BISR: physical-physical

Date: 2016-11-07

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The table reports the model of type 'aehplus', which include covariates *a*ge, *e*ducation, *h*eight, and binary covariates smoking history, cardiovascular disease, and diabetes.

The table reports relationships between levels, slopes, and residuals between the two processes in a given pair of outcomes. For each index, we report the covariances (raw meteric) and correlations (standardized metric).

Raw covariance are reported in the form : est(se)pval star  
where  
- est is the point estimate  
- se is the standard error  
- pval is the p-value associated with the point estimate  
- star is significance indicator of the point estimate, with ., \*, \*\*, and \*\*\* denoting significance at .10, .05, .01, and .001 alpha levels, respectively

Note: cases in which correlations are not available are marked by ---

# male

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Process A | Process B |  | Cov(Levels) | Corr(Levels) | Cov(Slopes) | Corr(Slopes) | Cov(Residuals) | Corr(Residuals) |
| eas | grip | pef | 72 | 24.83(258.35), =.92 | .04( .45), =.92 | 1.16(32.16), =.97 | .08(2.22), =.97 | 65.69(48.29), =.17 | .24( .17), =.15 |
| elsa | grip | fev | 3091 | .71( .16), <.01 \*\*\* | .19( .04), <.01 \*\*\* | .00( .00), =.14 | .42( .34), =.22 | .02( .05), =.61 | .01( .03), =.61 |
| hrs | grip | pef | 236 | 50.22(36.70), =.17 | .11( .08), =.16 | -.18(1.15), =.87 | -.16(1.17), =.89 | 25.03(15.29), =.10 | .12( .07), =.09 . |
| lasa | grip | pef | 800 | 153.76(29.38), <.01 \*\*\* | .24( .04), <.01 \*\*\* | .29( .10), <.01 \*\* | .57( .10), <.01 \*\*\* | -12.42(7.99), =.12 | -.05( .03), =.11 |
| map | fev | grip | 309 | 1.79( .50), <.01 \*\*\* | .25( .06), <.01 \*\*\* | -.00( .03), =.91 | -.04( .40), =.91 | -.02( .06), =.78 | -.01( .05), =.78 |
| octo | grip | pef | 138 | 28.29(27.56), =.30 | .15( .14), =.29 | .10( .58), =.87 | .10( .60), =.87 | 10.21(6.67), =.13 | .14( .09), =.11 |
| satsa | grip | fev | 299 | .64( .33), =.05 . | .21( .10), =.04 \* | .00( .00), =.14 | .74( .45), =.10 . | .28( .08), <.01 \*\*\* | .15( .04), <.01 \*\*\* |
| eas | pef | gait | 72 | -64.30(734.65), =.93 | -.04( .44), =.93 | -7.98(29.04), =.78 | -.45(1.86), =.81 | 101.38(125.95), =.42 | .18( .21), =.40 |
