PhenX Toolkit

Data Collection Worksheet

Please Note: The Data Collection Worksheet (DCW) is a tool to aid integration of a PhenX protocol into a study. The PhenX DCW is not designed to be a data collection instrument. Investigators will need to decide the best way to collect data for the PhenX protocol in their study. Variables captured in the DCW, along with variable names and unique PhenX variable identifiers, are included in the PhenX Data Dictionary (DD) files.

Summary of the Immediate and Delayed Memory Task (IMT/DMT)

In the Immediate Memory Task, a series of randomly generated numbers (the default is 5-digit numbers (e.g., 38391)), appear on a computer monitor one at a time for 500 milliseconds (msec) each with a 500 msec delay between numbers. The participant is instructed to respond when two identical numbers are presented in sequence. The three main types of stimuli are target, filler, and catch stimuli. A target stimulus is a 5-digit number that is identical to the preceding number. Responses to target stimuli are recorded as correct detections. A catch stimulus is a number that differs from the preceding number by only one digit (position and value determined randomly). Responses to catch stimuli are recorded as commission errors. A filler stimulus is a random 5-digit number that appears whenever a target or catch trial is not scheduled to appear. Responses to filler stimuli are recorded as filler errors.

The Delayed Memory Task adds a series of distracter numbers ("12345" by default) between each stimulus to be compared to the previous in the series. Participants are instructed to ignore these distracter sequences, but the presentation of these sequences increases the length of time between two target stimuli and evokes a greater working-memory component to the task, similar to the N-back task.

The experimenter can set the software to collect either the IMT or the DMT or both (default), in a contiguous task session. The experimenter can also set the duration of the stimulus presentation and the intervals between stimuli, as well as the complexity of stimuli (number of digits) to yield optimal sensitivity for individual differences in different populations.

Scoring

The IMT/DMT software generates a summary report for each session that includes: 1) rates of correct detections (and therefore rates of omission errors) 2) rates of commission error responses to catch stimuli, 3) rates of filler errors, 4) parametric and non-parametric indices or stimulus discriminability, and 5) parametric and non-parametric indices of response bias (i.e. liberal or conservative response

behavior). A higher number of commission errors indicates an impulsive pattern of responding.

This program can be found at www.nrlc-group.net/software/software.php

Protocol source: https://www.phenxtoolkit.org/protocols/view/530602