

Note: There are no markers in the practice trials in each task. (!!!)

1. EEG-marker for the shifting tasks

Odd-even/less-more task

Open Matlab = 113

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 6

End of the experimental trials = 7

Onset of:

Fixation cross less more repeat = 31

Inter-stimulus-interval less more repeat = 41

Probe stimulus less more repeat = 51

Fixation cross less more switch = 32

Inter-stimulus-interval less more switch = 42

Probe stimulus less more switch = 52

Fixation cross odd even repeat = 33

Inter-stimulus-interval odd even repeat = 43

Probe stimulus odd even repeat = 53

Fixation cross odd even switch = 34

Inter-stimulus-interval odd even switch = 44

Probe stimulus odd even switch = 54

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Number-letter task

Open Matlab = 116

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 12

End of the experimental trials = 13

Onset of:

Fixation cross less more repeat = 31

Inter-stimulus-interval less more repeat = 41

Probe stimulus less more repeat = 51

Fixation cross less more switch = 32

Inter-stimulus-interval less more switch = 42

Probe stimulus less more switch = 52

Fixation cross vowel consonant repeat = 33

Inter-stimulus-interval vowel consonant repeat = 43

Probe stimulus vowel consonant repeat = 53

Fixation cross vowel consonant switch = 34

Inter-stimulus-interval vowel consonant switch = 44

Probe stimulus vowel consonant switch = 54

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Global-local task

Open Matlab = 117

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 14

End of the experimental trials = 15

Onset of:

Fixation cross global repeat = 31

Inter-stimulus-interval global repeat = 41

Probe stimulus global repeat = 51

Fixation cross global switch = 32

Inter-stimulus-interval global switch = 42

Probe stimulus global switch = 52

Fixation cross local repeat = 33

Inter-stimulus-interval local repeat = 43

Probe stimulus local repeat = 53

Fixation cross local switch = 34

Inter-stimulus-interval local switch = 44

Probe stimulus local switch = 54

Inter-trial-interval = 90

Correct response with the left hand = 150

Correct response with the right hand = 160

Incorrect response with the left hand = 250

Incorrect response with the right hand = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

2. EEG-marker for the updating tasks

Running span task

Open Matlab = 121

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 22

End of the experimental trials = 23

Memory Set: 3

Onset of:

0 distractor stimuli:

Fixation cross no-match condition = 31

Inter-stimulus-interval no-match condition = 41

Memory set item of the no-match condition = 61

Cue before the retrieval no-match condition = 71

Retrieval (probe) stimulus no-match condition = 51

Fixation cross match condition = 32

Inter-stimulus-interval match condition = 42

Memory set item of the match condition = 62

Cue before the retrieval match condition = 72

Retrieval (probe) stimulus match condition = 52

1 distractor stimulus:

Fixation cross no-match condition = 33

Inter-stimulus-interval no-match condition = 43

Memory set item of the no-match condition = 63

Cue before the retrieval no-match condition = 73

Retrieval (probe) stimulus no-match condition = 53

Fixation cross match condition = 34

Inter-stimulus-interval match condition = 44

Memory set item of the match condition = 64

Cue before the retrieval match condition = 74

Retrieval (probe) stimulus match condition = 54

2 distractor stimuli:

Fixation cross no-match condition = 35

Inter-stimulus-interval no-match condition = 45

Memory set item of the no-match condition = 65

Cue before the retrieval no-match condition = 75

Retrieval (probe) stimulus no-match condition = 55

Fixation cross match condition = 36

Inter-stimulus-interval match condition = 46

Memory set item of the match condition = 66

Cue before the retrieval match condition = 76

Retrieval (probe) stimulus match condition = 56

3 distractor stimuli:

Fixation cross no-match condition = 37

Inter-stimulus-interval no-match condition = 47

Memory set item of the no-match condition = 67

Cue before the retrieval no-match condition = 77

Retrieval (probe) stimulus no-match condition = 57

Fixation cross match condition = 38

Inter-stimulus-interval match condition = 48

Memory set item of the match condition = 68

Cue before the retrieval match condition = 78

Retrieval (probe) stimulus match condition = 58

Memory Set: 5

Onset of:

0 distractor stimuli:

Fixation cross no-match condition = 131

Inter-stimulus-interval no-match condition = 141

Memory set item of the no-match condition = 161

Cue before the retrieval no-match condition = 171

Retrieval (probe) stimulus no-match condition = 151

Fixation cross match condition = 132

Inter-stimulus-interval match condition = 142

Memory set item of the match condition = 162

Cue before the retrieval match condition = 172

Retrieval (probe) stimulus match condition = 152

1 distractor stimulus:

