HRS : Seed Report

Date: 2016-12-04

Table of Contents

This report contains a searchable table, followed by publication-ready tables.

# Available models

Study **HRS** have contributed the following outcome pairs to the IASLA-2015-Portland model pool: NULL

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| grip | serial7 | 6 |
| grip | tics | 6 |
| grip | word\_de | 6 |
| grip | word\_im | 6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| hrs | female | a | grip | serial7 | 1 |
| hrs | female | a | grip | tics | 1 |
| hrs | female | a | grip | word\_de | 1 |
| hrs | female | a | grip | word\_im | 1 |
| hrs | female | aeh | grip | serial7 | 1 |
| hrs | female | aeh | grip | tics | 1 |
| hrs | female | aeh | grip | word\_de | 1 |
| hrs | female | aeh | grip | word\_im | 1 |
| hrs | female | aehplus | grip | serial7 | 1 |
| hrs | female | aehplus | grip | tics | 1 |
| hrs | female | aehplus | grip | word\_de | 1 |
| hrs | female | aehplus | grip | word\_im | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| hrs | male | a | grip | serial7 | 1 |
| hrs | male | a | grip | tics | 1 |
| hrs | male | a | grip | word\_de | 1 |
| hrs | male | a | grip | word\_im | 1 |
| hrs | male | aeh | grip | serial7 | 1 |
| hrs | male | aeh | grip | tics | 1 |
| hrs | male | aeh | grip | word\_de | 1 |
| hrs | male | aeh | grip | word\_im | 1 |
| hrs | male | aehplus | grip | serial7 | 1 |
| hrs | male | aehplus | grip | tics | 1 |
| hrs | male | aehplus | grip | word\_de | 1 |
| hrs | male | aehplus | grip | word\_im | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *grip*; Process (b): *serial7*, *tics*, *word\_de*, *word\_im*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | serial7 | tics | word\_de | word\_im | mean(sd) |
| a | Level | 23.86 (0.20) <.01 | 23.66 (0.89) <.01 | 23.85 (0.20) <.01 | 23.85 (0.20) <.01 | 23.80(0.10) |
| a | Slope | -0.46 (0.03) <.01 | -0.27 (0.18) .14 | -0.46 (0.03) <.01 | -0.46 (0.03) <.01 | -0.41(0.09) |
| a | Level \* age | -0.26 (0.01) <.01 | -0.29 (0.07) <.01 | -0.26 (0.01) <.01 | -0.26 (0.01) <.01 | -0.27(0.01) |
| a | Level \* education | 0.03 (0.03) .37 | 0.22 (0.18) .23 | 0.02 (0.03) .38 | 0.03 (0.03) .36 | 0.07(0.10) |
| a | Level \* height | 0.22 (0.01) <.01 | 9.91 (6.12) .10 | 0.22 (0.01) <.01 | 0.22 (0.01) <.01 | 2.64(4.84) |
| a | Level \* smoking | -0.07 (0.15) .65 | -2.01 (1.07) .06 | -0.07 (0.15) .64 | -0.07 (0.15) .65 | -0.55(0.97) |
| a | Level \* cardio | -1.21 (0.19) <.01 | -1.77 (0.74) .02 | -1.21 (0.19) <.01 | -1.22 (0.19) <.01 | -1.35(0.28) |
| a | Level \* diabetes | -1.19 (0.21) <.01 | -1.17 (0.70) .10 | -1.20 (0.21) <.01 | -1.19 (0.21) <.01 | -1.19(0.01) |
| a | Slope \* age | -0.01 (0.00) <.01 | 0.00 (0.02) .90 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01(0.01) |
| a | Slope \* education | 0.00 (0.00) .90 | -0.05 (0.04) .17 | 0.00 (0.00) .84 | 0.00 (0.00) .85 | -0.01(0.03) |
| a | Slope \* height | -0.00 (0.00) .14 | 1.83 (1.26) .15 | -0.00 (0.00) .19 | -0.00 (0.00) .17 | 0.46(0.92) |
| a | Slope \* smoking | -0.02 (0.02) .44 | 0.12 (0.23) .59 | -0.01 (0.02) .51 | -0.01 (0.02) .54 | 0.02(0.07) |
| a | Slope \* cardio | 0.01 (0.03) .68 | -0.03 (0.16) .84 | 0.01 (0.03) .65 | 0.01 (0.03) .60 | 0.00(0.02) |
| a | Slope \* diabetes | 0.00 (0.03) .96 | 0.05 (0.15) .72 | 0.00 (0.03) .94 | 0.00 (0.03) .96 | 0.01(0.03) |
| b | Level | 2.67 (0.06) <.01 | 8.02 (0.28) <.01 | 3.45 (0.06) <.01 | 4.59 (0.05) <.01 | --- |
| b | Slope | -0.11 (0.01) <.01 | -0.08 (0.05) .11 | -0.08 (0.01) <.01 | -0.08 (0.01) <.01 | --- |
| b | Level \* age | -0.00 (0.00) .40 | 0.05 (0.02) <.01 | -0.06 (0.00) <.01 | -0.05 (0.00) <.01 | --- |
| b | Level \* education | 0.18 (0.01) <.01 | 0.15 (0.03) <.01 | 0.18 (0.01) <.01 | 0.17 (0.01) <.01 | --- |
| b | Level \* height | 0.01 (0.00) .01 | 0.89 (1.27) .48 | 0.01 (0.00) .14 | 0.00 (0.00) .26 | --- |
| b | Level \* smoking | -0.08 (0.05) .10 | 1.05 (0.36) <.01 | 0.09 (0.05) .07 | 0.06 (0.04) .12 | --- |
| b | Level \* cardio | -0.01 (0.06) .92 | -0.33 (0.21) .12 | -0.24 (0.06) <.01 | -0.14 (0.05) .01 | --- |
| b | Level \* diabetes | -0.20 (0.06) <.01 | 0.11 (0.22) .61 | -0.31 (0.07) <.01 | -0.21 (0.05) <.01 | --- |
| b | Slope \* age | -0.01 (0.00) <.01 | 0.01 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | --- |
| b | Slope \* education | 0.00 (0.00) .85 | -0.02 (0.01) .01 | 0.00 (0.00) .83 | 0.00 (0.00) .82 | --- |
| b | Slope \* height | 0.00 (0.00) .89 | 0.19 (0.27) .48 | 0.00 (0.00) .85 | 0.00 (0.00) .90 | --- |
| b | Slope \* smoking | -0.01 (0.01) .06 | -0.23 (0.08) <.01 | -0.01 (0.01) .09 | -0.01 (0.01) .19 | --- |
| b | Slope \* cardio | -0.03 (0.01) <.01 | -0.03 (0.05) .55 | 0.00 (0.01) .96 | 0.00 (0.01) .99 | --- |
| b | Slope \* diabetes | -0.02 (0.01) .07 | 0.06 (0.04) .19 | -0.02 (0.01) .06 | -0.02 (0.01) .03 | --- |
| a | Var (Level) | 18.41 (0.68) <.01 | 102.03 (52.10) .05 | 18.42 (0.68) <.01 | 18.42 (0.68) <.01 | 39.32(41.80) |
| a | Var (Slope) | 0.05 (0.01) <.01 | 3.52 (2.11) .10 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.92(1.73) |
| a | Var (Residual) | 8.20 (0.29) <.01 | 57.63 (23.67) .01 | 8.21 (0.29) <.01 | 8.21 (0.29) <.01 | 20.56(24.71) |
| a | Covar (Level, Slope) | -0.30 (0.08) <.01 | -18.89 (11.44) .10 | -0.30 (0.08) <.01 | -0.30 (0.08) <.01 | -4.95(9.30) |
| b | Var (Level) | 1.13 (0.05) <.01 | 2.33 (0.94) .01 | 1.49 (0.08) <.01 | 0.87 (0.06) <.01 | --- |
| b | Var (Slope) | 0.02 (0.00) <.01 | 0.12 (0.02) <.01 | 0.00 (0.00) .52 | 0.00 (0.00) .59 | --- |
| b | Var (Residual) | 1.23 (0.03) <.01 | 1.79 (0.20) <.01 | 1.68 (0.05) <.01 | 1.25 (0.04) <.01 | --- |
| b | Covar (Level, Slope) | -0.02 (0.01) <.01 | -0.15 (0.14) .27 | 0.01 (0.01) .56 | 0.01 (0.01) .47 | --- |
| ab | Covar (Levels) | 0.13 (0.13) .32 | 2.48 (1.40) .08 | 0.49 (0.15) <.01 | 0.58 (0.12) <.01 | --- |
| ab | Covar (Slopes) | 0.01 (0.00) <.01 | 0.10 (0.06) .08 | 0.00 (0.00) .92 | 0.00 (0.00) .46 | --- |
| ab | Covar (Residuals) | -0.08 (0.06) .18 | -0.40 (0.46) .39 | 0.17 (0.07) .01 | 0.09 (0.06) .14 | --- |
|  | Correlation of Levels | 0.028 | 0.161 | 0.093 | 0.144 | 0.11(0.06) |
|  | Correlation of Slopes | 0.466 | 0.158 | 0.000 | 0.277 | 0.23(0.20) |
|  | Correlation of Residuals | -0.027 | -0.039 | 0.047 | 0.028 | 0.00(0.04) |
|  | N | 4,604 | 641 | 4,612 | 4,612 | 3617.25(1984.17) |
|  | occasions | 3 | 5 | 3 | 3 | 3.50(1.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -49,990 | -11,072 | -51,599 | -49,537 | -4.054933e+04(1.967179e+04) |
|  | AIC | 100,063 | 22,225 | 103,280 | 99,155 | 8.118066e+04(3.934357e+04) |
|  | BIC | 100,327 | 22,408 | 103,544 | 99,419 | 8.142430e+04(3.938397e+04) |

