## Cognitive Battery - Flanker

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# Purpose

This protocol contains procedures for using the Flanker task in the Cognitive Battery.

Flanker is set up to test time-constrained decision-making models where a subject must select among 2 competing options. The task is constructed to access decision-making and perceptual processing speed, with a particular focus on inhibitory control to suppress distracting information presented alongside the main stimulus.

On each trial, the subject is presented with a row of symbols. The central symbol is an arrow pointing either right or left, and the subject's task is to indicate, quickly and accurately, which direction it is pointing by pressing the interface (keys or touchscreen) in that direction.

The surrounding symbols, or "flankers", may be arrows pointing right or left or a separate symbol with no directionality. The flankers act to distract the subject with congruent, conflicting, or neutral information. Therefore an implicit goal of the task is to ignore the flankers and focus only on the central stimulus.

Each trial presents a new row of symbols. When all trials have been completed, the subject is presented with a score that factors in both accurate responses and reaction time.

Data saved out from the task includes responses, correct/incorrect info, and reaction time data.

# Terminology

* The [Cognitive Battery (or CogBat)](https://osf.io/8mdfy/wiki/home/) is a set of computerized tasks for the Android operating system, running on the [SMILE experiment-writing library for Python](http://smile-docs.readthedocs.io/en/latest/).
* **The Cognitive Battery Flanker task** is a task within the CogBat.
* \*\*Flankers\* are the stimuli symbols to the left and right of the central symbol. They serve to distract the subject with information that may conflict with the signal they are supposed to attend to (the direction of the central symbol).

# Required credentials/training

No special qualifications required.

# Required equipment and supplies

* Android phone or tablet set up with the [Cognitive Battery app](https://osf.io/g7e3x/).

# Methods and procedures

## Setting up the subject.

Open the CogBat and enter the subject ID at the appropriate screen. Select the Flanker task from the task-selection menu.

Review the on-screen instructions with the subject and ask if they have any questions.

# Revisions

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| **SOP Revision #** | **Date** | **Description of change(s)** |
| 170919 | 09/19/2017 | First version |
| 171003 | 10/03/2017 | Added links to other CogBat protocols |
| 171009 | 10/09/2017 | Updated task rationale |