| elsa | fev | gait | 3091 | .03( .01), <.01 \*\*\* | .24( .05), <.01 \*\*\* | .00( .00), =.21 | .34( .31), =.26 | .00( .00), =.59 | .01( .02), =.59 |
| hrs | pef | gait | 236 | 3.90(1.37), <.01 \*\* | .30( .10), <.01 \*\* | .13( .06), =.05 . | .84( .48), =.08 . | .45( .67), =.50 | .05( .08), =.50 |
| lasa | pef | gait | 800 | -40.60(5.66), <.01 \*\*\* | -.36( .06), <.01 \*\*\* | -.78( .33), =.02 \* | -.40( .09), <.01 \*\*\* | -4.31(4.73), =.36 | -.03( .03), =.37 |
| map | fev | gait | 309 | .02( .01), =.01 \*\* | .25( .08), <.01 \*\* | .00( .00), =.39 | -.46( .62), =.45 | .00( .00), =.90 | -.01( .05), =.90 |
| octo | pef | gait | 132 | -70.87(34.39), =.04 \* | -.38( .15), =.01 \*\* | -1.34( .94), =.15 | -.79( .17), <.01 \*\*\* | -6.48(11.36), =.57 | -.05( .08), =.56 |
| satsa | gait | fev | 265 | -.06( .20), =.76 | -.10( .34), =.76 | -.00( .00), =.40 | -.55( .62), =.38 | .04( .05), =.48 | .05( .07), =.48 |
| eas | grip | gait | 72 | 23.89(37.41), =.52 | .32( .45), =.48 | .18(2.28), =.94 | .24(2.86), =.93 | 7.76(10.60), =.46 | .21( .25), =.39 |
| elsa | grip | gait | 3091 | .34( .07), <.01 \*\*\* | .28( .05), <.01 \*\*\* | .00( .00), =.15 | .55( .40), =.18 | .01( .02), =.43 | .02( .03), =.43 |
| hrs | grip | gait | 236 | .12( .09), =.18 | .15( .11), =.17 | .00( .00), =.89 | .10( .76), =.89 | .04( .04), =.39 | .06( .07), =.38 |
| ilse | grip | tug | 252 | 2.92(3.48), =.40 | .29( .43), =.51 | .07( .08), =.33 | .84(1.24), =.50 | -4.96(1.95), =.01 \* | -.28( .10), =.01 \*\* |
| lasa | grip | gait | 800 | -5.54(2.73), =.04 \* | -.35( .21), =.10 . | -.10( .18), =.59 | -.76( .49), =.12 | -.49( .59), =.41 | -.04( .04), =.42 |
| map | gait | grip | 309 | .60( .17), <.01 \*\*\* | .30( .08), <.01 \*\*\* | .01( .01), =.25 | .40( .34), =.24 | .00( .05), =.92 | .01( .06), =.92 |
| nuage | grip | gait | 847 | -1.87( .73), =.01 \*\* | -.20( .06), <.01 \*\*\* | -.07( .04), =.11 | -.24( .28), =.39 | -.23( .10), =.02 \* | -.05( .02), =.04 \* |
| nuage | grip | tug | 847 | -5.71(1.35), <.01 \*\*\* | -.25( .05), <.01 \*\*\* | -.20( .10), =.05 . | -.24( .12), =.05 \* | -.36( .20), =.07 . | -.04( .02), =.05 . |
| octo | grip | gait | 138 | -1.57( .68), =.02 \* | -.35( .14), =.01 \* | -.04( .05), =.33 | -.70( .51), =.17 | -.39( .27), =.16 | -.13( .09), =.14 |
| satsa | gait | grip | 265 | -2.81(2.50), =.26 | -.51( .49), =.30 | -.02( .02), =.39 | -.42( .46), =.37 | -.32( .97), =.74 | -.02( .07), =.74 |

