, scrambled objects	body parts > objects
Downing et al., 2007, *J Neurosci*	body parts (arms, legs, hands), object parts	body parts > object parts
Taylor et al., 2007, *J Neurophysiol*	bodies, body parts (hands, arms, torsos), chairs, object parts	body parts > object parts
Pinsk et al., 2009, *J Neurophysiol*	faces, body parts (arms, hands, legs, feet), foods, scenes, man-made objects	body parts > objects
Bracci et al., 2010, *J Neurophysiol*	hands, whole bodies, body parts (arms without hands, legs without feet, shoulders), tools, chairs	bodies + body parts > chairs; hands > whole bodies + body parts + chairs
Chan et al., 2010, *Nat Neurosci*	faces, body parts, objects	body parts > objects
Cziraki et al., 2010, *J Neurophysiol*	faces, hands, scrambled	hands > faces
Op de Beeck et al., 2010, *NeuroImage*	child faces, elderly faces, hands, torsos, buildings, skyscrapers	hands + torsos > child faces + elderly faces +buildings + skyscrapers
Orlov et al., 2010, *Neuron*	wholes bodies (plus head), limbs, trunks, lower faces (and neck), objects	wholes bodies (plus head) + limbs + trunks + lower faces (and neck) > objects

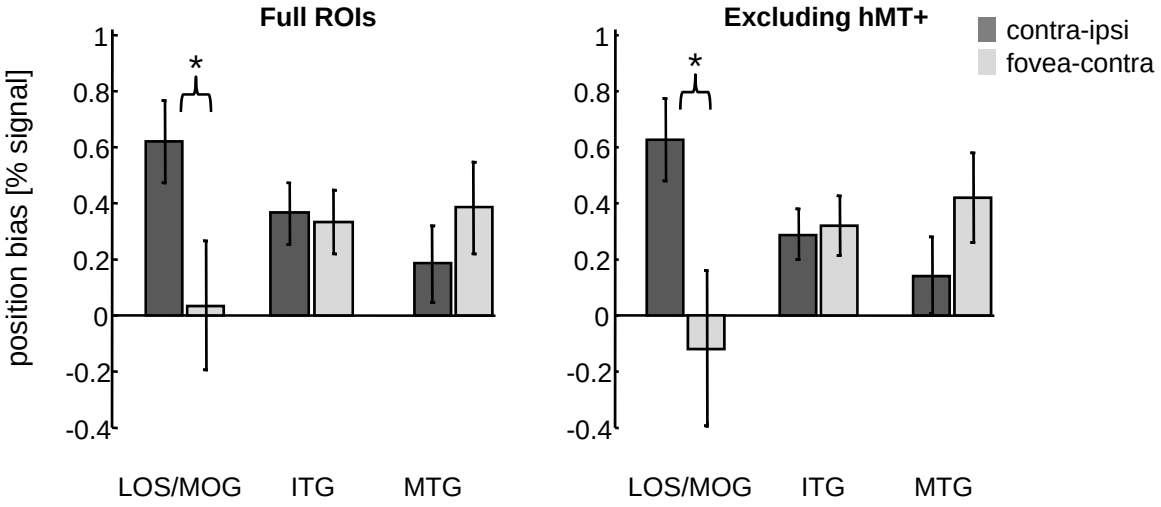


Supplemental Figure 1

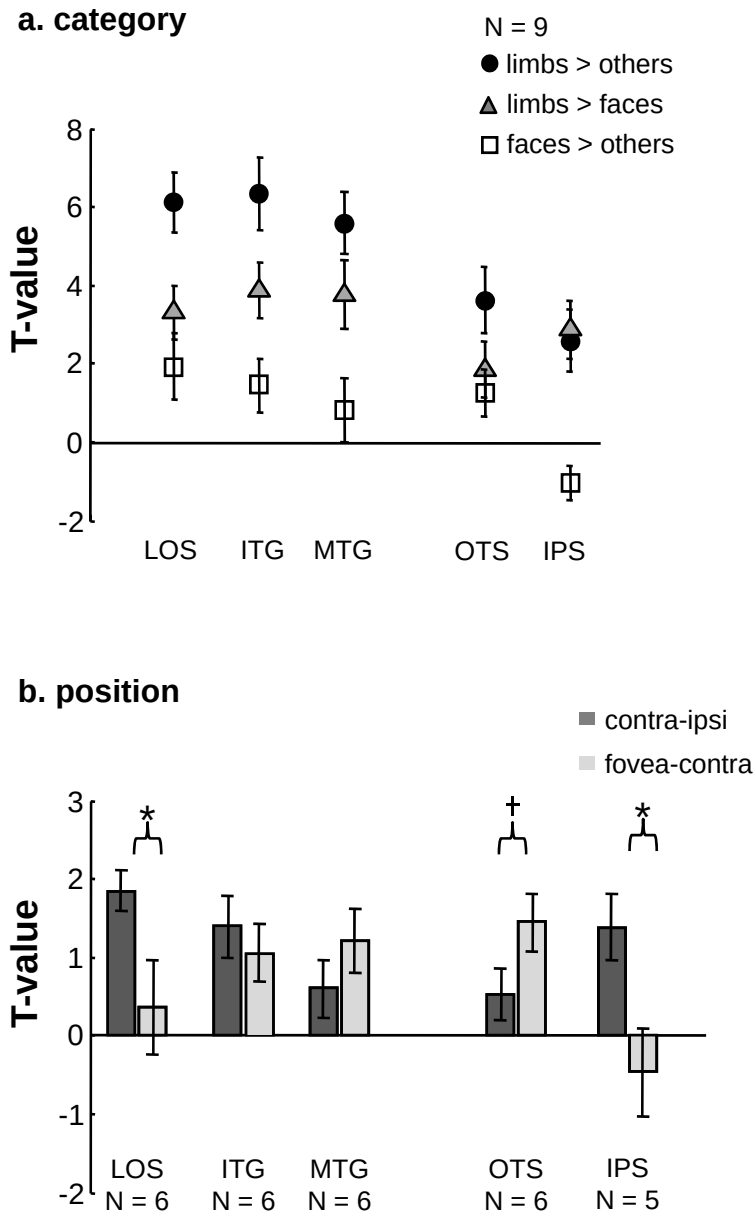
a. category (n=9)



b. position (n=6)

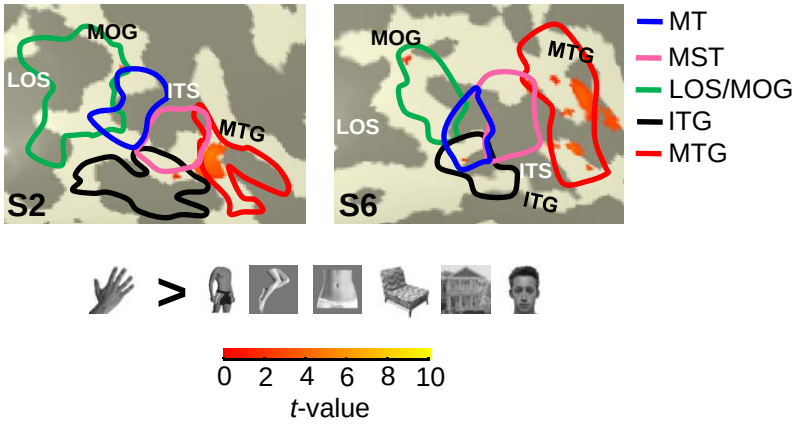


Supplemental Figure 2

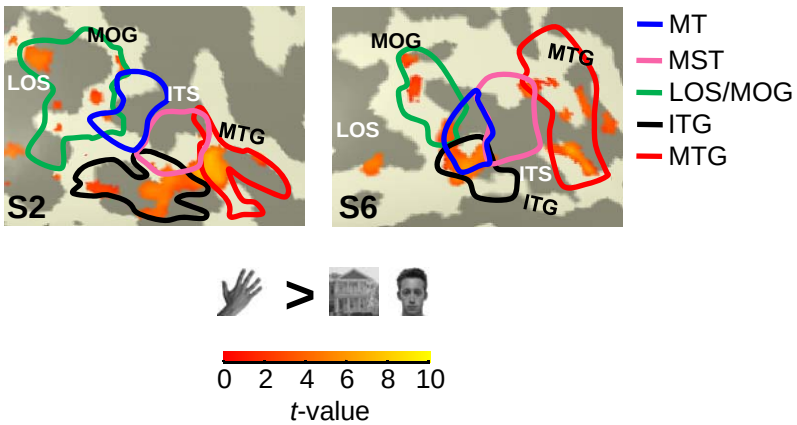


Supplemental Figure 3

a.



b.



