

DscoreApp :: CHEAT SHEET

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The Implicit Association Test

The Implicit Association Test (Greenwald et al., 1998) is one of the most commonly used measures for the implicit assessment of attitudes and preferences. It is based on the speed and accuracy with which stimuli representing four different categories (two contrasting objects and positive and negative attributes) are sorted in their belonging category by means of two response keys.

IAT Structure

Block	Function	Left response key	Right response key
1	Practice	Object 1	Object 2
2	Practice	Positive	Negative
3	Associative Practice Mapping A	Object 1 + Positive	Object 2 + Negative
4	Associative Test Mapping A	Object 1 + Positive	Object 2 + Negative
5	Practice	Object 2	Object 1
6	Associative Practice Mapping B	Object 2 + Positive	Object 1 + Negative
7	Associative Test Mapping B	Object 2 + Positive	Object 1 + Negative

IAT D-score

Core Procedure:

- Compute **D-score** for practice blocks ($D_{practice} = \frac{M_{B6} - M_{B3}}{sd_{B6, B3}}$)
- Compute **D-score** for test blocks ($D_{test} = \frac{M_{B7} - M_{B4}}{sd_{B7, B4}}$)
- Compute **D-score** = $\frac{D_{practice} + D_{test}}{2}$
(Trial > 10,000ms are discarded)

Algorithms:

Dscore	Error treatment	Lower tail treatment
D1	Built-in	No
D2	Built-in	< 400ms
D3	Mean + 2sd	No
D4	Mean + 600ms	No
D5	Mean + 2 sd	< 400ms
D6	Mean + 600ms	< 400ms

DscoreApp

Appearance & Input

DscoreApp

THE D-SCORE SHINY APP

IMPORT DATA

HOW IT WORKS

THE D-SCORE RESULTS PANEL

DESCRIPTIVE STATISTICS PANEL

WHAT YOU GET

REFERENCES

CONTACTS

LICENSE

IMPORT DATA

Before importing the data:

- Remove from the dataset the pure practice blocks of the IAT (i.e., the blocks in which only either the target or the attribute stimuli are sorted in their reference categories).
- The IAT data are in a CSV file with ";" set as separator of the columns. In the template downloadable at "Download CSV Template", ";" is already set as the column separator.
- Rename the columns according to the columns' names of the Template file, and define the variables as follows:
 - **participant**: it defines the ID of the participants. The IDs may be either numeric (e.g., 123, 300, 450) or a string (e.g., aa01, aa02, JohnDoe0001 etc.).
 - **block**: it defines the blocks of the IAT. The labels denoting each block are not important per se. The important thing is that each block is defined by a unique label, hence there have to be **four distinct labels** denoting the practice and test blocks of Mapping A (e.g., practiceWhiteGood, testWhiteGood) and the practice and test blocks of Mapping B (e.g., practiceWhiteBad, testWhiteBad).
 - **latency**: it contains the latency of the responses expressed in millisecond. If the IAT DID NOT include a built-in correction, place the raw latencies in this variable. If the IAT DID include a built-in correction, please place the **already inflated** latency of the error responses.
 - **correct**: it contains the correct and error responses to the IAT. Correct responses have to be coded as 1, error responses have to be coded as 0.

Summarizing, for using the App it is fundamental that the dataset contains the four aforementioned variables with the specific associated names.

Download Template

Getting started – Prepare dataset

1. Prepare a CSV file with comma set a separator
2. Get rid of the pure practice blocks (B1, B2, & B5)
3. Name the columns as following:
 - **participant**: Participants'd IDs
 - **block**: IAT blocks labels (4 levels)
 - **latency**: Response times in millisecond
 - **correct**: response accuracy (either 0 or 1)
4. Save the file & upload it with **BROWSE...**

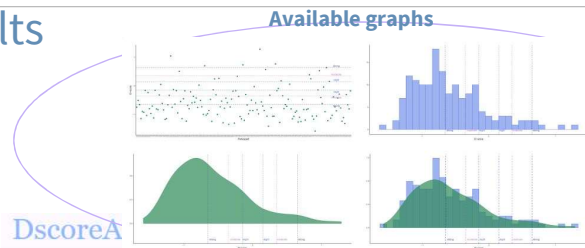
Getting started – Compute

1. Click on **PREPARE DATA** and wait for **DATA ARE READY!**
2. Choose a **D-score** from the drop-down menu
3. Discard inaccurate participants (**Accuracy deletion**)?
4. Discard fast participants (**Fast participants deletion**)?
5. Click on **CALCULATE & UPDATE**

Click this button everytime you want to make a change effective!

