

**ReadMe-document for  
Dataset for: The official soundtrack to “Five shades of grey”: Generalization in multimodal  
distractor-based retrieval**

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**Data for Experiment 1**

- Experiment1\_FTDBL1\_AllRawData.txt or .csv
  - All raw data, including practice trials; please note that practice trials were excluded from analysis (see paper)
- Experiment1\_FTDBL1\_ForAnalysis.txt or .csv
  - Data for analysis (i.e., without practice trials; columns irrelevant for analysis were filtered out)
  - Column coding see below
- Experiment1\_FTDBL1\_Aggregated\_200\_1.5.txt or .csv
  - Aggregated data after applying cut-off criteria as reported in the paper
  - Column coding see below
- Experiment1\_FTDBL1\_Aggregated\_Target\_200\_1.5.txt or .csv
  - Aggregated data after applying cut-off criteria and sorting target vs. response repetition as reported in the paper
  - Column coding see below

**Data for Experiment 2**

- Experiment2\_FTDBL2\_AllRawData.txt or .csv
  - All raw data, including initial presentation of tones, practice trials, and catch trials; please note that practice and catch trials were excluded from analysis (see paper)
- Experiment2\_FTDBL2\_ForAnalysis.txt or .csv
  - Data for analysis (i.e., without initial presentation of tones, practice trials, and catch trials; columns irrelevant for analysis were filtered out)
  - Column coding see below
- Experiment2\_FTDBL2\_Aggregated\_200\_1.5.txt or .csv
  - Aggregated data after applying cut-off criteria as reported in the paper
  - Column coding see below
- Experiment2\_FTDBL2\_Aggregated\_Target\_200\_1.5.txt or .csv
  - Aggregated data after applying cut-off criteria and sorting target vs. response repetition as reported in the paper
  - Column coding see below

**Comparison between Experiments**

- FTDBL1\_FTDBL2\_comparison.txt or .csv

- calculated binding effects of both experiments (see paper)
- binding effects were computed with the SPSS-Syntax found under “Code for: The official soundtrack to “Five shades of grey”: Generalization in multimodal distractor-based retrieval”

## **Overview**

### **1. Column coding of Experiment1\_FTDBL1\_ForAnalysis.txt or .csv and Experiment2\_FTDBL2\_ForAnalysis.txt or .csv**

#### **1.1 Column coding of Experiment1\_FTDBL1\_ForAnalysis.txt or .csv**

#### **1.2 Column coding of Experiment2\_FTDBL2\_ForAnalysis.txt or .csv**

### **2. Column coding of the aggregated data files Experiment1\_FTDBL1\_Aggregated\_200\_1.5.txt or .csv and Experiment2\_FTDBL2\_Aggregated\_200\_1.5.txt or .csv**

### **3. Column coding of the aggregated data files (including the target factor) Experiment1\_FTDBL1\_Aggregated\_Target\_200\_1.5.txt or .csv and Experiment2\_FTDBL2\_Aggregated\_Target\_200\_1.5.txt or .csv**

### **4. Column coding for FTDBL1\_FTDBL2\_comparison.txt or .csv**

### **5. Additional information**

### **1. Column coding of Experiment1\_FTDBL1\_ForAnalysis.txt or .csv and Experiment2\_FTDBL2\_ForAnalysis.txt or .csv**

Note that in the raw data and analysis file, the labelling of conditions is DR, DC1, DC2, DC3, and DC4 (for RR and RC, respectively). This resembles DRexact, DR1, DR2, DR3, and DC (for RR and RC, respectively), as reported in the paper.

#### **1.1 Column coding of Experiment1\_FTDBL1\_ForAnalysis.txt or .csv:**

Age:	numeric values, age in years
Difference:	Distractor difference: Exact (0), 1-step (1), 2-steps (2), 3-steps (3), 4-steps (4) [needed to categorize DR/DC trials of PPRel]
ExperimentName:	FTDBL1
Handedness:	left or right

PPRel: Prime-Probe Relation: Response Repetition, Distractor Repetition (RRDR); Response Repetition, Distractor Change (RRDC); Response Change, Distractor Repetition (RCDR); Response Change, Distractor Change (R CDC) [see above comment regarding DC trials; DR/DC in combination with above variable “difference” results in the distractor deviations]

Prime: Triangle (tr.bmp), Cross (x.bmp), diamond (di.bmp), square (sq.bmp)

Prime.ACC: Prime Accuracy: Correct (1) or Incorrect (0)

Prime.RT: Prime Reaction Time in milliseconds

PrimeDis: Prime-Distractor: 400, 420, 440, 460, 480 Hz

Probe: Triangle (tr.bmp), Cross (x.bmp), diamond (di.bmp), square (sq.bmp)

Probe.ACC: Probe Accuracy: Correct (1) or Incorrect (0)

Probe.RT: Probe Reaction Time in milliseconds

ProbeDis: Probe-Distractor: 400, 420, 440, 460, 480 Hz

Sex: female or male

Subject: numeric values (1-31)

