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Charting the trajectory of forgetting: Insights from a working memory period paradigm

Memory & Cognition

Data variables and explanations

Operationperiodcardorder (original SPSS file (.sav) and comma-separated plain file (.csv))

bas_n Raw score from British Abilities Scales (Number Skills task)
zbas_n z-score conversion of the bas_n score
bas_v Raw score from British Abilities Scales (Word Reading task)
zbas_v z-score conversion of the bas_v score
bas_comb Average of the two BAS scores
bas_comp Composite of the two BAS scores from averaging z-scores
age_mnths Age of participant in completed months
age_grp Age group defined by school class year group (3 - Year 3; 4 - Year 4; 6 - Year 6)
s1p_len First period administration (ie session1), recall expressed as the maximum length / level achieved, with partial credit at terminal level
Zs1p_len z score conversion of the s1p_len variable
s2p_len Second period administration (ie session 2), recall expressed as the maximum length / level achieved, with partial credit at terminal level
Zs2p_len z score conversion of the s2p_len variable
comp_pdl Composite score from the two period administrations measuring period length (ie Zs1p_len and Zs2p_len)
s1per First period administration: Number of correctly recalled items from correct sequences (thus, scores in multiples of 4)
zs1per z score conversion of s1per
s2per Second period administration: Number of correctly recalled items from correct sequences (thus, scores in multiples of 4)
zs2per z score conversion of s2per
comp_pd Composite score from the two period administrations (ie zs1per and zs2per)
crd_ord1 Text string describing sequence of cards (S - short; L - long; V - variable) for first period administration
crd_ord2 Text string describing sequence of cards (S - short; L - long; V - variable) for second period administration (mirror image of crd_ord1)
ord_s1 Sequence of cards defined by numeric order group (group 1 - 8) for first period administration
ord_s2 Sequence of cards defined by numeric order group (group 1 - 8) for second period administration (mirror image of ord_s1)
sl_seq Recoding of ord_s1 to indicate "1" - short first, and "2" long first

sequences

s1_lv1 First period administration, first set of (3) trials, the number of correct sequence recalls (max=3, min=0)

s1_lv2 First period administration, second set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s1_lv3 First period administration, third set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s1_lv4 First period administration, fourth set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s1_lv5 First period administration, fifth set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s1_lv6 First period administration, sixth set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s1_lv7 First period administration, seventh set of (3) trials, the number of correct sequence recalls (max=3, min=0). Nb. value of "0" even if set is not administered

s2_lv1 - s2_lv7 Second period administration, for each set of trials as above, the number of correct sequence recalls

short_co Number of correct recalls from "short" processing events (combining across period administrations)

long_co Number of correct recalls from "long" processing events (combining across period administrations)

var1_co Number of correct recalls from the first presented variable processing events (combining across period administrations)

var2_co Number of correct recalls from the second presented variable processing events (combining across period administrations)

total_rec Total number of correct recalls (sum of short_co, long_co, var1_co and var2_co)

pos1_c total number of correct recalls occurring at position 1

pos2_c total number of correct recalls occurring at position 2

pos3_c total number of correct recalls occurring at position 3

pos4_c total number of correct recalls occurring at position 4

COE Card Order Effect, either "1" when "short" events appeared earlier in first period administration, "2" when "long" events appeared earlier in first period administration

varSfirst The period score when the "short" processing even appeared before the "long" in first period administration, otherwise blank

varLfirst The period score when the "long" processing even appeared before the "short" in first period administration, otherwise blank

change The difference between first and second period administration in period score ($s1_{per} - s2_{per}$)

s_early The difference between short early and long early sequences (the change score as a function of card sequence) based on s1per and s2per values

s_lcorr The difference between short early and long early sequences (the change score as a function of card sequence) based on the number of correct recalls

s_l_len The difference between short early and long early sequences (the change score as a function of card sequence) based on s1p_len and s2p_len variables

s1_CRSP1 First period administration, the proportion of correctly recalled items at serial position 1

s1_CRSP2 First period administration, the proportion of correctly recalled items at serial position 2

