HEMISPHERE-SPECIFIC CODING OF LEFT VS RIGHT VIEWPOINT PERCEPTION OF THE HUMAN BODY IN LINGUAL GYRUS.

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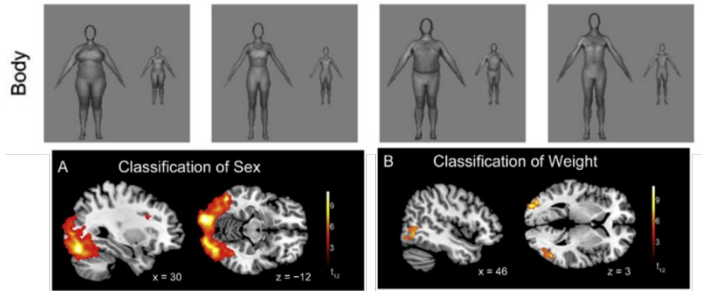
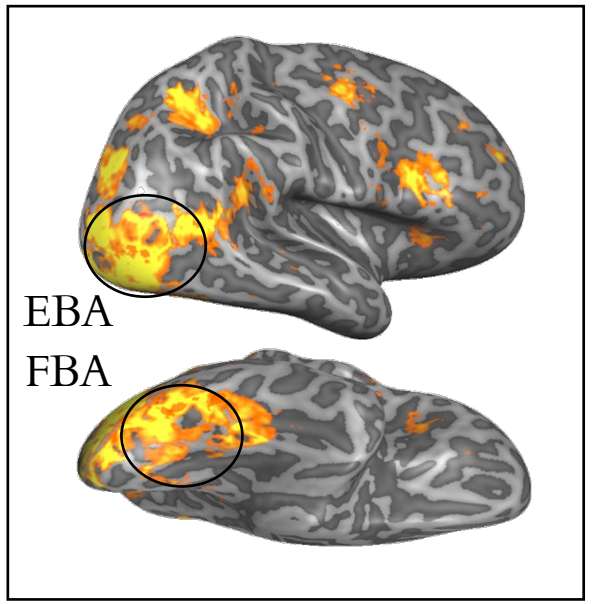
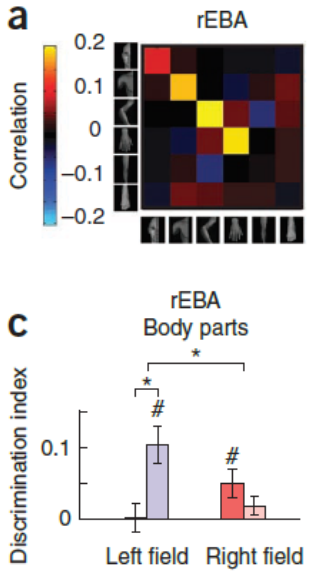
Shape and sex