Fixation cross no-match condition = 133

Inter-stimulus-interval no-match condition = 143

Memory set item of the no-match condition = 163

Cue before the retrieval no-match condition = 173

Retrieval (probe) stimulus no-match condition = 153

Fixation cross match condition = 134
Inter-stimulus-interval match condition = 144
Memory set item of the match condition = 164
Cue before the retrieval match condition = 174
Retrieval (probe) stimulus match condition = 154

2 distractor stimuli:

Fixation cross no-match condition = 135
Inter-stimulus-interval no-match condition = 145
Memory set item of the no-match condition = 165
Cue before the retrieval no-match condition = 175
Retrieval (probe) stimulus no-match condition = 155

Fixation cross match condition = 136
Inter-stimulus-interval match condition = 146
Memory set item of the match condition = 166
Cue before the retrieval match condition = 176
Retrieval (probe) stimulus match condition = 156

3 distractor stimuli:

Fixation cross no-match condition = 137
Inter-stimulus-interval no-match condition = 147
Memory set item of the no-match condition = 167
Cue before the retrieval no-match condition = 177
Retrieval (probe) stimulus no-match condition = 157

Fixation cross match condition = 138
Inter-stimulus-interval match condition = 148
Memory set item of the match condition = 168
Cue before the retrieval match condition = 178
Retrieval (probe) stimulus match condition = 158

Inter-trial-interval memory set 3 = 90
Inter-trial-interval memory set 5 = 190

Correct response (response key: "D") = 230
Correct response (response key: "L") = 240

Incorrect response (response key: "D") = 250
Incorrect response (response key: "L") = 255
Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number
End of an experimental block = 200 + block number

Keep track task

Open Matlab = 122

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 24

End of the experimental trials = 25

First block (memory set 1)

Onset of:

Fixation cross before the relevant category was given no-match and no-updating cond. = 31

Hint for the relevant category no-match and no-updating cond. = 81

Fixation cross before the memory set starts no-match and no-updating cond. = 131

Inter-stimulus-interval no-match no-updating cond. = 41

Item of the memory set no-match no-updating cond. = 61

Cue before the retrieval no-match no-updating = 71

Retrieval (probe) stimulus no-match no-updating = 51

Fixation cross before the relevant category was given no-match and updating cond. = 32

Hint for the relevant category no-match and updating cond. = 82

Fixation cross before the memory set starts no-match and updating cond. = 132

Inter-stimulus-interval no-match updating cond. = 42

Item of the memory set no-match updating cond. = 62

Cue before the retrieval no-match updating = 72

Retrieval (probe) stimulus no-match updating = 52

Fixation cross before the relevant category was given match and no-updating cond. = 33

Hint for the relevant category match and no-updating cond. = 83

Fixation cross before the memory set starts match and no-updating cond. = 133

Inter-stimulus-interval match no-updating cond. = 43

Item of the memory set match no-updating cond. = 63

Cue before the retrieval match no-updating = 73

Retrieval (probe) stimulus match no-updating = 53

Fixation cross before the relevant category was given match and updating cond. = 34

Hint for the relevant category match and updating cond. = 84

Fixation cross before the memory set starts match and updating cond. = 134

Inter-stimulus-interval match updating cond. = 44

Item of the memory set match updating cond. = 64

Cue before the retrieval match updating = 74

Retrieval (probe) stimulus match updating = 54

Second block (memory set 3)

Fixation cross before the relevant category was given no-match and no-updating cond. = 35

Hint for the relevant category no-match and no-updating cond. = 85

Fixation cross before the memory set starts no-match and no-updating cond. = 135

Inter-stimulus-interval no-match no-updating cond. = 45
Item of the memory set no-match no-updating cond. = 65
Cue before the retrieval no-match no-updating = 75
Retrieval (probe) stimulus no-match no-updating = 55

Fixation cross before the relevant category was given no-match and updating cond. = 36
Hint for the relevant category no-match and updating cond. = 86
Fixation cross before the memory set starts no-match and updating cond. = 136
Inter-stimulus-interval no-match updating cond. = 46
Item of the memory set no-match updating cond. = 66
Cue before the retrieval no-match updating = 76
Retrieval (probe) stimulus no-match updating = 56

Fixation cross before the relevant category was given match and no-updating cond. = 37
Hint for the relevant category match and no-updating cond. = 87
Fixation cross before the memory set starts match and no-updating cond. = 137
Inter-stimulus-interval match no-updating cond. = 47
Item of the memory set match no-updating cond. = 67
Cue before the retrieval match no-updating = 77
Retrieval (probe) stimulus match no-updating = 57