## serial7

Gender = *female*; Process (a) = *grip*; Process (b) = *serial7*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 24.15 (0.47) <.01 | 22.57 (0.89) <.01 | 23.86 (0.20) <.01 |
| a | Slope | -0.52 (0.10) <.01 | -0.26 (0.19) .16 | -0.46 (0.03) <.01 |
| a | Level \* age | -0.31 (0.06) <.01 | -0.29 (0.06) <.01 | -0.26 (0.01) <.01 |
| a | Level \* education | --- | 0.26 (0.19) .17 | 0.03 (0.03) .37 |
| a | Level \* height | --- | 10.46 (6.05) .08 | 0.22 (0.01) <.01 |
| a | Level \* smoking | --- | --- | -0.07 (0.15) .65 |
| a | Level \* cardio | --- | --- | -1.21 (0.19) <.01 |
| a | Level \* diabetes | --- | --- | -1.19 (0.21) <.01 |
| a | Slope \* age | 0.00 (0.01) .97 | 0.00 (0.01) .96 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | -0.05 (0.04) .25 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | 1.67 (1.29) .20 | -0.00 (0.00) .14 |
| a | Slope \* smoking | --- | --- | -0.02 (0.02) .44 |
| a | Slope \* cardio | --- | --- | 0.01 (0.03) .68 |
| a | Slope \* diabetes | --- | --- | 0.00 (0.03) .96 |
| b | Level | 3.54 (0.06) <.01 | 2.28 (0.14) <.01 | 2.67 (0.06) <.01 |
| b | Slope | -0.15 (0.01) <.01 | -0.11 (0.02) <.01 | -0.11 (0.01) <.01 |
| b | Level \* age | -0.01 (0.00) .02 | -0.01 (0.00) .28 | -0.00 (0.00) .40 |
| b | Level \* education | --- | 0.22 (0.02) <.01 | 0.18 (0.01) <.01 |
| b | Level \* height | --- | 0.57 (0.97) .56 | 0.01 (0.00) .01 |
| b | Level \* smoking | --- | --- | -0.08 (0.05) .10 |
| b | Level \* cardio | --- | --- | -0.01 (0.06) .92 |
| b | Level \* diabetes | --- | --- | -0.20 (0.06) <.01 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.01 (0.00) .01 | 0.00 (0.00) .85 |
| b | Slope \* height | --- | 0.22 (0.14) .10 | 0.00 (0.00) .89 |
| b | Slope \* smoking | --- | --- | -0.01 (0.01) .06 |
| b | Slope \* cardio | --- | --- | -0.03 (0.01) <.01 |
| b | Slope \* diabetes | --- | --- | -0.02 (0.01) .07 |
| a | Var (Level) | 134.49 (64.90) .04 | 133.37 (64.77) .04 | 18.41 (0.68) <.01 |
| a | Var (Slope) | 5.08 (2.55) .05 | 5.04 (2.53) .05 | 0.05 (0.01) <.01 |
| a | Var (Residual) | 15.01 (6.26) .02 | 14.78 (6.17) .02 | 8.20 (0.29) <.01 |
| a | Covar (Level, Slope) | -24.64 (13.27) .06 | -24.58 (13.19) .06 | -0.30 (0.08) <.01 |
| b | Var (Level) | 0.04 (0.56) .94 | 0.02 (0.74) .97 | 1.13 (0.05) <.01 |
| b | Var (Slope) | 0.00 (0.12) .99 | 0.00 (0.10) .99 | 0.02 (0.00) <.01 |
| b | Var (Residual) | 15.01 (6.26) .02 | 14.78 (6.17) .02 | 1.23 (0.03) <.01 |
| b | Covar (Level, Slope) | 0.00 (0.11) .99 | 0.00 (0.10) .99 | -0.02 (0.01) <.01 |
| ab | Covar (Levels) | 0.90 (1.81) .62 | 0.36 (1.52) .81 | 0.13 (0.13) .32 |
| ab | Covar (Slopes) | -0.04 (0.14) .80 | -0.04 (0.12) .76 | 0.01 (0.00) <.01 |
| ab | Covar (Residuals) | 0.01 (0.10) .93 | 0.01 (0.09) .95 | -0.08 (0.06) .18 |
|  | Correlation of Levels | 0.36833 | 0.20010 | 0.028 |
|  | Correlation of Slopes | -0.49116 | -0.52102 | 0.466 |
|  | Correlation of Residuals | 0.00053 | 0.00041 | -0.027 |
|  | N | 641 | 641 | 4,604 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -14,756 | -14,707 | -49,990 |
|  | AIC | 29,552 | 29,470 | 100,063 |
|  | BIC | 29,641 | 29,595 | 100,327 |