Foster et al. 2019

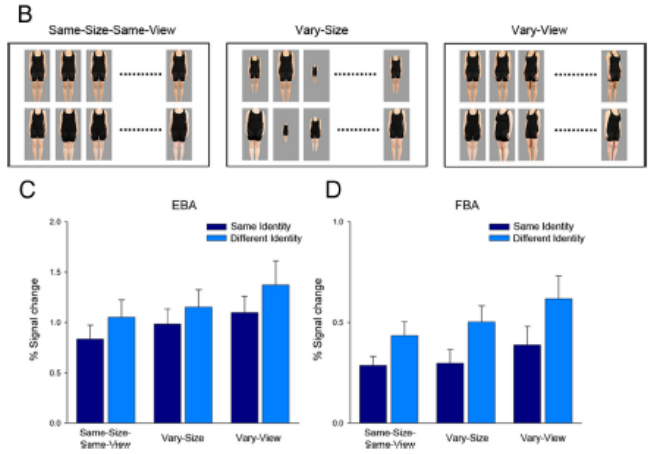
Location in visual field





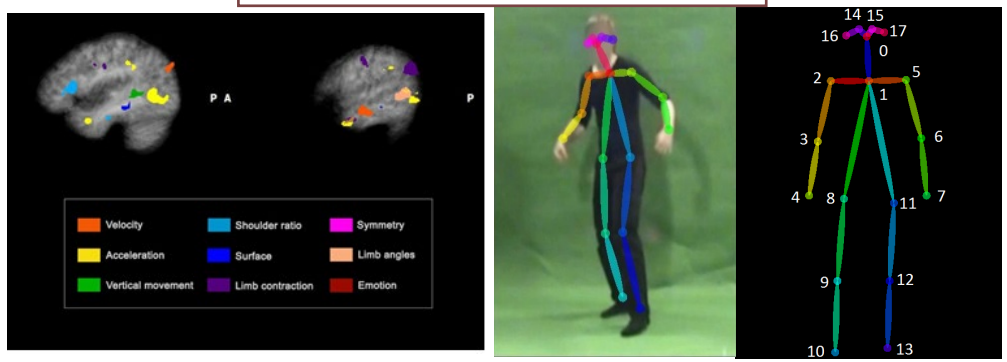
Chan et al. 2010

Viewpoint + identity

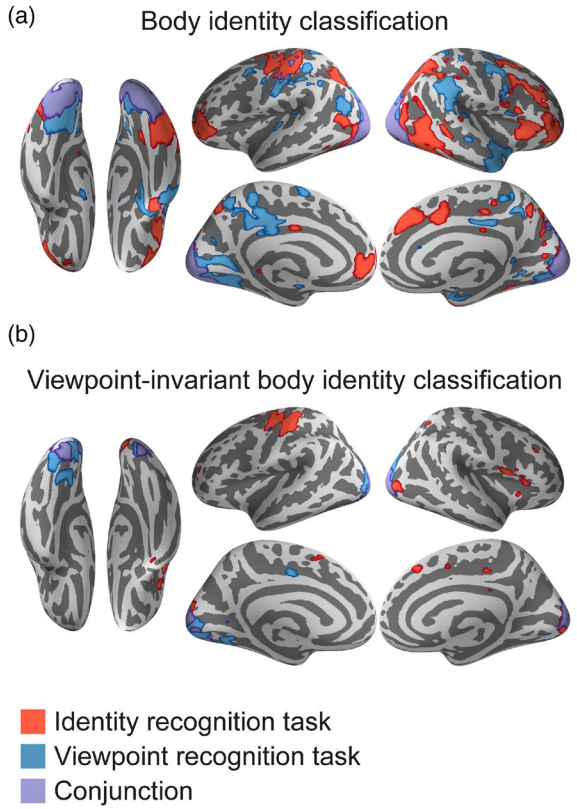


Ewbank et al. 2011

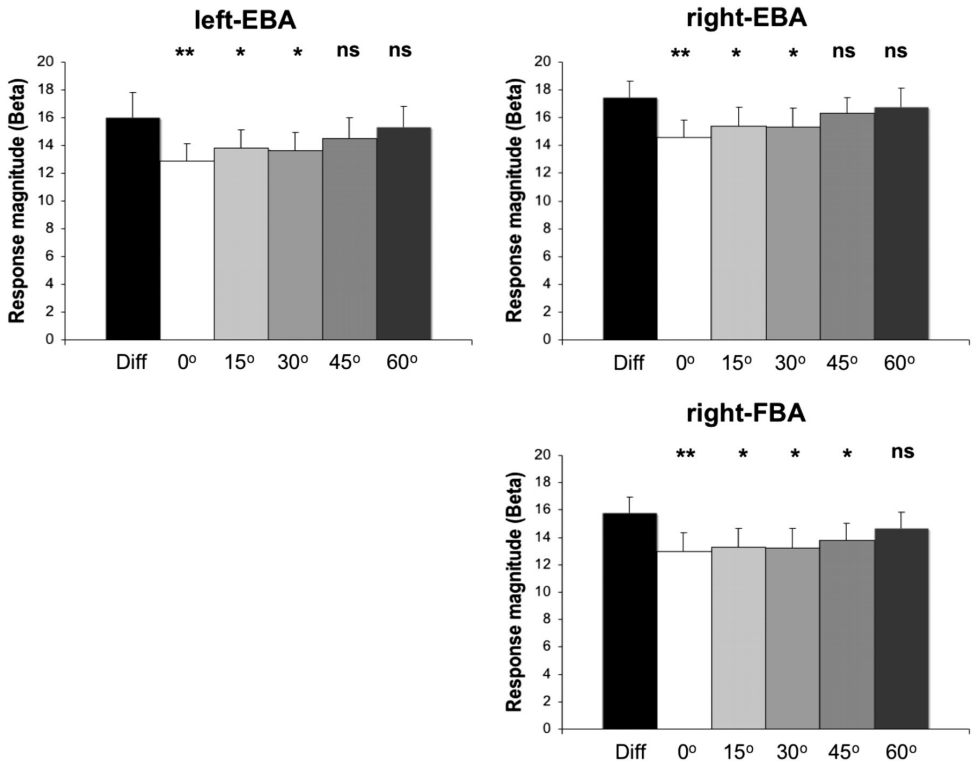
Pose + movement features



Poyo Solanas et al. 2020



Foster et al. 2021

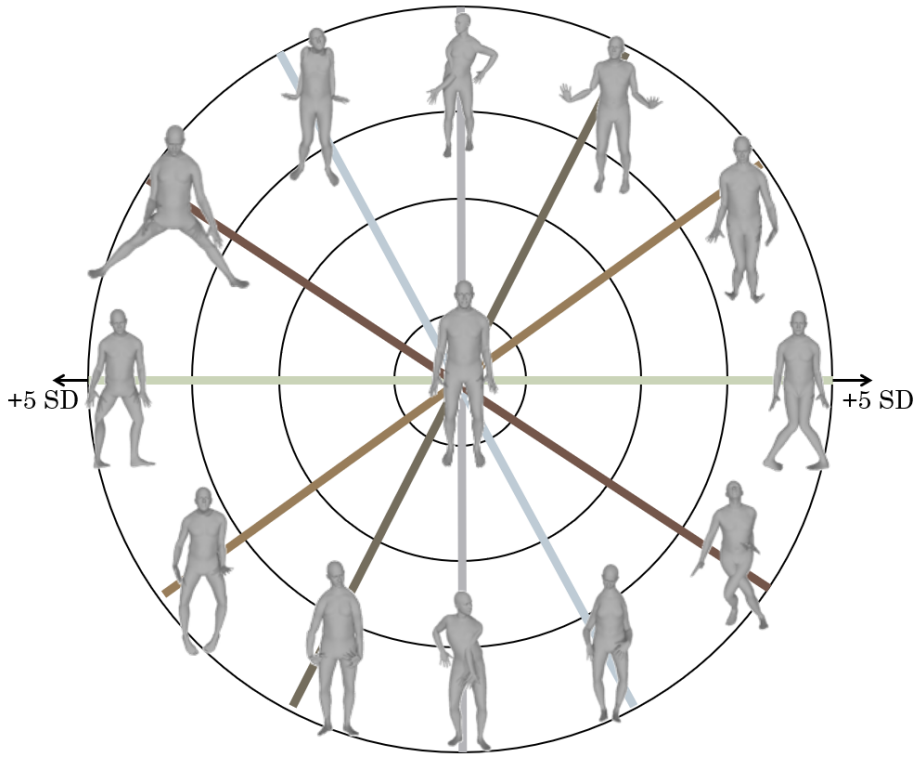


Taylor et al. 2010

Viewpoint invariant representation in body selective region FBA but not EBA

Viewpoint invariant representation in body selective regions EBA and FBA

- Sample random parameters from latent space, with a certain "distance" from origin (shell)
- Generate 3D body mesh
- Set a viewpoint rotation (-45°, 0°, 45°)
- Render with desired lightning, colors.
- 108 unique poses x 3 viewpoints = 324 unique stimuli.