Trial: numeric values (number of trials; 1-600)

### 1.2 Column coding of Experiment2\_FTDBL2\_ForAnalysis.txt or .csv:

As for Experiment1\_FTDBL1\_ForAnalysis.txt or .csv, except for the following:

ExperimentName: FTDBL2

Prime: Sounds/400.wav, Sounds/420.wav, Sounds/600.wav, Sounds/620.wav

PrimeDis: Prime-Distractor: Images/L10ci.bmp, Images/L30ci.bmp, Images/L50ci.bmp, Images/L70ci.bmp, Images/L90ci.bmp

Probe: Sounds/400.wav, Sounds/420.wav, Sounds/600.wav, Sounds/620.wav

ProbeDis: Probe-Distractor: Images/L10ci.bmp, Images/L30ci.bmp, Images/L50ci.bmp, Images/L70ci.bmp, Images/L90ci.bmp

Subject: numeric values (1-32)

Trial: numeric values (number of trials; 1-640); the 40 “missing” trials are catch trials excluded from analysis (see paper)

**2. Column coding of the aggregated data files Experiment1\_FTDBL1\_Aggregated\_200\_1.5.txt or .csv and Experiment2\_FTDBL2\_Aggregated\_200\_1.5.txt or .csv:**

subject:	numeric values - number of subject
age:	numeric values - age in years
sex:	coded as 0 (female) and 1 (male)
rrdr_count:	Reaction times: Count of trials with Response Repetition, Exact Distractor Repetition that meet the inclusion criteria for reaction times
rrdr_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition, Exact Distractor Repetition
rrdc1_count:	Reaction times: Count of trials with Response Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation) that meet the inclusion criteria for reaction times
rrdc1_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
rrdc2_count:	Reaction times: Count of trials with Response Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation) that meet the inclusion criteria for reaction times
rrdc2_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
rrdc3_count:	Reaction times: Count of trials with Response Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation) that meet the inclusion criteria for reaction times
rrdc3_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
rrdc4_count:	Reaction times: Count of trials with Response Repetition, Distractor Change 4 (resembling distractor change) that meet the inclusion criteria for reaction times
rrdc4_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition, Distractor Change 4 (resembling distractor change)
rcdr_count:	Reaction times: Count of trials with Response Change, Exact Distractor Repetition that meet the inclusion criteria for reaction times
rcdr_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Change, Exact Distractor Repetition

rcdc1\_count: Reaction times: Count of trials with Response Change, Distractor Change 1 (resembling distractor repetition with 1-step deviation) that meet the inclusion criteria for reaction times

rcdc1\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Change, Distractor Change 1 (resembling distractor repetition with 1-step deviation)

rcdc2\_count: Reaction times: Count of trials with Response Change, Distractor Change 2 (resembling distractor repetition with 2-steps deviation) that meet the inclusion criteria for reaction times

rcdc2\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Change, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)

rcdc3\_count: Reaction times: Count of trials with Response Change, Distractor Change 3 (resembling distractor repetition with 3-steps deviation) that meet the inclusion criteria for reaction times

rcdc3\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Change, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)

rcdc4\_count: Reaction times: Count of trials with Response Change, Distractor Change 4 (resembling distractor change) that meet the inclusion criteria for reaction times

rcdc4\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Change, Distractor Change 4 (resembling distractor change)

  

er\_rrdr: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition, Exact Distractor Repetition

er\_rrdc1: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)

er\_rrdc2: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)

er\_rrdc3: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)

er\_rrdc4: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 4 (resembling distractor change)

er_rcdr:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Change, Exact Distractor Repetition
er_rcdc1:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
er_rcdc2:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
er_rcdc3:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
er_rcdc4:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 4 (resembling distractor change)
c_er_rrdr:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition, Exact Distractor Repetition
c_er_rrdc1:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
c_er_rrdc2:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
c_er_rrdc3:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
c_er_rrdc4:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition, Distractor Change 4 (resembling distractor change)
c_er_rcdr:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Change, Exact Distractor Repetition
c_er_rcdc1:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
c_er_rcdc2:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
c_er_rcdc3:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
c_er_rcdc4:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Change, Distractor Change 4 (resembling distractor change)

### 3. Column coding of the aggregated data files (including the target factor)

**Experiment1\_FTDBL1\_Aggregated\_Target\_200\_1.5.txt or .csv and**

**Experiment2\_FTDBL2\_Aggregated\_Target\_200\_1.5.txt or .csv:**

Columns as above, except for response repetitions: These are divided in response repetition with target repetition (Target Repetition Response Repetition, trrr) and response repetition without target repetition (Response Repetition, Response Repetition, rrrr). RC trials as above.