## tics

Gender = *female*; Process (a) = *grip*; Process (b) = *tics*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 24.14 (0.46) <.01 | 22.56 (0.89) <.01 | 23.66 (0.89) <.01 |
| a | Slope | -0.50 (0.08) <.01 | -0.25 (0.19) .18 | -0.27 (0.18) .14 |
| a | Level \* age | -0.31 (0.06) <.01 | -0.29 (0.06) <.01 | -0.29 (0.07) <.01 |
| a | Level \* education | --- | 0.26 (0.19) .17 | 0.22 (0.18) .23 |
| a | Level \* height | --- | 10.42 (6.05) .08 | 9.91 (6.12) .10 |
| a | Level \* smoking | --- | --- | -2.01 (1.07) .06 |
| a | Level \* cardio | --- | --- | -1.77 (0.74) .02 |
| a | Level \* diabetes | --- | --- | -1.17 (0.70) .10 |
| a | Slope \* age | 0.00 (0.01) .94 | 0.00 (0.01) .95 | 0.00 (0.02) .90 |
| a | Slope \* education | --- | -0.05 (0.04) .23 | -0.05 (0.04) .17 |
| a | Slope \* height | --- | 1.71 (1.27) .18 | 1.83 (1.26) .15 |
| a | Slope \* smoking | --- | --- | 0.12 (0.23) .59 |
| a | Slope \* cardio | --- | --- | -0.03 (0.16) .84 |
| a | Slope \* diabetes | --- | --- | 0.05 (0.15) .72 |
| b | Level | 9.14 (0.14) <.01 | 8.36 (0.23) <.01 | 8.02 (0.28) <.01 |
| b | Slope | -0.16 (0.02) <.01 | -0.08 (0.04) .04 | -0.08 (0.05) .11 |
| b | Level \* age | -0.01 (0.02) .62 | -0.00 (0.02) .79 | 0.05 (0.02) <.01 |
| b | Level \* education | --- | 0.14 (0.03) <.01 | 0.15 (0.03) <.01 |
| b | Level \* height | --- | 1.01 (1.29) .43 | 0.89 (1.27) .48 |
| b | Level \* smoking | --- | --- | 1.05 (0.36) <.01 |
| b | Level \* cardio | --- | --- | -0.33 (0.21) .12 |
| b | Level \* diabetes | --- | --- | 0.11 (0.22) .61 |
| b | Slope \* age | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.01 (0.01) .02 | -0.02 (0.01) .01 |
| b | Slope \* height | --- | 0.07 (0.29) .81 | 0.19 (0.27) .48 |
| b | Slope \* smoking | --- | --- | -0.23 (0.08) <.01 |
| b | Slope \* cardio | --- | --- | -0.03 (0.05) .55 |
| b | Slope \* diabetes | --- | --- | 0.06 (0.04) .19 |
| a | Var (Level) | 130.60 (63.46) .04 | 129.34 (63.23) .04 | 102.03 (52.10) .05 |
| a | Var (Slope) | 4.80 (2.46) .05 | 4.75 (2.42) .05 | 3.52 (2.11) .10 |
| a | Var (Residual) | 20.58 (8.54) .02 | 20.52 (8.52) .02 | 57.63 (23.67) .01 |
| a | Covar (Level, Slope) | -23.92 (13.01) .07 | -23.82 (12.91) .06 | -18.89 (11.44) .10 |
| b | Var (Level) | 0.04 (0.89) .96 | 0.04 (0.91) .97 | 2.33 (0.94) .01 |
| b | Var (Slope) | 0.00 (0.17) .99 | 0.00 (0.17) .99 | 0.12 (0.02) <.01 |
| b | Var (Residual) | 20.58 (8.54) .02 | 20.52 (8.52) .02 | 1.79 (0.20) <.01 |
| b | Covar (Level, Slope) | -0.01 (0.29) .98 | -0.00 (0.28) .99 | -0.15 (0.14) .27 |
| ab | Covar (Levels) | 1.67 (0.29) <.01 | 1.26 (0.20) <.01 | 2.48 (1.40) .08 |
| ab | Covar (Slopes) | 0.07 (0.13) .59 | 0.06 (0.11) .58 | 0.10 (0.06) .08 |
| ab | Covar (Residuals) | 0.29 (0.35) .41 | 0.25 (0.32) .43 | -0.40 (0.46) .39 |
|  | Correlation of Levels | 0.689 | 0.591 | 0.161 |
|  | Correlation of Slopes | 0.725 | 0.646 | 0.158 |
|  | Correlation of Residuals | 0.014 | 0.012 | -0.039 |
|  | N | 641 | 641 | 641 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -12,582 | -12,560 | -11,072 |
|  | AIC | 25,203 | 25,175 | 22,225 |
|  | BIC | 25,293 | 25,300 | 22,408 |

## word\_de

Gender = *female*; Process (a) = *grip*; Process (b) = *word\_de*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 24.14 (0.46) <.01 | 22.56 (0.89) <.01 | 23.85 (0.20) <.01 |
| a | Slope | -0.51 (0.08) <.01 | -0.25 (0.19) .18 | -0.46 (0.03) <.01 |
| a | Level \* age | -0.31 (0.06) <.01 | -0.29 (0.06) <.01 | -0.26 (0.01) <.01 |
| a | Level \* education | --- | 0.26 (0.19) .17 | 0.02 (0.03) .38 |
| a | Level \* height | --- | 10.45 (6.05) .08 | 0.22 (0.01) <.01 |
| a | Level \* smoking | --- | --- | -0.07 (0.15) .64 |
| a | Level \* cardio | --- | --- | -1.21 (0.19) <.01 |
| a | Level \* diabetes | --- | --- | -1.20 (0.21) <.01 |
| a | Slope \* age | 0.00 (0.01) .93 | 0.00 (0.01) .94 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | -0.05 (0.04) .23 | 0.00 (0.00) .84 |
| a | Slope \* height | --- | 1.67 (1.27) .19 | -0.00 (0.00) .19 |
| a | Slope \* smoking | --- | --- | -0.01 (0.02) .51 |
| a | Slope \* cardio | --- | --- | 0.01 (0.03) .65 |
| a | Slope \* diabetes | --- | --- | 0.00 (0.03) .94 |
| b | Level | 4.43 (0.07) <.01 | 3.52 (0.13) <.01 | 3.45 (0.06) <.01 |
| b | Slope | -0.06 (0.03) .05 | -0.04 (0.02) .10 | -0.08 (0.01) <.01 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.06 (0.00) <.01 |
| b | Level \* education | --- | 0.16 (0.02) <.01 | 0.18 (0.01) <.01 |
| b | Level \* height | --- | 1.39 (0.98) .16 | 0.01 (0.00) .14 |
| b | Level \* smoking | --- | --- | 0.09 (0.05) .07 |
| b | Level \* cardio | --- | --- | -0.24 (0.06) <.01 |
| b | Level \* diabetes | --- | --- | -0.31 (0.07) <.01 |
| b | Slope \* age | -0.00 (0.00) .18 | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.00) .31 | 0.00 (0.00) .83 |
| b | Slope \* height | --- | -0.14 (0.18) .42 | 0.00 (0.00) .85 |
| b | Slope \* smoking | --- | --- | -0.01 (0.01) .09 |
| b | Slope \* cardio | --- | --- | 0.00 (0.01) .96 |
| b | Slope \* diabetes | --- | --- | -0.02 (0.01) .06 |
| a | Var (Level) | 133.50 (64.62) .04 | 132.29 (64.43) .04 | 18.42 (0.68) <.01 |
| a | Var (Slope) | 5.01 (2.53) .05 | 4.97 (2.53) .05 | 0.05 (0.01) <.01 |
| a | Var (Residual) | 16.46 (6.86) .02 | 16.34 (6.46) .01 | 8.21 (0.29) <.01 |
| a | Covar (Level, Slope) | -24.47 (13.23) .06 | -24.39 (13.15) .06 | -0.30 (0.08) <.01 |
| b | Var (Level) | 0.07 (1.75) .97 | 0.05 (0.32) .87 | 1.49 (0.08) <.01 |
| b | Var (Slope) | 0.00 (0.07) .99 | 0.00 (0.13) .99 | 0.00 (0.00) .52 |
| b | Var (Residual) | 16.46 (6.86) .02 | 16.34 (6.46) .01 | 1.68 (0.05) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.66) .99 | -0.00 (0.48) .99 | 0.01 (0.01) .56 |
| ab | Covar (Levels) | 1.35 (1.71) .43 | 0.92 (1.44) .52 | 0.49 (0.15) <.01 |
| ab | Covar (Slopes) | 0.02 (0.17) .89 | 0.02 (0.09) .82 | 0.00 (0.00) .92 |
| ab | Covar (Residuals) | 0.11 (0.08) .17 | 0.09 (0.06) .13 | 0.17 (0.07) .01 |
|  | Correlation of Levels | 0.4324 | 0.3523 | 0.093 |
|  | Correlation of Slopes | 0.3248 | 0.3121 | 0.000 |
|  | Correlation of Residuals | 0.0065 | 0.0057 | 0.047 |
|  | N | 641 | 641 | 4,612 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -13,872 | -13,841 | -51,599 |
|  | AIC | 27,785 | 27,738 | 103,280 |
|  | BIC | 27,874 | 27,863 | 103,544 |