# female

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Process A | Process B |  | Cov(Levels) | Corr(Levels) | Cov(Slopes) | Corr(Slopes) | Cov(Residuals) | Corr(Residuals) |
| eas | grip | pef | 150 | 98.73(59.72), =.10 . | .29( .15), =.05 . | .12(2.96), =.97 | .03( .80), =.97 | 11.15(9.83), =.26 | .11( .10), =.26 |
| elsa | grip | fev | 3511 | .40( .07), <.01 \*\*\* | .25( .04), <.01 \*\*\* | .00( .00), =.22 | .63( .95), =.50 | .01( .02), =.57 | .01( .02), =.57 |
| hrs | grip | pef | 285 | 53.68(17.29), <.01 \*\* | .29( .09), <.01 \*\*\* | -.38( .73), =.60 | -.52(1.12), =.64 | 9.96(8.03), =.21 | .08( .07), =.22 |
| lasa | grip | pef | 782 | 76.86(19.88), <.01 \*\*\* | .30( .07), <.01 \*\*\* | .00( .22), =.99 | .03(1.49), =.98 | 5.73(7.32), =.43 | .03( .04), =.43 |
| map | fev | grip | 931 | .41( .13), <.01 \*\* | .13( .04), <.01 \*\* | .00( .01), =.66 | .16( .37), =.66 | .01( .02), =.53 | .02( .03), =.53 |
| octo | grip | pef | 270 | 44.94(10.25), <.01 \*\*\* | .39( .07), <.01 \*\*\* | .23( .25), =.36 | .34( .37), =.36 | 1.29(3.23), =.69 | .02( .06), =.69 |
| satsa | grip | fev | 408 | .06( .12), =.59 | .06( .11), =.58 | .00( .00), =.94 | .03( .35), =.94 | .17( .04), <.01 \*\*\* | .15( .04), <.01 \*\*\* |
| eas | pef | gait | 150 | 67.25(237.19), =.78 | .05( .19), =.78 | -10.98(12.32), =.37 | -.55( .52), =.28 | 29.78(37.80), =.43 | .10( .12), =.44 |
| elsa | fev | gait | 3511 | .02( .00), <.01 \*\*\* | .22( .04), <.01 \*\*\* | .00( .00), =.46 | .40( .25), =.11 | .00( .00), =.45 | .02( .03), =.44 |
| hrs | pef | gait | 285 | 2.10( .88), =.02 \* | .29( .11), =.01 \* | .02( .04), =.63 | .58(1.21), =.63 | .96( .42), =.02 \* | .14( .06), =.02 \* |
| lasa | pef | gait | 782 | -19.83(9.76), =.04 \* | -.23( .13), =.09 . | -.16( .13), =.24 | -.25( .20), =.21 | -3.88(4.68), =.41 | -.02( .03), =.40 |
| map | fev | gait | 931 | .01( .00), <.01 \*\*\* | .24( .05), <.01 \*\*\* | .00( .00), =.94 | -.03( .39), =.94 | .00( .00), =.58 | .02( .03), =.57 |
| octo | pef | gait | 263 | -79.93(19.18), <.01 \*\*\* | -.35( .08), <.01 \*\*\* | -3.79(12.86), =.77 | -.58( .91), =.52 | -3.43(10.65), =.75 | -.02( .07), =.75 |
| satsa | gait | fev | 366 | -.24( .16), =.12 | -.38( .23), =.10 | -.00( .00), =.34 | -.38( .36), =.30 | -.03( .04), =.46 | -.04( .06), =.46 |
| eas | grip | gait | 147 | 16.31(16.92), =.34 | .17( .17), =.31 | .46( .74), =.53 | .38( .50), =.44 | .51(1.84), =.78 | .03( .10), =.78 |
| elsa | grip | gait | 3511 | .30( .03), <.01 \*\*\* | .36( .03), <.01 \*\*\* | .00( .00), =.04 \* | .50( .10), <.01 \*\*\* | .03( .01), =.01 \*\* | .06( .02), <.01 \*\* |
| hrs | grip | gait | 285 | .09( .06), =.12 | .21( .13), =.12 | .00( .00), =.90 | .13(1.00), =.90 | .01( .02), =.72 | .02( .05), =.72 |
| ilse | grip | tug | 224 | -1.39(5.52), =.80 | -.06( .23), =.80 | .04( .14), =.80 | .40(1.63), =.80 | 1.68(2.37), =.48 | .10( .14), =.47 |
| lasa | grip | gait | 782 | -3.91(1.27), <.01 \*\* | -.34( .07), <.01 \*\*\* | -.02( .02), =.31 | -.68(1.60), =.67 | .09( .40), =.82 | .01( .03), =.82 |
| map | gait | grip | 931 | .41( .07), <.01 \*\*\* | .30( .05), <.01 \*\*\* | -.01( .01), =.17 | -.46( .31), =.15 | -.00( .02), =.81 | -.01( .03), =.81 |
| nuage | grip | gait | 934 | -1.75( .40), <.01 \*\*\* | -.18( .04), <.01 \*\*\* | -.04( .04), =.37 | -.10( .12), =.37 | -.13( .09), =.15 | -.04( .03), =.15 |
| nuage | grip | tug | 934 | -7.37(1.16), <.01 \*\*\* | -.27( .04), <.01 \*\*\* | -.17( .12), =.14 | -.26( .17), =.13 | -.10( .24), =.67 | -.01( .03), =.67 |
| octo | grip | gait | 270 | -2.08( .55), <.01 \*\*\* | -.33( .07), <.01 \*\*\* | -.01( .03), =.84 | -.04( .24), =.86 | -.17( .18), =.35 | -.04( .05), =.33 |
| satsa | gait | grip | 366 | -1.06(2.67), =.69 | -.16( .42), =.69 | -.00( .02), =.96 | -.03( .59), =.96 | -.08( .71), =.91 | -.01( .05), =.91 |