Fixation cross before the relevant category was given match and updating cond. = 38
Hint for the relevant category match and updating cond. = 88
Fixation cross before the memory set starts match and updating cond. = 138
Inter-stimulus-interval match updating cond. = 48
Item of the memory set match updating cond. = 68
Cue before the retrieval match updating = 78
Retrieval (probe) stimulus match updating = 58

Inter-trial-interval = 90

Correct response (response key: "D") = 150
Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250
Incorrect response (response key: "L") = 255
Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number
End of an experimental block = 200 + block number

N-back task

Open Matlab = 114

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 8

End of the experimental trials = 9

Onset of the fixation cross at the beginning of each block = 30

First block = 0-back condition:

Onset of:

Inter-stimulus-interval match condition = 41

Probe stimulus match condition = 51

Inter-stimulus-interval no-match condition = 42

Probe stimulus no-match condition = 52

Second block = 1-back condition:

Onset of:

Inter-stimulus-interval match condition = 43

Probe stimulus match condition = 53

Inter-stimulus-interval no-match condition = 44

Probe stimulus no-match condition = 54

Third block = 2-back condition:

Onset of:

Inter-stimulus-interval match condition = 45

Probe stimulus match condition = 55

Inter-stimulus-interval no-match condition = 46

Probe stimulus no-match condition = 56

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = $100 + \text{block number}$

End of an experimental block = $200 + \text{block number}$

3. EEG-marker for the inhibition tasks

Stroop task

Open Matlab = 115

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 10

End of the experimental trials = 11

Onset of:

Fixation cross congruent condition = 31

Inter-stimulus-interval congruent condition = 41

Probe stimulus congruent condition = 51

Fixation cross incongruent condition = 32

Inter-stimulus-interval incongruent condition = 42

Probe stimulus incongruent condition = 52

Inter-trial-interval = 90

Correct response with the left hand = 150

Correct response with the right hand = 160

Incorrect response with the left hand = 250

Incorrect response with the right hand = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Negative priming task

Open Matlab = 119

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 18

End of the experimental trials = 19

Onset of:

Fixation cross no-priming condition = 31

Inter-stimulus-interval no-priming condition = 41

Probe stimulus no-priming condition = 51

Fixation cross priming condition = 32

Inter-stimulus-interval priming condition = 42

Probe stimulus priming condition = 52

Inter-trial-interval = 90

Correct response with the left hand = 150

Correct response with the right hand = 160

Incorrect response with the left hand = 250

Incorrect response with the right hand = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Arrow flanker task

Open Matlab = 111

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 2

End of the experimental trials = 2

Onset of:

Fixation cross congruent condition = 31

Inter-stimulus-interval congruent condition = 41

Probe stimulus congruent condition = 51

Inter-trial-interval congruent = 91

Fixation cross incongruent condition = 32

Inter-stimulus-interval incongruent condition = 42

Probe stimulus incongruent condition = 52

Inter-trial-interval congruent = 92

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

4. EEG-marker for the elementary cognitive tasks

Sternberg task

Open Matlab = 118

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 16

End of the experimental trials = 17

Onset of:

Fixation cross no-match condition = 31

Inter-stimulus-interval no-match condition = 41

Item in the memory set of the no-match condition = 61

Cue before the retrieval no-match condition = 71

Retrieval (probe) stimulus no-match condition = 51

Fixation cross match condition = 32

Inter-stimulus-interval match condition = 42

Item in the memory set of the match condition = 62

Cue before the retrieval match condition = 72

Retrieval (probe) stimulus match condition = 52

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Choice RT task

Open Matlab = 112

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 4

End of the experimental trials = 5

Onset of:

Fixation cross left = 34

Probe stimulus left = 54

Inter-trial-interval left = 94

Fixation cross right = 35

Probe stimulus right = 55

Inter-trial-interval right = 95

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number

Posner task

Open Matlab = 120

Start of the practice trials = 211

End of the practice trials = 212

Start of the experimental trials = 20

End of the experimental trials = 21

Onset of:

Fixation cross physical identical condition = 31

Probe stimulus physical identical condition = 51

Fixation cross name identical condition = 32

Probe stimulus name identical condition = 52

Note: Both the physical- and name identical conditions count as name identical

Fixation cross no-identical target = 33

Probe stimulus no-identical target = 53

Inter-trial-interval = 90

Correct response (response key: "D") = 150

Correct response (response key: "L") = 160

Incorrect response (response key: "D") = 250

Incorrect response (response key: "L") = 255

Incorrect response other key = 251

No response was given = 222

Start of an experimental block = 100 + block number

End of an experimental block = 200 + block number