-45°

0°

45°

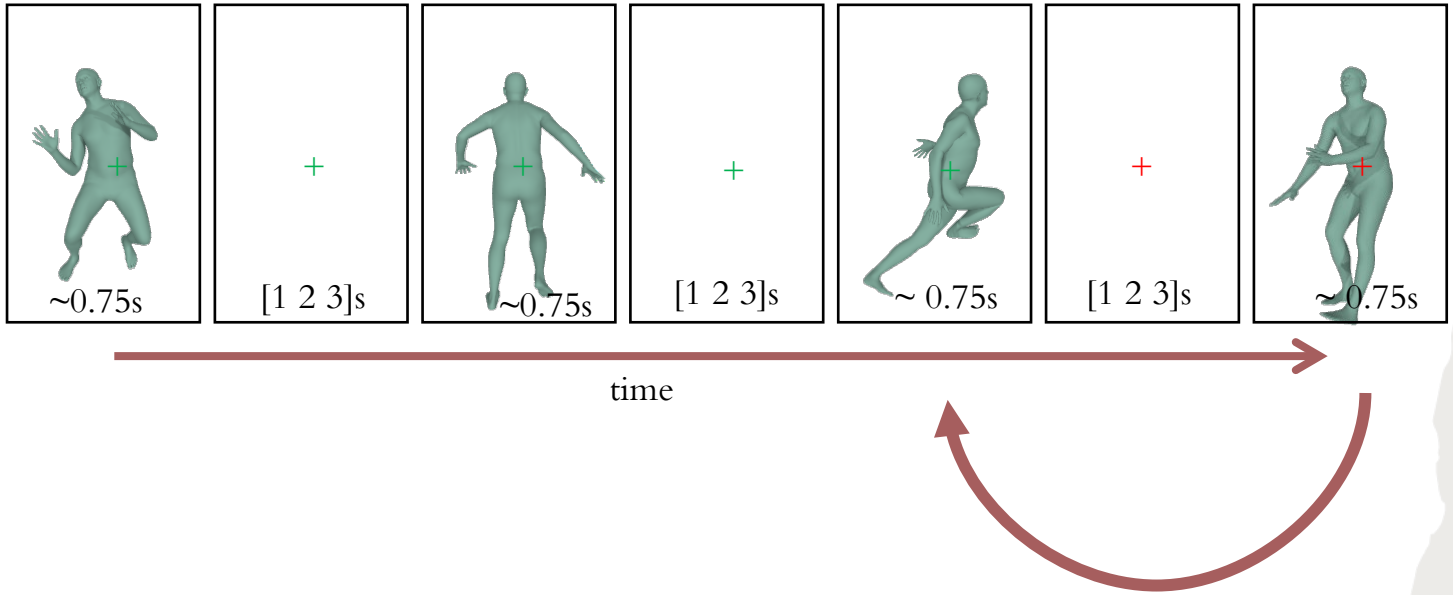
Loper et al. 2015; Pavlakos et al. 2019

- 9 Participants (5 males) right-handed.
- 7 Tesla, T2*-weighted Multi-Band accelerated EPI 2D BOLD sequence, MB = 3, voxel size = 1.6 mm3, TR = 1000 ms, TE = 20 ms
- Anatomical MP2RAGE 0.7 mm3
- Localizer + Fast event related + Localizer
- Localizer: Block design

(Houses, tools, faces and bodies)

- 12 runs over 2 sessions.
- Each run: 18 unique poses x

  3 viewpoints x 3 repetitions = **162 trials**
- Task: 1-back detection (6/run)

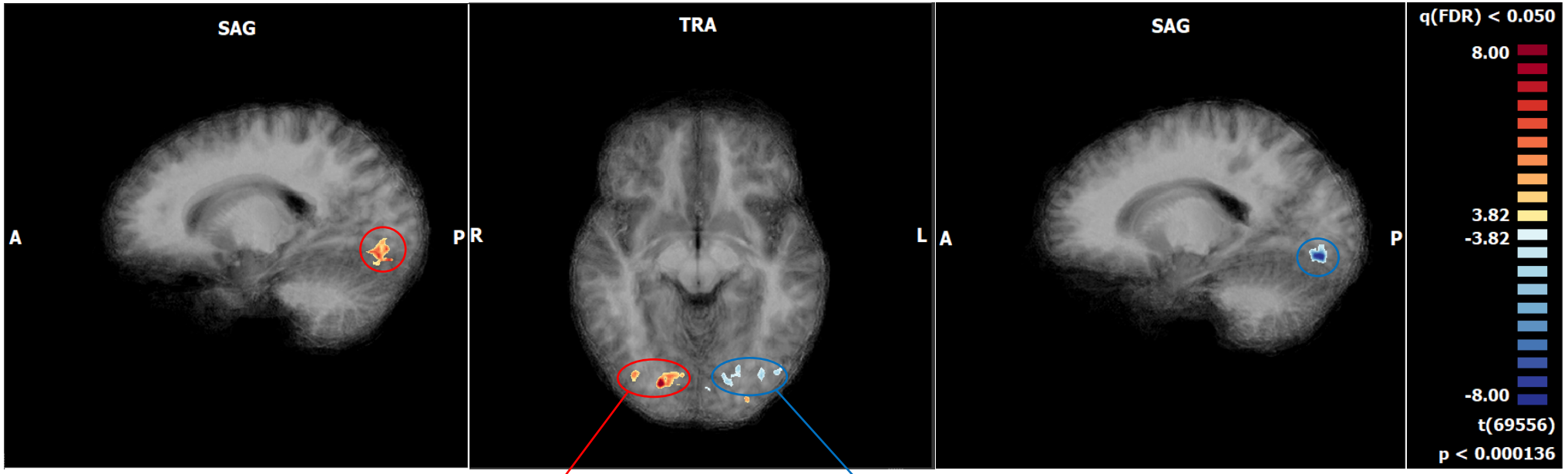


- Preprocessing and Analysis was performed in BrainVoyager and FSL
  - Scan slice time correction;
  - 3D motion correction using sinc interpolation;
  - Temporal High pass filtering + linear trend removal;

- For each run functional images were coregistered to the first volume of the first run; The latter was coregistered to the structural image using boundary based (Greve & Fischl, 2009) registration algorithm.
- Intersession non-linear distortion was corrected using the FNIRT (Andersson et al. 2010) command in FSL.

