Corrigendum: Mutualistic Coupling Between Vocabulary and Reasoning Supports Cognitive Development During Late Adolescence and Early Adulthood


This article contains analyses of data from the Neuroscience in Psychiatry Network cohort. The first author recently learned of a number of minor errors in the raw Wechsler Abbreviated Scale of Intelligence scores analyzed in the article (e.g., due to occasional failures to follow stopping rules and miscalculations). According to the cohort management team, those errors have been corrected. Kievit reran all of the reported analyses using the correct values. Most values changed only very slightly, and the corrected values do not materially affect any of the results of the core analyses, including key model comparisons, parameters, or inferences. This Corrigendum lists all the values being corrected and indicates where those values occur in the article. Note that none of the wording in the passages reproduced here is being changed from the original; only selected statistical values within these passages are being updated.

In the third sentence of the abstract (p. 1419), the \( N \) is being changed to 784, and the \( n \) is being changed to 563. Next, the Sample section (p. 1421) is being changed as follows:

We recruited 784 participants (401 female, 383 male; mean age: 19.05 years, range: 14.10–24.99) for the University of Cambridge-University College London Neuroscience in Psychiatry Network (NSPN) cohort. This sample size has been shown to be sufficient to fit moderately complex structural equation models with adequate power (e.g., Wolf, Harrington, Clark, & Miller, 2015). We tested 563 of these participants a second time, on average 1.48 years later (range: 0.98–2.62 years). Those who returned for a second wave did not differ significantly from those who did not return on Time 1 Vocabulary scores, \( t(369.24) = 0.44, BF_{01} = 10.21,^1 \) as well as on Time 1 Matrix Reasoning scores, \( t(368.09) = 0.51, BF_{01} = 9.85; \) sex, \( \chi^2(1, N = 784) = 0.50, BF_{01} = 9.14, \) and current or past treatments for emotional, behavioral, or mental health problems—current: \( t(275.73) = −1.46, BF_{01} = 2.19, \) past: \( t(344.07) = −1.19, BF_{01} = 2.19. \) These groups also did not significantly differ in terms of parental education—i.e., the age at which their mothers left school, \( t(157.09) = −0.87, BF_{01} = 4.89, \) or fathers left school, \( t(159.4) = −0.49, BF_{01} = 6.28. \) Participants with complete data were slightly younger at the time of first testing (\( M = 18.80 \) years) than those with incomplete data (\( M = 19.68 \) years), \( t(420.18) = −3.83, BF_{01} = 83.52 \) and had slightly higher scores on the Barratt Impulsiveness Scale (BIS, Version 11; Stanford et al., 2009; \( M_s = 63.39 \) vs. 60.48, respectively), \( t(395.25) = −3.77, BF_{01} = 92.04. \) Implementing either complete case analysis or excluding individuals with BIS scores above a cutoff of 74 (see Stanford et al., 2009, p. 387) did not meaningfully affect the model parameters or model comparisons reported here. The role of age is discussed in more detail in the Results. Prior to the study, full ethical approval was obtained from the University of Cambridge Central Ethics Committee (Reference No. 12/EE/0250).

The first paragraph of Results (p. 1423) is being changed as follows:

Raw scores and descriptive statistics for the Matrix Reasoning and Vocabulary subtests are shown in Table 1, and the association between age and
The final sentence of the fourth paragraph is also being changed: “Further control analyses suggested that the mutualism model could be equality constrained across sexes without a notable drop in model fit, $\Delta \chi^2(18) = 18.32, p = .44.$”
test given in the previous sentence was nonsignificant, whereas the updated result given here is nominally significant. Closer inspection shows that the quadratic parameter estimate itself is not significant, and the Bayesian information criterion favors the simpler model, together suggesting that the conclusion of negligible benefit of the quadratic term remains supported.) The final sentence of the seventh paragraph of Results is also being changed: “The mutualism model was preferred to all three conceptualizations of the $g$ model—ΔBIC = 29.36 (original $g$-factor model), ΔBIC = 51.85 (alternative $A$); ΔBIC = 7.27 (alternative $B$).”

Finally, at the beginning of the Discussion (p. 1427), the $N$ is being corrected to 784. The majority of the values in Table 1 (p. 1423), Table 2 (p. 1425), Figure 2 (p. 1424), Figure 3a (p. 1425), Figure 4 (p. 1426), and Figure 5 (p. 1427) are also being changed as shown here (the table notes and figure captions are remaining the same). In addition, Table S1 in the Supplemental Material is being updated.

### Table 2. Fit Statistics for Each of the Three Models

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>RMSEA</th>
<th>CFI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>$g$ factor</td>
<td>28.990</td>
<td>3</td>
<td>0.105</td>
<td>[0.076, 0.138]</td>
<td>0.982</td>
</tr>
<tr>
<td>Investment</td>
<td>26.477</td>
<td>3</td>
<td>0.100</td>
<td>[0.068, 0.136]</td>
<td>0.984</td>
</tr>
<tr>
<td>Mutual</td>
<td>0.328</td>
<td>2</td>
<td>0.000</td>
<td>[0.000, 0.040]</td>
<td>1.00</td>
</tr>
</tbody>
</table>

![Matrix Reasoning Score](image1)

![Vocabulary Score](image2)

**Fig. 2.**
Fig. 3.

Fig. 4.
Fig. 5.