# male

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Study | Process A | Process B |  | Corr(Levels) | Corr(Slopes) | Corr(Residuals) |
| eas | grip | pef | 72 | .04( .45), =.92 | .08(2.22), =.97 | .24( .17), =.15 |
| elsa | grip | fev | 3091 | .19( .04), <.01 \*\*\* | .42( .34), =.22 | .01( .03), =.61 |
| hrs | grip | pef | 236 | .11( .08), =.16 | -.16(1.17), =.89 | .12( .07), =.09 . |
| lasa | grip | pef | 800 | .24( .04), <.01 \*\*\* | .57( .10), <.01 \*\*\* | -.05( .03), =.11 |
| map | fev | grip | 309 | .25( .06), <.01 \*\*\* | -.04( .40), =.91 | -.01( .05), =.78 |
| octo | grip | pef | 138 | .15( .14), =.29 | .10( .60), =.87 | .14( .09), =.11 |
| satsa | grip | fev | 299 | .21( .10), =.04 \* | .74( .45), =.10 . | .15( .04), <.01 \*\*\* |
| eas | pef | gait | 72 | -.04( .44), =.93 | -.45(1.86), =.81 | .18( .21), =.40 |
| elsa | fev | gait | 3091 | .24( .05), <.01 \*\*\* | .34( .31), =.26 | .01( .02), =.59 |
| hrs | pef | gait | 236 | .30( .10), <.01 \*\* | .84( .48), =.08 . | .05( .08), =.50 |
| lasa | pef | gait | 800 | -.36( .06), <.01 \*\*\* | -.40( .09), <.01 \*\*\* | -.03( .03), =.37 |
| map | fev | gait | 309 | .25( .08), <.01 \*\* | -.46( .62), =.45 | -.01( .05), =.90 |
| octo | pef | gait | 132 | -.38( .15), =.01 \*\* | -.79( .17), <.01 \*\*\* | -.05( .08), =.56 |
| satsa | gait | fev | 265 | -.10( .34), =.76 | -.55( .62), =.38 | .05( .07), =.48 |
| eas | grip | gait | 72 | .32( .45), =.48 | .24(2.86), =.93 | .21( .25), =.39 |
| elsa | grip | gait | 3091 | .28( .05), <.01 \*\*\* | .55( .40), =.18 | .02( .03), =.43 |
| hrs | grip | gait | 236 | .15( .11), =.17 | .10( .76), =.89 | .06( .07), =.38 |
| ilse | grip | tug | 252 | .29( .43), =.51 | .84(1.24), =.50 | -.28( .10), =.01 \*\* |
| lasa | grip | gait | 800 | -.35( .21), =.10 . | -.76( .49), =.12 | -.04( .04), =.42 |
| map | gait | grip | 309 | .30( .08), <.01 \*\*\* | .40( .34), =.24 | .01( .06), =.92 |
| nuage | grip | gait | 847 | -.20( .06), <.01 \*\*\* | -.24( .28), =.39 | -.05( .02), =.04 \* |
| nuage | grip | tug | 847 | -.25( .05), <.01 \*\*\* | -.24( .12), =.05 \* | -.04( .02), =.05 . |
| octo | grip | gait | 138 | -.35( .14), =.01 \* | -.70( .51), =.17 | -.13( .09), =.14 |
| satsa | gait | grip | 265 | -.51( .49), =.30 | -.42( .46), =.37 | -.02( .07), =.74 |