Graphs and Results

Results will appear in the “D-score results” Panel. Once the first D-score is computed, the **DOWNLOAD** button is activated, and results can be downloaded in a CSV format. Infos on what's inside the CSV file are available by clicking on the **WHAT YOU GET** section in the **Read Me First** panel.



DscoreA

Example data
☐ Race IAT dataset

Choose CSV file
 TPM_data.csv

MappingA Practice block label
 e.g. practice.WhiteGood
 practice.Milkbad

MappingA Test block label
 e.g. test.WhiteGood
 test.Milkbad

MappingB Practice block label
 e.g. practice.WhiteBad
 practice.Milkgood

MappingB Test block label
 e.g. test.WhiteBad
 test.Milkgood

Show info

DATA ARE READY!

Show info
 D3 (+2sd error inflation, no lower treatment)

Accuracy deletion
☒ No
☐ Yes (Practice + Test blocks)

Fast participants deletion
☐ No
☐ Yes

Graphic display
☒ Points
☐ Histogram
☐ Density
☐ Histogram + Density

Point Graph
 None

Note: Please, read the READ ME FIRST before doing anything

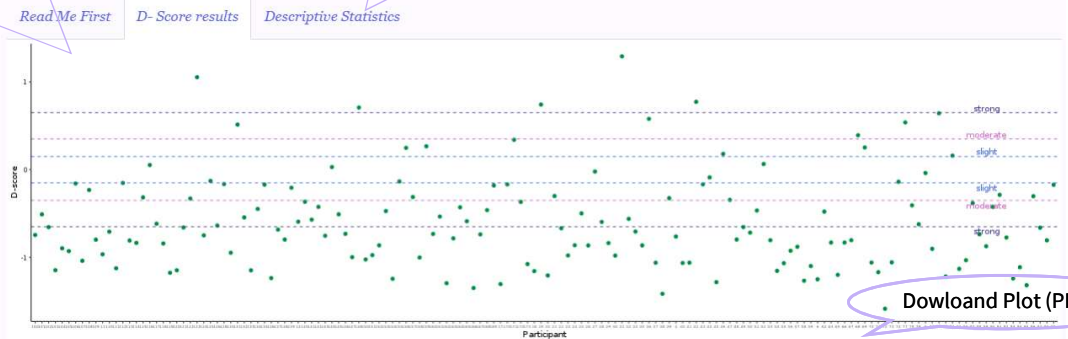
Read Me First **D-Score results** **Descriptive Statistics**

Average response times

	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
1	6.00	643.00	643.00	1046.36	1032.00	7385.00
2	176.00	519.00	543.00	771.19	884.50	9292.00
3	6.00	607.00	779.00	995.34	1124.00	7385.00
4	121.00	567.00	699.00	871.64	980.00	9292.00
5	6.00	692.25	934.00	1161.48	1387.00	7385.00
6	practice_Happings	121.00	567.75	682.00	889.32	980.00
7	test_Happings	131.00	627.00	804.00	988.48	1312.00
8	test_Happings	276.00	519.00	625.00	753.22	888.00

Accuracy

	Proportion correct
1	0.93
2	0.97
3	0.95
4	0.95
5	0.93
6	practice_Happings
7	test_Happings
8	0.97



Points
 Click on a point

Area
 Highlight graph area

Summary

d_practice	d_test	dscore
Min. : -1.5896	Min. : -1.5878	Min. : -1.5856
1st Qu.: -1.0585	1st Qu.: -0.9694	1st Qu.: -0.9842
Median : -0.6951	Median : -0.6754	Median : -0.7125
Mean : -0.6189	Mean : -0.5670	Mean : -0.5930
3rd Qu.: -0.3296	3rd Qu.: -0.2441	3rd Qu.: -0.3098
Max. : 1.2602	Max. : 1.3225	Max. : 1.2914

Practice - Test reliability
 [1] 0.68

of trials > 10,000ms

Trials > 10,000ms
 [1] 3

Trials < 400ms
 [1] "Not expected for this"

trials < 400ms (according to the algorithm)

Correlation between Dpractice and Dtest

Highlight a graph area:

You'll get the participants' IDs and D-scores

Area

participant	dscore
1	123 1.0540561
2	148 0.7079581
3	19 0.7420267
4	31 1.2913529
5	42 0.7729035

Select a point in the graph:

You'll get the participant's ID and D-score

Points

participant	dscore
1	123 1.054056

Save As

File name: **ShinyAPPDscore3.csv**

Save as type: **Microsoft Excel Comma Separated Values (*.csv)**



<http://fisppa.psy.unipd.it/DscoreApp/>

<https://github.com/OttaviaE/DscoreApp>
 (Source Code)