## word\_im

Gender = *female*; Process (a) = *grip*; Process (b) = *word\_im*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 24.14 (0.46) <.01 | 22.56 (0.89) <.01 | 23.85 (0.20) <.01 |
| a | Slope | -0.51 (0.08) <.01 | -0.26 (0.19) .18 | -0.46 (0.03) <.01 |
| a | Level \* age | -0.31 (0.06) <.01 | -0.29 (0.06) <.01 | -0.26 (0.01) <.01 |
| a | Level \* education | --- | 0.26 (0.19) .17 | 0.03 (0.03) .36 |
| a | Level \* height | --- | 10.46 (6.05) .08 | 0.22 (0.01) <.01 |
| a | Level \* smoking | --- | --- | -0.07 (0.15) .65 |
| a | Level \* cardio | --- | --- | -1.22 (0.19) <.01 |
| a | Level \* diabetes | --- | --- | -1.19 (0.21) <.01 |
| a | Slope \* age | 0.00 (0.01) .93 | 0.00 (0.01) .94 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | -0.05 (0.04) .23 | 0.00 (0.00) .85 |
| a | Slope \* height | --- | 1.66 (1.26) .19 | -0.00 (0.00) .17 |
| a | Slope \* smoking | --- | --- | -0.01 (0.02) .54 |
| a | Slope \* cardio | --- | --- | 0.01 (0.03) .60 |
| a | Slope \* diabetes | --- | --- | 0.00 (0.03) .96 |
| b | Level | 5.57 (0.05) <.01 | 4.72 (0.10) <.01 | 4.59 (0.05) <.01 |
| b | Slope | -0.08 (0.01) <.01 | -0.08 (0.02) <.01 | -0.08 (0.01) <.01 |
| b | Level \* age | -0.06 (0.00) <.01 | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.17 (0.01) <.01 |
| b | Level \* height | --- | 1.08 (0.77) .16 | 0.00 (0.00) .26 |
| b | Level \* smoking | --- | --- | 0.06 (0.04) .12 |
| b | Level \* cardio | --- | --- | -0.14 (0.05) .01 |
| b | Level \* diabetes | --- | --- | -0.21 (0.05) <.01 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 |
| b | Slope \* education | --- | 0.00 (0.00) .78 | 0.00 (0.00) .82 |
| b | Slope \* height | --- | 0.03 (0.14) .86 | 0.00 (0.00) .90 |
| b | Slope \* smoking | --- | --- | -0.01 (0.01) .19 |
| b | Slope \* cardio | --- | --- | 0.00 (0.01) .99 |
| b | Slope \* diabetes | --- | --- | -0.02 (0.01) .03 |
| a | Var (Level) | 134.08 (64.87) .04 | 132.89 (64.69) .04 | 18.42 (0.68) <.01 |
| a | Var (Slope) | 5.05 (2.56) .05 | 5.01 (2.54) .05 | 0.05 (0.01) <.01 |
| a | Var (Residual) | 15.64 (6.37) .01 | 15.49 (6.29) .01 | 8.21 (0.29) <.01 |
| a | Covar (Level, Slope) | -24.58 (13.28) .06 | -24.50 (13.20) .06 | -0.30 (0.08) <.01 |
| b | Var (Level) | 0.05 (0.82) .95 | 0.04 (0.85) .97 | 0.87 (0.06) <.01 |
| b | Var (Slope) | 0.00 (0.10) .99 | 0.00 (0.09) .99 | 0.00 (0.00) .59 |
| b | Var (Residual) | 15.64 (6.37) .01 | 15.49 (6.29) .01 | 1.25 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.21) .99 | -0.00 (0.18) .99 | 0.01 (0.01) .47 |
| ab | Covar (Levels) | 1.29 (3.15) .68 | 0.91 (2.83) .75 | 0.58 (0.12) <.01 |
| ab | Covar (Slopes) | 0.02 (0.15) .90 | 0.02 (0.14) .89 | 0.00 (0.00) .46 |
| ab | Covar (Residuals) | 0.10 (0.08) .26 | 0.08 (0.08) .33 | 0.09 (0.06) .14 |
|  | Correlation of Levels | 0.5041 | 0.4201 | 0.144 |
|  | Correlation of Slopes | 0.2813 | 0.2825 | 0.277 |
|  | Correlation of Residuals | 0.0061 | 0.0051 | 0.028 |
|  | N | 641 | 641 | 4,612 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -13,794 | -13,759 | -49,537 |
|  | AIC | 27,627 | 27,574 | 99,155 |
|  | BIC | 27,717 | 27,699 | 99,419 |

## Summary

Study = *HRS*; Gender = *female*; Process (a) = *grip*

Computed correlations:

label

process\_b

a

aeh

aehplus

Correlation of Levels

serial7

0.37

0.20

0.03

Correlation of Levels

tics

0.69

0.59

0.16

Correlation of Levels

word\_de

0.43

0.35

0.09

Correlation of Levels

word\_im

0.50

0.42

0.14

label

process\_b

a

aeh

aehplus

Correlation of Slopes

serial7

-0.49

-0.52

0.47

Correlation of Slopes

tics

0.72

0.65

0.16

Correlation of Slopes

word\_de

0.32

0.31

0.00

Correlation of Slopes

word\_im

0.28

0.28

0.28

label

process\_b

a

aeh

aehplus

Correlation of Residuals

serial7

0.00

0.00

-0.03

Correlation of Residuals

tics

0.01

0.01

-0.04

Correlation of Residuals

word\_de

0.01

0.01

0.05

Correlation of Residuals

word\_im

0.01

0.01

0.03

P-values for corresponding covariances:

label

process\_b

a

aeh

aehplus

Covariance of Levels

serial7

0.62

0.81

0.32

Covariance of Levels

tics

0.00

0.00

0.08

Covariance of Levels

word\_de

0.43

0.52

0.00

Covariance of Levels

word\_im

0.68

0.75

0.00

label

process\_b

a

aeh

aehplus

Covariance of Slopes

serial7

0.80

0.76

0.00

Covariance of Slopes

tics

0.59

0.58

0.08

Covariance of Slopes

word\_de

0.89

0.82

0.92

Covariance of Slopes

word\_im

0.90

0.89

0.46

label

process\_b

a

aeh

aehplus

Covariance of Residuals

serial7

0.93

0.95

0.18

Covariance of Residuals

tics

0.41

0.43

0.39

Covariance of Residuals

word\_de

0.17

0.13

0.01

Covariance of Residuals

word\_im

0.26

0.33

0.14

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *grip*; Process (b): *serial7*, *tics*, *word\_de*, *word\_im*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | serial7 | tics | word\_de | word\_im | mean(sd) |
| a | Level | 38.25 (0.38) <.01 | 35.26 (1.13) <.01 | 38.25 (0.38) <.01 | 38.24 (0.38) <.01 | 37.50(1.49) |
| a | Slope | -0.78 (0.06) <.01 | -0.59 (0.23) .01 | -0.77 (0.06) <.01 | -0.77 (0.06) <.01 | -0.73(0.09) |
| a | Level \* age | -0.43 (0.01) <.01 | -0.52 (0.05) <.01 | -0.43 (0.01) <.01 | -0.43 (0.01) <.01 | -0.45(0.04) |
| a | Level \* education | 0.13 (0.04) <.01 | 0.01 (0.14) .95 | 0.13 (0.04) <.01 | 0.13 (0.04) <.01 | 0.10(0.06) |
| a | Level \* height | 0.35 (0.02) <.01 | 25.69 (4.97) <.01 | 0.35 (0.02) <.01 | 0.35 (0.02) <.01 | 6.68(12.67) |
| a | Level \* smoking | -0.26 (0.29) .37 | 1.02 (2.83) .72 | -0.26 (0.29) .37 | -0.26 (0.29) .38 | 0.06(0.64) |
| a | Level \* cardio | -1.15 (0.32) <.01 | 0.25 (0.88) .78 | -1.14 (0.32) <.01 | -1.14 (0.32) <.01 | -0.79(0.69) |
| a | Level \* diabetes | -1.59 (0.34) <.01 | -2.04 (0.80) .01 | -1.59 (0.34) <.01 | -1.60 (0.34) <.01 | -1.71(0.22) |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.01) .60 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01(0.00) |
| a | Slope \* education | 0.01 (0.01) .11 | -0.01 (0.03) .58 | 0.01 (0.01) .10 | 0.01 (0.01) .10 | 0.00(0.01) |
| a | Slope \* height | -0.01 (0.00) .01 | -0.79 (0.99) .43 | -0.01 (0.00) .01 | -0.01 (0.00) .01 | -0.20(0.39) |
| a | Slope \* smoking | -0.12 (0.04) <.01 | -0.53 (0.51) .30 | -0.12 (0.04) <.01 | -0.12 (0.04) <.01 | -0.22(0.21) |
| a | Slope \* cardio | 0.01 (0.04) .81 | -0.07 (0.17) .68 | 0.01 (0.04) .84 | 0.01 (0.04) .84 | -0.01(0.04) |
| a | Slope \* diabetes | -0.07 (0.05) .13 | -0.18 (0.19) .33 | -0.07 (0.05) .13 | -0.07 (0.05) .14 | -0.10(0.06) |
| b | Level | 3.22 (0.08) <.01 | 8.74 (0.23) <.01 | 3.08 (0.08) <.01 | 4.23 (0.07) <.01 | --- |
| b | Slope | -0.14 (0.01) <.01 | -0.19 (0.05) <.01 | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 | --- |
| b | Level \* age | 0.00 (0.00) .99 | 0.02 (0.01) .01 | -0.06 (0.00) <.01 | -0.05 (0.00) <.01 | --- |
| b | Level \* education | 0.14 (0.01) <.01 | 0.09 (0.02) <.01 | 0.16 (0.01) <.01 | 0.15 (0.01) <.01 | --- |
| b | Level \* height | 0.01 (0.00) .07 | 0.60 (0.61) .33 | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | --- |
| b | Level \* smoking | 0.02 (0.05) .71 | 0.07 (0.21) .73 | -0.01 (0.06) .85 | 0.03 (0.05) .57 | --- |
| b | Level \* cardio | -0.10 (0.06) .06 | 0.06 (0.10) .51 | -0.09 (0.06) .16 | -0.12 (0.06) .03 | --- |
| b | Level \* diabetes | -0.06 (0.06) .35 | 0.06 (0.11) .58 | -0.16 (0.07) .02 | -0.20 (0.06) <.01 | --- |
| b | Slope \* age | -0.01 (0.00) <.01 | 0.02 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | --- |
| b | Slope \* education | 0.00 (0.00) .25 | -0.01 (0.00) .05 | 0.00 (0.00) .23 | 0.00 (0.00) .11 | --- |
| b | Slope \* height | 0.00 (0.00) .88 | 0.20 (0.22) .35 | 0.00 (0.00) .65 | 0.00 (0.00) .96 | --- |
| b | Slope \* smoking | -0.02 (0.01) .01 | -0.27 (0.06) <.01 | -0.02 (0.01) .08 | -0.02 (0.01) .04 | --- |
| b | Slope \* cardio | -0.00 (0.01) .96 | 0.00 (0.04) .88 | 0.00 (0.01) .78 | 0.00 (0.01) .75 | --- |
| b | Slope \* diabetes | -0.02 (0.01) .06 | -0.04 (0.04) .27 | -0.00 (0.01) .68 | 0.01 (0.01) .12 | --- |
| a | Var (Level) | 41.72 (1.77) <.01 | 151.05 (119.20) .20 | 41.63 (1.77) <.01 | 41.61 (1.77) <.01 | 69.00(54.70) |
| a | Var (Slope) | 0.15 (0.04) <.01 | 4.29 (3.96) .28 | 0.15 (0.04) <.01 | 0.15 (0.04) <.01 | 1.18(2.07) |
| a | Var (Residual) | 16.73 (0.76) <.01 | 95.86 (66.72) .15 | 16.80 (0.77) <.01 | 16.83 (0.78) <.01 | 36.55(39.53) |
| a | Covar (Level, Slope) | -0.57 (0.20) <.01 | -25.30 (25.59) .32 | -0.56 (0.20) <.01 | -0.56 (0.20) <.01 | -6.75(12.37) |
| b | Var (Level) | 0.67 (0.06) <.01 | 0.18 (0.37) .62 | 1.16 (0.08) <.01 | 0.81 (0.06) <.01 | --- |
| b | Var (Slope) | 0.02 (0.00) <.01 | 0.07 (0.01) <.01 | 0.00 (0.00) .36 | 0.00 (0.00) .57 | --- |
| b | Var (Residual) | 1.20 (0.04) <.01 | 1.38 (0.18) <.01 | 1.53 (0.05) <.01 | 1.14 (0.04) <.01 | --- |
| b | Covar (Level, Slope) | -0.01 (0.01) .17 | 0.06 (0.06) .31 | 0.01 (0.01) .24 | 0.01 (0.01) .39 | --- |
| ab | Covar (Levels) | 0.82 (0.21) <.01 | 0.67 (1.48) .65 | 1.04 (0.23) <.01 | 0.81 (0.20) <.01 | --- |
| ab | Covar (Slopes) | 0.02 (0.01) <.01 | 0.06 (0.06) .31 | 0.00 (0.01) .39 | 0.00 (0.00) .85 | --- |
| ab | Covar (Residuals) | -0.17 (0.12) .17 | -1.11 (0.97) .25 | 0.14 (0.12) .22 | 0.25 (0.10) .01 | --- |
|  | Correlation of Levels | 0.155 | 0.128 | 0.150 | 0.139 | 0.14(0.01) |
|  | Correlation of Slopes | 0.309 | 0.112 | 0.289 | 0.082 | 0.20(0.12) |
|  | Correlation of Residuals | -0.038 | -0.096 | 0.028 | 0.057 | -0.01(0.07) |
|  | N | 3,288 | 507 | 3,290 | 3,290 | 2593.75(1391.17) |
|  | occasions | 3 | 5 | 3 | 3 | 3.50(1.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -38,370 | -8,733 | -38,552 | -37,311 | -3.074160e+04(1.468234e+04) |
|  | AIC | 76,822 | 17,549 | 77,187 | 74,704 | 6.156520e+04(2.936469e+04) |
|  | BIC | 77,072 | 17,722 | 77,437 | 74,954 | 6.179607e+04(2.940299e+04) |