- Group Univariate analysis:
  - Each participant was transformed in Talairach space (Talairach & Tournaux, 1988);
  - Group General Linear Model (GLM) with 7 predictors of interest:
    - Viewpoint 0°
    - Viewpoint 45°
    - Viewpoint -45°
    - Localizers (Houses, Bodies, Tools, Faces);
    - Predictor of no interest: one back trials; motion parameters; fixation trials.

GLM contrast: Viewpoint -45° > Viewpoint 45°



x = 18

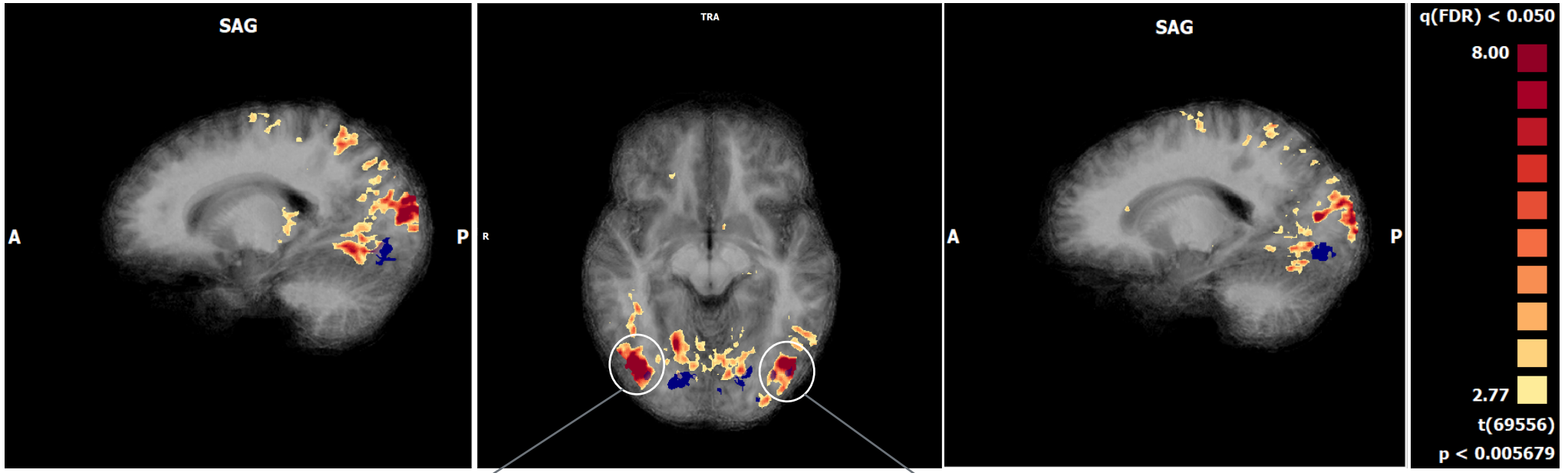
z = -5

x = -18

-45°

45°

Overlap between Body sensitive regions (Red) and Viewpoint -45° > Viewpoint 45° (Blue)



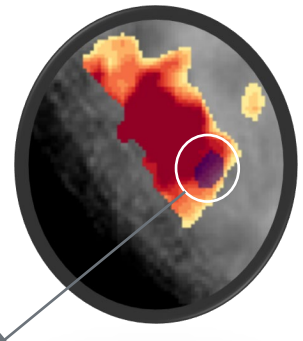
x = 18

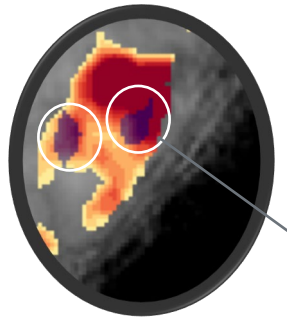
z = -5

x = -18

Right EBA

Left EBA





Body (loc) > [Houses, Tools, Faces]

-45° > 45°

Viewpoint sensitive body representation in EBA.

45° > -45°

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