Cognitive Task Overview: TestMyBrain Verbal Paired Associates Memory

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TMB Test Name: TestMyBrain Verbal Paired Associates Memory
Test Demos: Standard Concrete Study | Test; Standard Abstract Study | Test
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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 Verbal Paired Associates Memory (Germine et al., 2012; Singh et al., 2021, Wilmer et al., 2012) is a verbal episodic memory task, adapted from the Wechsler Memory Scale-III (Wechsler, 1997) for remote, unsupervised administration.

Task Parameters:
In the standard-length versions of the test, participants are visually presented with 25 pairs of words (e.g., truck | lemon), and informed they will later be tested on which words were paired together. Word pairs are presented sequentially for 3000 ms each, with a 500 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 word from each of the studied word pairs, and asked to identify which word was previously paired with it by selecting the correct word from a list of four response options. On each trial, one of the wrong answers is a correct response to another trial, one of the wrong answers is an incorrect response to another trial, and one incorrect response appears only during the current trial. Participants completed one unscored practice trial before beginning the 25 test trials.

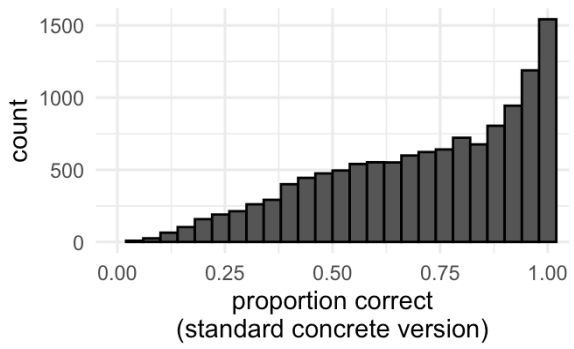
Primary Outcome:
The suggested primary outcome for the test is the proportion of test trials answered correctly (accuracy).

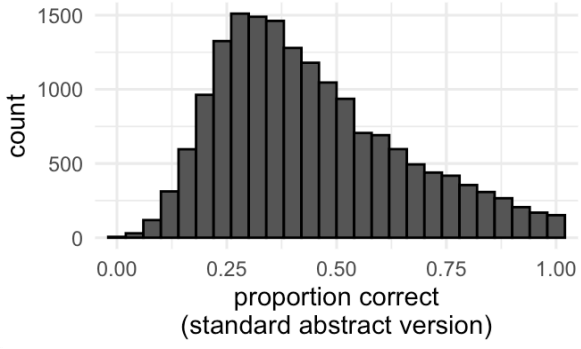
User Input:
Participants respond either by touching their selections (touch-compatible devices), clicking their selections, or using the 1-4 keyboard keys.

Alternate Task Versions: Multiple concrete and abstract versions of the test are available, at both standard and EMA-length.

Psychometrics:

- **Reliability**: In single-session testing, variation in accuracy between participants has a split-half reliability of .89 for the standard concrete version, and .83 for the standard abstract version.
- **Score distribution**:





References:

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.

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.

Wechsler, D. (1997). Wechsler Memory Scale-III. San Antonio, TX: Psychological Corporation.

Wilmer, J. B., Germine, L., Chabris, C. F., Chatterjee, G., Gerbasi, M., & Nakayama, K. (2012). Capturing specific abilities as a window into human individuality: The example of face recognition. *Cognitive Neuropsychology, 29*(5-6), 360-392.