## ERRATUM

## Akira Tagaya (2019)

Tetrachoric correlation of bilateral nonmetric traits: a defect in the conventional procedure and a proposal for two alternative estimation methods. Anthropological Science, 127(1): 39-45.

I would like to notify two kinds of errors involving descriptions and results of statistical procedures in the original publication. First, for items $1,2,5,6$, and 9 listed below, the degrees of freedom of the chi-square values for model fit exceeded the correct value by one degree. Second, for items $1,3,4$, and 6 listed below, the confidence interval for the correlation coefficient of the interindividual component of liability between traits should have been estimated using not the total chisquare value for model fit but rather the increase in the chi-square value (with one degree of freedom) due to deviation of the parameter from the best fit. In addition, numbers 7 and 8 are included to correct the language.

## 1. Page 42: Table 3 should be corrected as follows.

Table 3. The $3 \times 3$ frequencies observed and estimated for different values of Pearson's correlation coefficient $R$ between inter-individual components of liability of OMB and AST. The estimates of SD of inter-individual component used for calculation were 1.20 and 1.32 , respectively.

|  | Trait expression (number of presences in the individual) |  |  |  |  |  |  |  |  |  |  | Rate of occurrence |  | Fit index |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | OMB | 0 |  | $\begin{aligned} & 0 \\ & 2 \end{aligned}$ | $\begin{aligned} & 1 \\ & 0 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | $\begin{aligned} & 1 \\ & 2 \end{aligned}$ | $\begin{aligned} & 2 \\ & 0 \end{aligned}$ | $\begin{aligned} & 2 \\ & 1 \end{aligned}$ | $\begin{aligned} & 2 \\ & 2 \end{aligned}$ | Total |  |  | $\chi^{2}$ | df | $P$ |
|  | AST | 0 | 1 |  |  |  |  |  |  |  |  | OMB | AST |  |  |  |
| Observed |  | 932 | 157 | 73 | 205 | 82 | 32 | 82 | 37 | 29 | 1629 | 0.189 | 0.167 |  |  |  |
| Best fit | $\mathrm{R}=0.443$ | 927.9 | 167.9 | 66.2 | 210.6 | 69.5 | 38.8 | 80.5 | 38.5 | 29.0 | 1629 | 0.189 | 0.167 | 5.11 | 3 | 0.164 |
| Conventional | $\mathrm{R}=0.330$ | 910.7 | 176.6 | 73.9 | 219.0 | 65.8 | 35.8 | 88.5 | 35.2 | 23.5 | 1629 | 0.189 | 0.167 | 9.77 | 3 | 0.021 |
| 95\% CI (lower) | $\mathrm{R}=0.340$ | 912.2 | 175.9 | 73.1 | 218.3 | 66.3 | 36.1 | 87.7 | 35.5 | 24.0 | 1629 | 0.189 | 0.167 | $3.84{ }^{1}$ | 1 | 0.050 |
| (upper) | $R=0.543$ | 940.7 | 162.0 | 58.5 | 205.1 | 74.3 | 41.2 | 72.4 | 41.3 | 33.5 | 1629 | 0.189 | 0.167 | $3.84{ }^{1}$ | 1 | 0.050 |

${ }^{1}$ Increase from the value of 'best fit.'
2. Page 42, left column, line 4: "df $=4, P=0.045$ " should be read as " $\mathrm{df}=3, P=0.021$."
3. Page 42 , left column, line 7 : " 0.277 or 0.597 " should be read as " 0.340 or 0.543 ."
4. Page 42 , left column, line 8: " 0.277 and 0.597 " should be read as " 0.340 and 0.543 ."
5. Page 42 , right column, line 15 : " $\mathrm{df}=2$ " should be read as " $\mathrm{df}=1$."
6. Page 43: Table 6 should be corrected as follows.