s1_CRSP3 First period administration, the proportion of correctly recalled items at serial position 3

s1_CRSP4 First period administration, the proportion of correctly recalled items at serial position 4

s1_RTp1 First period administration, the mean response time to the arithmetic problem, at serial position 1

s1_RTp2 First period administration, the mean response time to the arithmetic problem, at serial position 2

s1_RTp3 First period administration, the mean response time to the arithmetic problem, at serial position 3

s1_RTp4 First period administration, the mean response time to the arithmetic problem, at serial position 4

s2_CRSP1 — s2_CRSP4 Second period administration, as above the proportion of correctly recalled items at serial position 1-4

s2_RTp1 - s2_RTp4 Second period administration, as above the mean response time to the arithmetic problem, at serial position 1-4

comb_RT Average of the response times to arithmetic problems, combining each period administration and serial position

s1_combRT First period administration, average of the response times to arithmetic problems

s2_combRT Second period administration, average of the response times to arithmetic problems

Datacorpus Files

Summary.

There are 3 master files with raw data, one for each age group (year3, year4, and year6). They have a common structure.

These master files were created in Excel, and have been saved in the close-to-original format (.xlsx). Each worksheet has been deposited as a csv file also. These master files have several worksheets, and some include macros. For each master file, "Date of birth" data have been excised for the deposit to preserve anonymity

For the "**year4_datacorpus**", age was recorded in months. For the other master files, age is recorded here as year group. (nb. Age in months is a data column in the **Operationperiodcardorder file**)

Nb. For "**year3_datacorpus**", for logistical reasons there are no participants "p33", "p63" and "p64", hence there are 61 participants contributing to the SPSS file "**Operationperiodcardorder**". For the "**year4_datacorpus**" there is no participant "p16", hence there are 63 participants contributing to the SPSS file "**Operationperiodcardorder**". For "**year6_datacorpus**", there are no participants "p18", "p20" and "p35" and "p64", hence there are 60 participants contributing to the SPSS file "**Operationperiodcardorder**"

year3_datacorpus

In the summary worksheet, background information is coded yellow, and details;

Participant number

Gender (M/F - Male / Female)

Date of Birth

Age

S1 Structure Textual description of sequence order for first period administration (session 1)

S2 Structure Textual description of sequence order for second period administration (session 2)

Date S1 Date of testing for session 1

Date S2 Date of testing for session 1

Numeracy Y/N - to indicate whether data were available from BAS testing of number skills

Literacy Y/N - to indicate whether data were available from BAS testing of word reading

Coded blue, "Session 1 - Trials Correct @ Each Level" indicate (from 0 - 3, how many whole trials were recorded correctly)

"Level Reached (Trials Correct)" specifies the level attained by each participant based on the specific progression criterion

Coded light blue, data are then presented for the second period administration (session 2) in the same format

Coded green, "BAS NUMERACY SCORE" provides a score for each subsection of the number skills scale

Coded dark green, "BAS LITERACY SCORE" provides a score for each subsection of the word reading scale

Coded yellow, "SUMMARY" describes the level achieved for pass thresholds of 1 trial or 2 trials per set.

"Sum (Trials Correct at each level x 4)" describes the number of correct recalls for correct sequences.

In the "DATA s1" worksheet, for each trial or each level, and each serial position, the numerical processing accuracy is described for each participant (1 = Correct, 0 = Incorrect)

Columns AF-AL summarise these data by combining across serial position
Columns AN-AT summarise the preceding data by combining across trial

For columns AR onwards, data report processing time data for the corresponding recall data described above

For columns CD onwards, data are reported for the processing times only when recall is correct

For columns DK onwards, for each trial or each level, and each serial position, the memory recall accuracy is described for each participant (1 = Correct, 0 = Incorrect)

For columns FH onwards, the partial length credit calculations are performed on recall accuracy

For column FW onwards, the serial position recall accuracy and serial position response data data are computed from preceding data

In the "Data s2" worksheet, the same data structure as above is employed for performance on the second period assessment (session 2)