## serial7

Gender = *male*; Process (a) = *grip*; Process (b) = *serial7*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 39.42 (0.53) <.01 | 35.24 (1.29) <.01 | 38.25 (0.38) <.01 |
| a | Slope | -0.93 (0.07) <.01 | -0.81 (0.22) <.01 | -0.78 (0.06) <.01 |
| a | Level \* age | -0.56 (0.08) <.01 | -0.53 (0.08) <.01 | -0.43 (0.01) <.01 |
| a | Level \* education | --- | -0.03 (0.17) .85 | 0.13 (0.04) <.01 |
| a | Level \* height | --- | 26.41 (4.49) <.01 | 0.35 (0.02) <.01 |
| a | Level \* smoking | --- | --- | -0.26 (0.29) .37 |
| a | Level \* cardio | --- | --- | -1.15 (0.32) <.01 |
| a | Level \* diabetes | --- | --- | -1.59 (0.34) <.01 |
| a | Slope \* age | -0.00 (0.02) .77 | -0.01 (0.02) .69 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.00 (0.03) .95 | 0.01 (0.01) .11 |
| a | Slope \* height | --- | -0.86 (0.88) .33 | -0.01 (0.00) .01 |
| a | Slope \* smoking | --- | --- | -0.12 (0.04) <.01 |
| a | Slope \* cardio | --- | --- | 0.01 (0.04) .81 |
| a | Slope \* diabetes | --- | --- | -0.07 (0.05) .13 |
| b | Level | 4.12 (0.06) <.01 | 3.25 (0.21) <.01 | 3.22 (0.08) <.01 |
| b | Slope | -0.19 (0.01) <.01 | -0.24 (0.03) <.01 | -0.14 (0.01) <.01 |
| b | Level \* age | 0.00 (0.01) .65 | 0.01 (0.01) .15 | 0.00 (0.00) .99 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.14 (0.01) <.01 |
| b | Level \* height | --- | -0.04 (0.82) .97 | 0.01 (0.00) .07 |
| b | Level \* smoking | --- | --- | 0.02 (0.05) .71 |
| b | Level \* cardio | --- | --- | -0.10 (0.06) .06 |
| b | Level \* diabetes | --- | --- | -0.06 (0.06) .35 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.00) .12 | 0.00 (0.00) .25 |
| b | Slope \* height | --- | 0.48 (0.16) <.01 | 0.00 (0.00) .88 |
| b | Slope \* smoking | --- | --- | -0.02 (0.01) .01 |
| b | Slope \* cardio | --- | --- | -0.00 (0.01) .96 |
| b | Slope \* diabetes | --- | --- | -0.02 (0.01) .06 |
| a | Var (Level) | 207.51 (155.83) .18 | 203.75 (155.32) .19 | 41.72 (1.77) <.01 |
| a | Var (Slope) | 7.33 (5.85) .21 | 7.30 (5.84) .21 | 0.15 (0.04) <.01 |
| a | Var (Residual) | 21.25 (14.43) .14 | 21.09 (14.30) .14 | 16.73 (0.76) <.01 |
| a | Covar (Level, Slope) | -34.92 (31.48) .27 | -34.69 (31.37) .27 | -0.57 (0.20) <.01 |
| b | Var (Level) | 0.02 (1.66) .99 | 0.02 (1.86) .99 | 0.67 (0.06) <.01 |
| b | Var (Slope) | 0.00 (0.23) .99 | 0.00 (0.22) .99 | 0.02 (0.00) <.01 |
| b | Var (Residual) | 21.25 (14.43) .14 | 21.09 (14.30) .14 | 1.20 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.64) .99 | -0.00 (0.51) .99 | -0.01 (0.01) .17 |
| ab | Covar (Levels) | 0.87 (3.47) .80 | 0.84 (3.64) .82 | 0.82 (0.21) <.01 |
| ab | Covar (Slopes) | 0.00 (0.19) .99 | 0.01 (0.18) .97 | 0.02 (0.01) <.01 |
| ab | Covar (Residuals) | 0.01 (0.04) .77 | 0.01 (0.04) .81 | -0.17 (0.12) .17 |
|  | Correlation of Levels | 0.43915 | 0.42947 | 0.155 |
|  | Correlation of Slopes | 0.00000 | 0.07024 | 0.309 |
|  | Correlation of Residuals | 0.00061 | 0.00047 | -0.038 |
|  | N | 507 | 507 | 3,288 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -12,435 | -12,412 | -38,370 |
|  | AIC | 24,910 | 24,879 | 76,822 |
|  | BIC | 24,994 | 24,998 | 77,072 |

## tics

Gender = *male*; Process (a) = *grip*; Process (b) = *tics*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 39.40 (0.56) <.01 | 35.22 (1.31) <.01 | 35.26 (1.13) <.01 |
| a | Slope | -0.90 (0.20) <.01 | -0.79 (0.24) <.01 | -0.59 (0.23) .01 |
| a | Level \* age | -0.56 (0.08) <.01 | -0.53 (0.08) <.01 | -0.52 (0.05) <.01 |
| a | Level \* education | --- | -0.03 (0.17) .86 | 0.01 (0.14) .95 |
| a | Level \* height | --- | 26.36 (4.51) <.01 | 25.69 (4.97) <.01 |
| a | Level \* smoking | --- | --- | 1.02 (2.83) .72 |
| a | Level \* cardio | --- | --- | 0.25 (0.88) .78 |
| a | Level \* diabetes | --- | --- | -2.04 (0.80) .01 |
| a | Slope \* age | -0.00 (0.02) .84 | -0.01 (0.02) .71 | -0.01 (0.01) .60 |
| a | Slope \* education | --- | 0.00 (0.03) .99 | -0.01 (0.03) .58 |
| a | Slope \* height | --- | -0.81 (0.87) .36 | -0.79 (0.99) .43 |
| a | Slope \* smoking | --- | --- | -0.53 (0.51) .30 |
| a | Slope \* cardio | --- | --- | -0.07 (0.17) .68 |
| a | Slope \* diabetes | --- | --- | -0.18 (0.19) .33 |
| b | Level | 9.42 (0.26) <.01 | 8.79 (0.21) <.01 | 8.74 (0.23) <.01 |
| b | Slope | -0.22 (0.03) <.01 | -0.22 (0.06) <.01 | -0.19 (0.05) <.01 |
| b | Level \* age | -0.00 (0.03) .88 | 0.00 (0.02) .99 | 0.02 (0.01) .01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 |
| b | Level \* height | --- | 0.59 (0.73) .41 | 0.60 (0.61) .33 |
| b | Level \* smoking | --- | --- | 0.07 (0.21) .73 |
| b | Level \* cardio | --- | --- | 0.06 (0.10) .51 |
| b | Level \* diabetes | --- | --- | 0.06 (0.11) .58 |
| b | Slope \* age | 0.03 (0.01) <.01 | 0.03 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Slope \* education | --- | -0.01 (0.01) .37 | -0.01 (0.00) .05 |
| b | Slope \* height | --- | 0.23 (0.27) .39 | 0.20 (0.22) .35 |
| b | Slope \* smoking | --- | --- | -0.27 (0.06) <.01 |
| b | Slope \* cardio | --- | --- | 0.00 (0.04) .88 |
| b | Slope \* diabetes | --- | --- | -0.04 (0.04) .27 |
| a | Var (Level) | 203.53 (153.38) .18 | 199.66 (152.76) .19 | 151.05 (119.20) .20 |
| a | Var (Slope) | 7.03 (5.70) .22 | 6.99 (5.68) .22 | 4.29 (3.96) .28 |
| a | Var (Residual) | 27.27 (18.42) .14 | 27.23 (18.37) .14 | 95.86 (66.72) .15 |
| a | Covar (Level, Slope) | -34.27 (30.96) .27 | -34.01 (30.83) .27 | -25.30 (25.59) .32 |
| b | Var (Level) | 0.02 (2.86) .99 | 0.02 (2.85) .99 | 0.18 (0.37) .62 |
| b | Var (Slope) | 0.00 (0.29) .99 | 0.00 (0.24) .99 | 0.07 (0.01) <.01 |
| b | Var (Residual) | 27.27 (18.42) .14 | 27.23 (18.37) .14 | 1.38 (0.18) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.66) .99 | -0.00 (0.46) .99 | 0.06 (0.06) .31 |
| ab | Covar (Levels) | 0.62 (60.56) .99 | 0.06 (1.97) .97 | 0.67 (1.48) .65 |
| ab | Covar (Slopes) | 0.06 (2.00) .98 | 0.05 (0.07) .52 | 0.06 (0.06) .31 |
| ab | Covar (Residuals) | -0.51 (0.52) .33 | -0.30 (0.47) .52 | -1.11 (0.97) .25 |
|  | Correlation of Levels | 0.279 | 0.031 | 0.128 |
|  | Correlation of Slopes | 0.472 | 0.389 | 0.112 |
|  | Correlation of Residuals | -0.019 | -0.011 | -0.096 |
|  | N | 507 | 507 | 507 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -10,653 | -10,640 | -8,733 |
|  | AIC | 21,346 | 21,336 | 17,549 |
|  | BIC | 21,431 | 21,454 | 17,722 |

