**Du et al. (2024) Organization of the Human Cerebral Cortex Estimated Within Individuals: Networks, Global Topography, and Function**

This key provides additional information on the task contrast maps displayed in the paper and also uploaded on BALSA (https://balsa.wustl.edu/study/zK166). The uploaded images were created using the following condition contrasts, with the naming conventions as below. Detailed descriptions for each task, code, and the full set of stimuli used can be found on Harvard Dataverse (https://doi.org/10.7910/DVN/AVB4BW). The individual participant MRI data can be obtained from the NIMH Data Archive (NDA) (https://nda.nih.gov/).

| Task Name | Contrast Name | Target Condition* | Control Condition* |
|---|---|---|---|
| Episodic Projection | PASTFUTUREmPRESENT | Mean of [PAST SELF, FUTURE SELF] | PRESENT SELF |
| Motor | RHANDmLHAND | RH | LH |
| | RFOOTmLFOOT | RF | LF |
| | GLUTESmALL | G | Mean of [RH, LH, RF, LF, T] |
| | TONGUEmALL | T | Mean of [RH, LH, RF, LF, G] |
| N-Back | 2BACKm0BACK_ALL | Mean of [2-Back FACES, 2-Back SCENES, 2-Back LETTERS, 2-Back RHYMES] | Mean of [0-Back FACES, 0- Back SCENES, 0-Back LETTERS, 0-Back RHYMES] |
| | 2BACKm0BACK_FACE | 2-Back FACES | 0-Back FACES |
| | 2BACKm0BACK_LETTER | 2-Back LETTERS | 0-Back LETTERS |
| | 2BACKm0BACK_RHYME | 2-Back RHYMES | 0-Back RHYMES |
| | 2BACKm0BACK_SCENE | 2-Back SCENES | 0-Back SCENES |
| Oddball | TARGETmBASELINE | TK (Target Ks) | Implicit Baseline |
| Sentence Processing | SENTmCTRL | S (Sentences) | N (Non-words) |
| Theory-of-Mind | EMOmPHYS+BELmPHO | Mean of [E-S (from the Pain task), B-S (from the False Belief task)] | Mean of [P-S (from the Pain Task), P-S (from the False Belief Task)] |
| Visual | ECC1mECC2+3 | E1 (Central Eccentricity) | Mean of [E2, E3] |
| | ECC2mECC1+3 | E2 (Middle Eccentricity) | Mean of [E1, E3] |
| | ECC3mECC1+2 | E3 (Peripheral Eccentricity) | Mean of [E1, E2] |
| | HORIZONTALmVERTICAL | H (Horizontal Wedges) | V (Vertical Wedges) |

*as defined by the Task Descriptions document for each task.

If you have questions, please contact Jingnan Du (jingnandu@fas.harvard.edu) or Randy Buckner (randy_buckner@harvard.edu).

Notes regarding the task description files and citating the original sources:

1. **Theory-of-Mind.** The Theory-of-Mind task combines the Pain and False Belief tasks. The Theory-of-Mind tasks were adopted from Rebecca Saxe and colleagues to explore domain-specialized processing associated with representation of another person's mental states. Please cite as appropriate the below publications when using the tasks or using their generously provided stimuli:

Saxe R, Kanwisher N. People thinking about thinking people: The role of the temporo-parietal junction in "theory of mind". *Neuroimage* 19:1835-1842, 2003.
Dodell-Feder D, Koster-Hale J, Bedny M, Saxe R. fMRI item analysis in a theory of mind task. *Neuroimage* 55:705-712, 2011.
Bruneau EG, Pluta A, Saxe R. Distinct roles of the 'Shared Pain'and 'Theory of Mind'networks in processing others' emotional suffering. *Neuropsychologia* 50:219-231, 2012.
Jacoby N, Bruneau E, Koster-Hale J, Saxe R. Localizing pain matrix and theory of mind networks with both verbal and non-verbal stimuli. *Neuroimage* 126:39-48, 2016.

2. **Episodic Projection.** The Episodic Projection task was adapted and extended from Andrews-Hanna et al. (2010) and DiNicola et al. (2020) to encourage processes related to remembering the past and imagining the future (prospection). New stimuli and conditions not previously reported were also used for the first time in Du et al. (2024). Please cite Du et al. (2024) as appropriate and the original publications when using the tasks or stimuli:

Andrews-Hanna JR, Reidler JS, Sepulcre J, Poulin R, Buckner RL. Functional-anatomic fractionation of the brain's default network. *Neuron* 65:550-562, 2010.
DiNicola LM, Braga RM, Buckner RL. Parallel distributed networks dissociate episodic and social functions within the individual. *J Neurophysiol* 123:1144-1179, 2020.

3. **Sentence Processing**. The Sentence Processing task was adapted from Ev Fedorenko and colleagues to examine domain-specialized processing related to accessing word meaning and phrase-level meaning. Please also cite as appropriate the following publications using the tasks or using their generously provided stimuli:

Fedorenko E, Hsieh P-J, Nieto-Castañón A, Whitfield-Gabrieli S, Kanwisher N. New method for fMRI investigations of language: Defining ROIs functionally in individual subjects. *J Neurophysiol* 104:1177-1194, 2010.
Fedorenko E, Duncan J, Kanwisher N. Language-selective and domain-general regions lie side by side within Broca's area. *Curr Biol* 22:2059-2062, 2012.

4. **Oddball.** The Oddball task contrast described in Du et al. (2024) is abbreviated VODDK in our description and code files. VODDK is an abbreviation for "Visual Oddball K", the operational name for this specific variant of the task.