# female

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Study | Process A | Process B |  | Corr(Levels) | Corr(Slopes) | Corr(Residuals) |
| eas | grip | pef | 150 | .29( .15), =.05 . | .03( .80), =.97 | .11( .10), =.26 |
| elsa | grip | fev | 3511 | .25( .04), <.01 \*\*\* | .63( .95), =.50 | .01( .02), =.57 |
| hrs | grip | pef | 285 | .29( .09), <.01 \*\*\* | -.52(1.12), =.64 | .08( .07), =.22 |
| lasa | grip | pef | 782 | .30( .07), <.01 \*\*\* | .03(1.49), =.98 | .03( .04), =.43 |
| map | fev | grip | 931 | .13( .04), <.01 \*\* | .16( .37), =.66 | .02( .03), =.53 |
| octo | grip | pef | 270 | .39( .07), <.01 \*\*\* | .34( .37), =.36 | .02( .06), =.69 |
| satsa | grip | fev | 408 | .06( .11), =.58 | .03( .35), =.94 | .15( .04), <.01 \*\*\* |
| eas | pef | gait | 150 | .05( .19), =.78 | -.55( .52), =.28 | .10( .12), =.44 |
| elsa | fev | gait | 3511 | .22( .04), <.01 \*\*\* | .40( .25), =.11 | .02( .03), =.44 |
| hrs | pef | gait | 285 | .29( .11), =.01 \* | .58(1.21), =.63 | .14( .06), =.02 \* |
| lasa | pef | gait | 782 | -.23( .13), =.09 . | -.25( .20), =.21 | -.02( .03), =.40 |
| map | fev | gait | 931 | .24( .05), <.01 \*\*\* | -.03( .39), =.94 | .02( .03), =.57 |
| octo | pef | gait | 263 | -.35( .08), <.01 \*\*\* | -.58( .91), =.52 | -.02( .07), =.75 |
| satsa | gait | fev | 366 | -.38( .23), =.10 | -.38( .36), =.30 | -.04( .06), =.46 |
| eas | grip | gait | 147 | .17( .17), =.31 | .38( .50), =.44 | .03( .10), =.78 |
| elsa | grip | gait | 3511 | .36( .03), <.01 \*\*\* | .50( .10), <.01 \*\*\* | .06( .02), <.01 \*\* |
| hrs | grip | gait | 285 | .21( .13), =.12 | .13(1.00), =.90 | .02( .05), =.72 |
| ilse | grip | tug | 224 | -.06( .23), =.80 | .40(1.63), =.80 | .10( .14), =.47 |
| lasa | grip | gait | 782 | -.34( .07), <.01 \*\*\* | -.68(1.60), =.67 | .01( .03), =.82 |
| map | gait | grip | 931 | .30( .05), <.01 \*\*\* | -.46( .31), =.15 | -.01( .03), =.81 |
| nuage | grip | gait | 934 | -.18( .04), <.01 \*\*\* | -.10( .12), =.37 | -.04( .03), =.15 |
| nuage | grip | tug | 934 | -.27( .04), <.01 \*\*\* | -.26( .17), =.13 | -.01( .03), =.67 |
| octo | grip | gait | 270 | -.33( .07), <.01 \*\*\* | -.04( .24), =.86 | -.04( .05), =.33 |
| satsa | gait | grip | 366 | -.16( .42), =.69 | -.03( .59), =.96 | -.01( .05), =.91 |

# Session Information

For the sake of documentation and reproducibility, the current report was rendered on a system using the following software.

Report rendered by koval\_000 at 2016-11-07, 11:35 -0500

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows 10 x64 (build 14393)  
  
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] ggplot2\_2.1.0 magrittr\_1.5 knitr\_1.14   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 colorspace\_1.2-7 R6\_2.2.0 highr\_0.6 stringr\_1.1.0   
 [7] plyr\_1.8.4 dplyr\_0.5.0 tools\_3.3.1 DT\_0.2 grid\_3.3.1 gtable\_0.2.0   
[13] DBI\_0.5-1 htmltools\_0.3.5 yaml\_2.1.13 lazyeval\_0.2.0 assertthat\_0.1 digest\_0.6.10   
[19] tibble\_1.2 readr\_1.0.0 formatR\_1.4 tidyr\_0.6.0 htmlwidgets\_0.7 evaluate\_0.10   
[25] rmarkdown\_1.1 stringi\_1.1.2 scales\_0.4.0