Cognitive Task Overview: TestMyBrain Visual Paired Associates Memory

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TMB Test Name: TestMyBrain Visual Paired Associates Memory
Test Demos: Study | Test
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Acknowledgments: Images from MIT SUN Database (Xiao et al., 2010). See MIT SUN Database for copyright information.

The Many Brains Project

The Many Brains Project, is a 501(c)(3) non-profit that supports TestMyBrain (TMB) in collaboration with the Laboratory for Brain and Cognitive Health Technology at McLean Hospital and Harvard Medical School. We currently support many different types of research studies through our infrastructure for cognitive assessment - these range in size from small lab-based pilot studies to large longitudinal, multisite clinical research studies with tens of thousands of participants. As TestMyBrain has been continuously in operation since 2008, we provide a stable and secure platform for hosting and delivering mobile and web-based cognitive assessment protocols. Through TestMyBrain.org, data have been collected from over 3.7 million participants in a *citizen science* framework that includes structured return of research results toward the development, validation, and normative characterization of cognitive measures. We currently support research and education at over 2,000 sites worldwide engaged in digital neuropsychological assessment.

CITATION
Please credit The Many Brains Project and TestMyBrain in any papers, posters, or publications related to the TMB tests or data collected by TMB tests.

- Example:
    - All tasks were selected from and hosted on The Many Brains Project's web-based cognitive testing platform, TestMyBrain (Germine et al., 2012; The Many Brains Project).
        - Germine, L., Nakayama, K., Duchaine, B. C., Chabris, C. F., Chatterjee, G., & Wilmer, J. B. (2012). Is the Web as good as the lab? Comparable performance from Web and lab in cognitive/perceptual experiments. *Psychonomic Bulletin & Review*, *19*(5), 847-857.
        - The Many Brains Project. *TestMyBrain Cognitive Tests*. URL: www.manybrains.net

Test Overview

Background:
TMB Visual Paired Associates Memory (Singh et al., 2021) is a visual episodic memory task designed for remote, unsupervised administration. The images included in the test are from the MIT SUN Database (Xiao et al., 2010)

Task Parameters:
In the study portion of the test, participants are presented with 24 pairs of images and informed they will later be tested on which images were paired together. The two images within each pair are unique examples of the same type of object or scene (e.g., two images of barns). Image pairs are presented sequentially for 5000 ms each, with a 1500 ms interstimulus interval between pairs. After a delay of approximately 1.5-2.5 minutes, during which another brief test is typically completed, participants are sequentially presented with one image from each of the studied image pairs. Participants are asked to identify which image was previously paired with the probe image by selecting the correct image from five response options. Each of the incorrect response images depicts a unique example of the same type of object or scene as the images in the original pair (e.g., barns). Participants complete one unscored practice trial before beginning the 24 test trials.

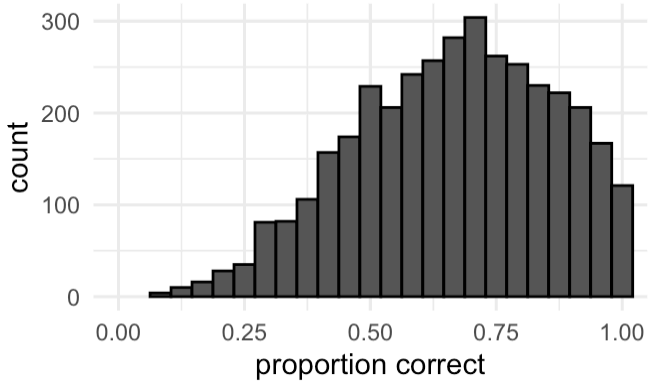
Primary Outcome:
The suggested primary outcome for the test is the proportion of test trials answered correctly (accuracy).

User Input:
Participants respond either by touching (touch-compatible devices) or clicking their selections.

Alternate Task Versions: Alternate forms of this test are not available.

Psychometrics:

- **Reliability**: In single-session testing, variation in accuracy between participants has a split-half reliability of .77.
- **Score distribution**:



References:

Singh, S., Strong, R. W., Jung, L., Li, F. H., Grinspoon, L., Scheuer, L. S., Passell, E. J., Martini, P., Chaytor, N., Soble, J. R., & Germine, L. (2021). The TestMyBrain Digital Neuropsychology Toolkit: Development and Psychometric Characteristics. J*ournal of Clinical and Experimental Neuropsychology, 43*(8), 786-795.

Xiao, J., Hays, J., Ehinger, K. A., Oliva, A., & Torralba, A. (2010). SUN database: Large-scale scene recognition from abbey to zoo. In *2010 IEEE Computer Society Conference on Computer Vision and Pattern Recognition* (pp. 3485-3492). IEEE.