## word\_de

Gender = *male*; Process (a) = *grip*; Process (b) = *word\_de*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 39.41 (0.55) <.01 | 35.23 (1.30) <.01 | 38.25 (0.38) <.01 |
| a | Slope | -0.91 (0.07) <.01 | -0.80 (0.23) <.01 | -0.77 (0.06) <.01 |
| a | Level \* age | -0.56 (0.08) <.01 | -0.53 (0.08) <.01 | -0.43 (0.01) <.01 |
| a | Level \* education | --- | -0.03 (0.17) .86 | 0.13 (0.04) <.01 |
| a | Level \* height | --- | 26.39 (4.49) <.01 | 0.35 (0.02) <.01 |
| a | Level \* smoking | --- | --- | -0.26 (0.29) .37 |
| a | Level \* cardio | --- | --- | -1.14 (0.32) <.01 |
| a | Level \* diabetes | --- | --- | -1.59 (0.34) <.01 |
| a | Slope \* age | -0.00 (0.02) .79 | -0.01 (0.02) .70 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.00 (0.03) .96 | 0.01 (0.01) .10 |
| a | Slope \* height | --- | -0.85 (0.87) .33 | -0.01 (0.00) .01 |
| a | Slope \* smoking | --- | --- | -0.12 (0.04) <.01 |
| a | Slope \* cardio | --- | --- | 0.01 (0.04) .84 |
| a | Slope \* diabetes | --- | --- | -0.07 (0.05) .13 |
| b | Level | 4.02 (0.07) <.01 | 2.75 (0.19) <.01 | 3.08 (0.08) <.01 |
| b | Slope | -0.07 (0.02) <.01 | -0.05 (0.03) .14 | -0.10 (0.01) <.01 |
| b | Level \* age | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.06 (0.00) <.01 |
| b | Level \* education | --- | 0.16 (0.02) <.01 | 0.16 (0.01) <.01 |
| b | Level \* height | --- | 1.88 (0.82) .02 | 0.02 (0.00) <.01 |
| b | Level \* smoking | --- | --- | -0.01 (0.06) .85 |
| b | Level \* cardio | --- | --- | -0.09 (0.06) .16 |
| b | Level \* diabetes | --- | --- | -0.16 (0.07) .02 |
| b | Slope \* age | -0.00 (0.00) .02 | -0.00 (0.00) .02 | -0.00 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.00) .75 | 0.00 (0.00) .23 |
| b | Slope \* height | --- | -0.13 (0.16) .43 | 0.00 (0.00) .65 |
| b | Slope \* smoking | --- | --- | -0.02 (0.01) .08 |
| b | Slope \* cardio | --- | --- | 0.00 (0.01) .78 |
| b | Slope \* diabetes | --- | --- | -0.00 (0.01) .68 |
| a | Var (Level) | 205.99 (155.15) .18 | 202.26 (154.66) .19 | 41.63 (1.77) <.01 |
| a | Var (Slope) | 7.21 (5.81) .21 | 7.18 (5.80) .22 | 0.15 (0.04) <.01 |
| a | Var (Residual) | 23.60 (15.71) .13 | 23.37 (15.50) .13 | 16.80 (0.77) <.01 |
| a | Covar (Level, Slope) | -34.68 (31.30) .27 | -34.45 (31.20) .27 | -0.56 (0.20) <.01 |
| b | Var (Level) | 0.02 (2.08) .99 | 0.02 (2.16) .99 | 1.16 (0.08) <.01 |
| b | Var (Slope) | 0.00 (0.24) .99 | 0.00 (0.22) .99 | 0.00 (0.00) .36 |
| b | Var (Residual) | 23.60 (15.71) .13 | 23.37 (15.50) .13 | 1.53 (0.05) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.50) .99 | -0.00 (0.45) .99 | 0.01 (0.01) .24 |
| ab | Covar (Levels) | 0.28 (7.56) .97 | -0.01 (6.55) .99 | 1.04 (0.23) <.01 |
| ab | Covar (Slopes) | -0.00 (0.23) .99 | -0.01 (0.22) .98 | 0.00 (0.01) .39 |
| ab | Covar (Residuals) | -0.50 (0.31) .11 | -0.50 (0.31) .11 | 0.14 (0.12) .22 |
|  | Correlation of Levels | 0.123 | -0.0044 | 0.150 |
|  | Correlation of Slopes | -0.047 | -0.0708 | 0.289 |
|  | Correlation of Residuals | -0.021 | -0.0213 | 0.028 |
|  | N | 507 | 507 | 3,290 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -11,507 | -11,483 | -38,552 |
|  | AIC | 23,055 | 23,022 | 77,187 |
|  | BIC | 23,139 | 23,140 | 77,437 |