Supplemental Figure 4

Supplemental Figure 1. Crescent organization surrounding hMT+ in left hemisphere at time 1 and time 2, three years later. (a) Lateral view of the inflated left hemisphere of subjects S1 and S7 illustrating the statistical contrast of limbs > all categories ($t > 3$, voxel level) at time 1, which is the same data as illustrated on the corresponding right hemispheres in Figure 5. Resulting limb-selective LOS/MOG, ITG, and MTG outlined in green, yellow, and red, respectively. hMT+ indicated in blue outline. (b) *Left column:* Lateral view of the inflated left hemisphere of subjects S3 and S6 with the same statistical contrast as in (a). *Right column:* Lateral view of the inflated left hemisphere of subjects S3 and S6 three years later with the contrast of headless bodies, torsos, legs, hands > faces, houses, and chairs ($t > 3$, voxel level). Headless body, torso, and leg images were the same stimuli used in Orlov et al., 2010. Chair images were the same stimuli used in Downing et al., 2007. Limb-selective LOS/MOG, ITG, and MTG defined from time 1 outlined in green, yellow, and red, respectively. hMT+ indicated in blue outline. There is a close correspondence between the limb-selective ROIs defined at time 1 and the body part-selective ROIs defined three years in the left hemisphere similar to the right hemisphere illustrated in Figure 9.

Supplemental Figure 2. Decreasing face selectivity and difference in position sensitivity across the limb-selective LOS/MOG, ITG, and MTG are not due to overlap with hMT+. (a) Using the ROIs defined from the six category experiment in session one, timecourses from session two were extracted. Response amplitudes are shown relative to the fixation baseline. There is consistent limb selectivity across the three limb-selective ROIs compared to the other five categories, where there is decreasing face selectivity from the LOS to the ITG to the MTG (left; corresponding *t*-values illustrated in **Figure 7a**). Similar profile of response when excluding the overlapping voxels with hMT+ (right). (b) Contralateral (contralateral – ipsilateral) and foveal (foveal-contralateral) biases in the LOS/MOG, ITG, and MTG limb-selective activations from the three-position experiment (corresponding *t*-values illustrated in **Figure 7b**). Asterisk: contralateral bias is significantly stronger than the foveal bias, $p < .05$. Error bars indicate SEMs across subjects. Contralateral bias in LOS and increasing foveal bias in ITG and MTG are maintained when excluding the overlapping voxels with hMT+, indicating that the position sensitivities are not due to overlap with hMT+.

Supplemental Figure 3. Distributed network of limb-selective activations: Limb-selective OTS illustrates foveal bias while limb-selective IPS illustrates contralateral bias and negative face selectivity. (a) Using the ROIs from the six category experiment (session one), the time courses from the six category experiment (session two) were extracted and *t*-values were calculated three ways: limbs > others (flowers, cars, guitars, and houses), limbs > faces, and faces > others. There is consistent limb selectivity in both the limb-selective IPS and OTS, but lesser limb selectivity than the three LOTC regions (same data as in **Figure 7a**, but included here for comparison). Notably, the IPS has negative face-selectivity, which did not occur in any of the other limb-selective ROIs. (b) Contralateral (contralateral – ipsilateral) and foveal (foveal-contralateral) biases in the limb-selective LOS/MOG, ITG, MTG, OTS, and IPS from the three-

position experiment. For the LOTC limb-selective activations, the responses become more foveal as one progresses from the LOS to the ITG to the MTG and once the signals reach the OTS, the foveal bias is significantly greater than the contralateral bias. The IPS, however, illustrates a significantly greater contralateral than foveal bias like the limb-selective LOS/MOG. Asterisk: Contra > Fovea, $p < .05$; Cross: Fovea > Contra, $p < .05$.

Supplemental Figure 4. Hand-selective region is located anterior to MST on the middle temporal gyrus and is only localized when including other body parts in the comparison condition. (a) Zoomed portion of LOTC (same extent as Figure 9) in two example subjects illustrating a hand-selective contrast of hands > headless bodies, torsos, legs, chairs, faces, and houses comparable to the contrast used in Bracci et al., 2010. The hand-selective region is located on the middle temporal gyrus, not the lateral occipital sulcus as reported by Bracci and colleagues. This is an important distinction to make because both areas MT and MST separate the LOS from the MTG and the receptive field sizes and associated functional properties of MT and MST are vastly different both from each other, as well as the surrounding cortex. (b) Same subjects and extent as in (a). Using a more general contrast, the hand-selective activations now largely correspond to the constellation of activations of the original limb-selective ROIs defined at time 1. In order to localize a focal hand-selective activation, other body part images must be included in the comparison condition, otherwise a constellation of activations will result, which replicates both Orlov et al., 2010 and Bracci et al., 2010. Outline of limb-selective components LOS/MOG, ITG, and MTG defined from time 1 are included for comparison. Motion-selective subcomponents MT and MST were functionally defined using separate localizer scans (see Materials and Methods). Acronyms: ITG: inferior temporal gyrus; MTG: middle temporal gyrus; MOG: middle occipital gyrus; ITS: inferotemporal sulcus; LOS: lateral occipital sulcus.