trrrdr_count:	Reaction times: Count of trials with Response Repetition with Target Repetition, Exact Distractor Repetition that meet the inclusion criteria for reaction times
trrrdr_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition with Target Repetition, Exact Distractor Repetition
trrrdc1_count:	Reaction times: Count of trials with Response Repetition with Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation) that meet the inclusion criteria for reaction times
trrrdc1_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
trrrdc2_count:	Reaction times: Count of trials with Response Repetition with Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation) that meet the inclusion criteria for reaction times
trrrdc2_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
trrrdc3_count:	Reaction times: Count of trials with Response Repetition with Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation) that meet the inclusion criteria for reaction times
trrrdc3_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
trrrdc4_count:	Reaction times: Count of trials with Response Repetition with Target Repetition, Distractor Change 4 (resembling distractor change) that meet the inclusion criteria for reaction times
trrrdc4_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 4 (resembling distractor change)
rrrrdr_count:	Reaction times: Count of trials with Response Repetition without Target Repetition, Exact Distractor Repetition that meet the inclusion criteria for reaction times
rrrrdr_sum:	Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition without Target Repetition, Exact Distractor Repetition

rrrrdc1\_count: Reaction times: Count of trials with Response Repetition without Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation) that meet the inclusion criteria for reaction times

rrrrdc1\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)

rrrrdc2\_count: Reaction times: Count of trials with Response Repetition without Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation) that meet the inclusion criteria for reaction times

rrrrdc2\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)

rrrrdc3\_count: Reaction times: Count of trials with Response Repetition without Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation) that meet the inclusion criteria for reaction times

rrrrdc3\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)

rrrrdc4\_count: Reaction times: Count of trials with Response Repetition without Target Repetition, Distractor Change 4 (resembling distractor change) that meet the inclusion criteria for reaction times

rrrrdc4\_sum: Reaction times: Sum of reaction times that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 4 (resembling distractor change)

er\_trrrdr: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Exact Distractor Repetition

er\_trrrdc1: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)

er\_trrrdc2: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)

er\_trrrdc3: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)

er\_trrrdc4: Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 4 (resembling distractor change)

er_rrrrdr:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Exact Distractor Repetition
er_rrrrdc1:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
er_rrrrdc2:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
er_rrrrdc3:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
er_rrrrdc4:	Error Rates, Prime Correct, Probe Incorrect: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 4 (resembling distractor change)
c_er_trrrdr:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Exact Distractor Repetition
c_er_trrrdc1:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
c_er_trrrdc2:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)
c_er_trrrdc3:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
c_er_trrrdc4:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition with Target Repetition, Distractor Change 4 (resembling distractor change)
c_er_rrrrdr:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Exact Distractor Repetition
c_er_rrrrdc1:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 1 (resembling distractor repetition with 1-step deviation)
c_er_rrrrdc2:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 2 (resembling distractor repetition with 2-steps deviation)

c_er_rrrdc3:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 3 (resembling distractor repetition with 3-steps deviation)
c_er_rrrdc4:	Error Rates, Prime Correct: Count of trials that meet the inclusion criteria with Response Repetition without Target Repetition, Distractor Change 4 (resembling distractor change)

#### 4. Column coding for FTDBL1\_FTDBL2\_comparison.txt or .csv:

Binding effects were computed with the Syntax available under “Code for analysis”

Subject_original:	numeric values – original number of subject in each experiment (Experiment 1: N=31; Experiment 2: N=32)
Experiment:	1 = Experiment 1 (FTBDL1); 2 = Experiment 2 (FTDBL2)
Subject_continuous:	numeric values – continuous number of subjects (1-63) over the experiments
RT_DRB_exact:	Reaction times: Binding effect for exact distractor repetition
RT_DRB_oneStep:	Reaction times: Binding effect for distractor repetition with 1-step deviation
RT_DRB_twoSteps:	Reaction times: Binding effect for distractor repetition with 2-steps deviation
RT_DRB_threeSteps:	Reaction times: Binding effect for distractor repetition with 3-steps deviation
ER_DRB_exact:	Error rates: Binding effect for exact distractor repetition
ER_DRB_oneStep:	Error rates: Binding effect for distractor repetition with 1-step deviation
ER_DRB_twoSteps:	Error rates: Binding effect for distractor repetition with 2-steps deviation
ER_DRB_threeSteps:	Error rates: Binding effect for distractor repetition with 3-steps deviation

#### 5. Additional information

When looking at the “DataFile.Basename”-column in the raw data of Experiment 2 (i.e., in Experiment2\_FTDBL2\_AllRawData.txt or .csv), it can be seen that the subject number 16 had been accidentally assigned to two participants in a row, and the subject number 23 had been accidentally assigned to two participants in a row (and that subject numbers 15 and 24 seem to be missing). The correct subject numbers have been assigned in the “Subject”-column manually.

Participants 6, 8, and 28 in Experiment 2 (FTDBL2) had less than 50% accuracy in catch trials (prime and probe catch trials combined). However, these participants were included in the analysis (see paper).

Participant 22 in Experiment 2 had previously participated in Experiment 1 (see paper). This resembles Subject\_continuous 53 in FTDBL1\_FTDBL2\_comparison.txt or .csv. However, this participant was included in the analysis (see paper).