## word\_im

Gender = *male*; Process (a) = *grip*; Process (b) = *word\_im*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus |
| a | Level | 39.41 (0.55) <.01 | 35.23 (1.30) <.01 | 38.24 (0.38) <.01 |
| a | Slope | -0.91 (0.07) <.01 | -0.80 (0.23) <.01 | -0.77 (0.06) <.01 |
| a | Level \* age | -0.56 (0.08) <.01 | -0.53 (0.08) <.01 | -0.43 (0.01) <.01 |
| a | Level \* education | --- | -0.03 (0.17) .85 | 0.13 (0.04) <.01 |
| a | Level \* height | --- | 26.40 (4.49) <.01 | 0.35 (0.02) <.01 |
| a | Level \* smoking | --- | --- | -0.26 (0.29) .38 |
| a | Level \* cardio | --- | --- | -1.14 (0.32) <.01 |
| a | Level \* diabetes | --- | --- | -1.60 (0.34) <.01 |
| a | Slope \* age | -0.00 (0.02) .79 | -0.01 (0.02) .70 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.00 (0.03) .95 | 0.01 (0.01) .10 |
| a | Slope \* height | --- | -0.85 (0.87) .33 | -0.01 (0.00) .01 |
| a | Slope \* smoking | --- | --- | -0.12 (0.04) <.01 |
| a | Slope \* cardio | --- | --- | 0.01 (0.04) .84 |
| a | Slope \* diabetes | --- | --- | -0.07 (0.05) .14 |
| b | Level | 5.18 (0.06) <.01 | 4.14 (0.17) <.01 | 4.23 (0.07) <.01 |
| b | Slope | -0.09 (0.02) <.01 | -0.10 (0.03) <.01 | -0.10 (0.01) <.01 |
| b | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 |
| b | Level \* education | --- | 0.14 (0.02) <.01 | 0.15 (0.01) <.01 |
| b | Level \* height | --- | 1.50 (0.77) .05 | 0.01 (0.00) <.01 |
| b | Level \* smoking | --- | --- | 0.03 (0.05) .57 |
| b | Level \* cardio | --- | --- | -0.12 (0.06) .03 |
| b | Level \* diabetes | --- | --- | -0.20 (0.06) <.01 |
| b | Slope \* age | -0.00 (0.00) .01 | -0.00 (0.00) .01 | -0.00 (0.00) <.01 |
| b | Slope \* education | --- | 0.00 (0.00) .38 | 0.00 (0.00) .11 |
| b | Slope \* height | --- | -0.05 (0.14) .74 | 0.00 (0.00) .96 |
| b | Slope \* smoking | --- | --- | -0.02 (0.01) .04 |
| b | Slope \* cardio | --- | --- | 0.00 (0.01) .75 |
| b | Slope \* diabetes | --- | --- | 0.01 (0.01) .12 |
| a | Var (Level) | 206.43 (155.43) .18 | 202.67 (154.91) .19 | 41.61 (1.77) <.01 |
| a | Var (Slope) | 7.25 (5.82) .21 | 7.21 (5.81) .21 | 0.15 (0.04) <.01 |
| a | Var (Residual) | 22.91 (15.27) .13 | 22.72 (15.09) .13 | 16.83 (0.78) <.01 |
| a | Covar (Level, Slope) | -34.75 (31.34) .27 | -34.51 (31.24) .27 | -0.56 (0.20) <.01 |
| b | Var (Level) | 0.02 (2.24) .99 | 0.02 (2.25) .99 | 0.81 (0.06) <.01 |
| b | Var (Slope) | 0.00 (0.21) .99 | 0.00 (0.20) .99 | 0.00 (0.00) .57 |
| b | Var (Residual) | 22.91 (15.27) .13 | 22.72 (15.09) .13 | 1.14 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.42) .99 | -0.00 (0.39) .99 | 0.01 (0.01) .39 |
| ab | Covar (Levels) | -0.30 (8.22) .97 | -0.53 (7.08) .94 | 0.81 (0.20) <.01 |
| ab | Covar (Slopes) | -0.02 (0.21) .91 | -0.02 (0.20) .90 | 0.00 (0.00) .85 |
| ab | Covar (Residuals) | -0.46 (0.28) .10 | -0.46 (0.29) .11 | 0.25 (0.10) .01 |
|  | Correlation of Levels | -0.13 | -0.25 | 0.139 |
|  | Correlation of Slopes | -0.26 | -0.28 | 0.082 |
|  | Correlation of Residuals | -0.02 | -0.02 | 0.057 |
|  | N | 507 | 507 | 3,290 |
|  | occasions | 5 | 5 | 3 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -11,480 | -11,458 | -37,311 |
|  | AIC | 23,000 | 22,972 | 74,704 |
|  | BIC | 23,085 | 23,090 | 74,954 |

## Summary

Study = *HRS*; Gender = *male*; Process (a) = *grip*

Computed correlations:

label

process\_b

a

aeh

aehplus

Correlation of Levels

serial7

0.44

0.43

0.16

Correlation of Levels

tics

0.28

0.03

0.13

Correlation of Levels

word\_de

0.12

-0.00

0.15

Correlation of Levels

word\_im

-0.13

-0.25

0.14

label

process\_b

a

aeh

aehplus

Correlation of Slopes

serial7

0.00

0.07

0.31

Correlation of Slopes

tics

0.47

0.39

0.11

Correlation of Slopes

word\_de

-0.05

-0.07

0.29

Correlation of Slopes

word\_im

-0.26

-0.28

0.08

label

process\_b

a

aeh

aehplus

Correlation of Residuals

serial7

0.00

0.00

-0.04

Correlation of Residuals

tics

-0.02

-0.01

-0.10

Correlation of Residuals

word\_de

-0.02

-0.02

0.03

Correlation of Residuals

word\_im

-0.02

-0.02

0.06

P-values for corresponding covariances:

label

process\_b

a

aeh

aehplus

Covariance of Levels

serial7

0.80

0.82

0.00

Covariance of Levels

tics

0.99

0.97

0.65

Covariance of Levels

word\_de

0.97

1.00

0.00

Covariance of Levels

word\_im

0.97

0.94

0.00

label

process\_b

a

aeh

aehplus

Covariance of Slopes

serial7

1.00

0.97

0.00

Covariance of Slopes

tics

0.98

0.52

0.31

Covariance of Slopes

word\_de

0.99

0.98

0.39

Covariance of Slopes

word\_im

0.91

0.90

0.85

label

process\_b

a

aeh

aehplus

Covariance of Residuals

serial7

0.77

0.81

0.17

Covariance of Residuals

tics

0.33

0.52

0.25

Covariance of Residuals

word\_de

0.11

0.11

0.22

Covariance of Residuals

word\_im

0.10

0.11

0.01

#Session Info

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
locale:  
[1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252  
[4] LC\_NUMERIC=C LC\_TIME=English\_United States.1252   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] knitr\_1.14 ggplot2\_2.2.0 IalsaSynthesis\_0.1.8.9000 MplusAutomation\_0.6-4   
[5] magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 formatR\_1.4 plyr\_1.8.4 highr\_0.6 tools\_3.3.1 boot\_1.3-18   
 [7] digest\_0.6.10 evaluate\_0.10 tibble\_1.2 gtable\_0.2.0 lattice\_0.20-34 texreg\_1.36.7   
[13] DBI\_0.5-1 yaml\_2.1.13 proto\_0.3-10 coda\_0.18-1 dplyr\_0.5.0 stringr\_1.1.0   
[19] htmlwidgets\_0.7 grid\_3.3.1 DT\_0.2 data.table\_1.9.6 R6\_2.2.0 rmarkdown\_1.1   
[25] gsubfn\_0.6-6 pander\_0.6.0 tidyr\_0.6.0 reshape2\_1.4.1 readr\_1.0.0 scales\_0.4.1   
[31] htmltools\_0.3.5 rsconnect\_0.5 assertthat\_0.1 testit\_0.5 colorspace\_1.2-7 xtable\_1.8-2   
[37] stringi\_1.1.2 lazyeval\_0.2.0 munsell\_0.4.3 chron\_2.3-47