Table 6. Estimates of correlation coefficient between inter-individual components of liability compared among three methods. Chi-square statistics for goodness of fit and $95 \%$ CI were calculated using the $3 \times 3$ frequencies in Table 2 b .

| Pair of traits |  | $n$ | Rate of occurrence |  | SD |  | Tetrachoric estimate |  |  |  |  |  | Direct method |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Conventional |  |  | Side-frequency method |  |  |  |  |
| $\mathrm{T}_{1}$ | $\mathrm{T}_{2}$ |  | $\mathrm{T}_{1}$ | $\mathrm{T}_{2}$ |  |  | $\mathrm{T}_{1}$ | $\mathrm{T}_{2}$ | $R$ | $\chi^{2}{ }_{3}$ | $n^{1)}$ | $R$ | $R_{\mathrm{c}}{ }^{2)}$ | $\chi^{2}{ }_{3}$ | $R$ | $\chi^{2}{ }_{3}$ |  | CI] |
| OMB | AST |  | 1629 | 0.189 | 0.167 | 1.20 | 1.32 | 0.33 | 9.77* | 1725.3 | 0.28 | 0.45 | 5.17 | 0.44 | 5.11 | [ 0.34 | 0.54] |
|  | PNB | 1618 | 0.189 | 0.270 | 1.20 | 1.17 | 0.13 | 3.33 | 1725.9 | 0.12 | 0.21 | 1.54 | 0.21 | 1.54 | [ 0.11 | 0.32] |
|  | POS | 1590 | 0.188 | 0.160 | 1.19 | 0.72 | -0.04 | 1.43 | 1699.9 | -0.06 | -0.13 | 0.96 | -0.10 | 0.83 | [-0.25 | 0.05] |
| AST | PNB | 1832 | 0.163 | 0.267 | 1.31 | 1.16 | 0.25 | 9.18* | 1899.1 | 0.23 | 0.38 | 2.83 | 0.38 | 2.83 | [ 0.28 | 0.47] |
|  | POS | 1772 | 0.163 | 0.161 | 1.28 | 0.71 | 0.01 | 5.17 | 1850.2 | 0.01 | 0.02 | 5.09 | 0.04 | 5.01 | [-0.10 | 0.18] |
| PNB | POS | 1840 | 0.267 | 0.160 | 1.15 | 0.70 | 0.00 | 1.18 | 1920.0 | -0.01 | -0.02 | 1.28 | 0.00 | 1.18 | [-0.13 | 0.14] |
| LPF | CIV | 1212 | 0.076 | 0.074 | 0.76 | 1.48 | 0.33 | 12.76 ** | 1355.0 | 0.30 | 0.60 | 4.72 | 0.61 | 4.71 | [ 0.41 | 0.79] |
|  | CON | 809 | 0.075 | 0.321 | 0.71 | 3.20 | -0.18 | 2.06 | 941.4 | -0.12 | -0.22 | 1.49 | -0.29 | 1.11 | [-0.48 | -0.07] |
| FRG | SOF | 1564 | 0.234 | 0.613 | 2.21 | 1.58 | 0.38 | 11.03* | 1655.4 | 0.36 | 0.46 | 5.37 | 0.48 | 5.18 | [ 0.40 | 0.55] |

${ }^{1)}$ Harmonic mean of four combinations.
${ }^{2)}$ Obtained by dividing $R$ by $\mathrm{SD}_{1} \mathrm{SD}_{2} / \sqrt{ }\left[\left(\mathrm{SD}_{1}^{2}+1\right)\left(\mathrm{SD}_{2}{ }^{2}+1\right)\right]$.

* $P<0.05$; ** $P<0.01$.

7. Page 43, right column, line 13: "one freedom" should be read as "one degree of freedom."
8. Page 43, right column, line 14: "remaining freedoms" should be read as "remaining degrees of freedom."
9. Page 43, right column, line 16: "four freedoms" should be read as "three degrees of freedom."

All other results and discussions remain unchanged. I apologize for any confusion caused by my mistakes.

