Exp. 1, 2, 4

General information on terminology:

Temporal input order: sequential presentation of memory digits/probe digits from 1 to n items

Spatial input position: Frames are numbered in reading direction (left to right, up to down) from 1 to n see Figure 1 in Lange et al., 2011; input: position of the memory digits/probe digits

Temporal output order: Sequential presentation of the probe items from 1 to n

Spatial output position: Frame position of the probe from 1 to n

General information on differences between Expts:

NOTE: Coding of temporal order and spatial position of memory digits (study items) and probe digits (recognition items) are different in Exp. 2 from Exp. 1 & 4. The related variables are outnr, mem\_dig, prb\_dig, out\_pos, in\_pos, in\_nr;

id subject id

Group blocked design latin square, 12 subgroups of participants with different serial orders of condition (1..4) and set size (3..5);

sex sex (1=female; 2=male)

age age

Session number of session (1..2)

Memo memory task = 1, magnitude task = 0

example example task = 1, no example task (experimental trials) = 0; to avoid confusion, example trials are already deleted in this data set

Con conditions: 1 = forward, 2 = fixed irregular, 3 = backward, 4 = random

Nblock Number of block, with 12 blocks per session (1..12);

N set size (3..5)

Trial counter for the trial number (n=3: 1..12, n=4: 1..15, n=5: 1..20)

outnr Exp.1&4: temporal output order of the probed item; EXAMPLE outnr=1; the RT in this row relates to the first probe (temporal output order). When relating this counter to the memory digits, it is also the temporal input order and spatial input position of the memory digit in this row;

Exp.2: temporal output order of the probed item; EXAMPLE outnr=1; The RT in this row relates to the first probe (temporal output order), which was presented in the first frame (spatial output position);

Trialnr maximum number of trials for this n (12, 15, 20)

Out\_allnr counter of output reactions (1..60 for experimental trials per block per session)

Matchkey codes key assignment (self-selected): 1 = left key denotes “yes”; 2 = right key denotes “yes”

Pressedkey codes pressed key: 1 = left, 2 = right

Corr 1=correct answer, 0 = wrong answer

Mem\_dig to-be-remembered digit, digits are listed here with temporal presentation order across rows (same as in outnr);

(not coded for magnitude judgment task)

Prb\_dig digit that is probed; there is no direct relation between the prb\_dig and mem\_dig in the same row (besides in the forward condition).

Out\_pos Exp. 1&4: This counter relates to the dependent variable, e.g., to accuracy/RT. Example: out\_pos=2 means, that the RT in this row is related to the second learned item (temporal input order =2), that was learned at the second frame position (spatial input position=2), and was probed at the second frame position (spatial output position=2) (Exp. 2 has two other coding variables instead)

In\_pos Exp.2: spatial input position of the memory digit, e.g., in the backward condition, for the first row belonging to this trial, mem\_dig was presented first but at the last frame position. This is coded as in\_pos=5 for n=5 and outnr=1 (not coded in Exp. 1&4).

In\_nr Exp. 2: temporal input order of the probed item, e.g., in\_nr=4 the RT in this row relates to the item learned fourth. (not coded in Exp. 1&4; not coded for memo=0)

Pre\_RT Time to initiate the trial

RT RT for probe recognition/magnitude judgement task (raw data)

Pos classifies the positive probes (the probe in the same row): 1 = positive probe, 0 = negative probe/ 1 = larger 5, 0 = smaller five

Neg classifies the negative probes (the probe in the same row): 0 = positive probe, 1 = intrusion negative probe (probe was in the memory list of this trial at a different position), 2 = extra-list negative probe (probe was not in the memory list of this trial); not coded for magnitude judgment task

Percentages of all items (50% are not coded because memo = 0):

Exp.1: correct=25%, intrusion=8.3%, extra-list=16.7%

Exp.2: correct=24.5%, intrusion=8.5%, extra-list=17%; slight deviations from Exp. 1 in the forward condition, 0.7% of the probes were selected randomly by mistake in the procedure;

Exp.4: correct = 25%, intrusion = 12.5%, extra-list = 12.5 %; deviation due to different balancing schema

RT\_r RTs recoded: Set wrong answers to missing; Set outliers to missing

Exp Number of Experiment in Lange et al (Exp. 1, 2, 4)

---------------------

Outlier analysis

RT\_mean Means based on individual RTs for memo-con-pos;

RT\_sd SDs based on individual RTs for memo-con-pos;

Cut cut=RT\_mean + 3\*RT\_sd; RTs > cut or < 100 are set to missing in RT\_r