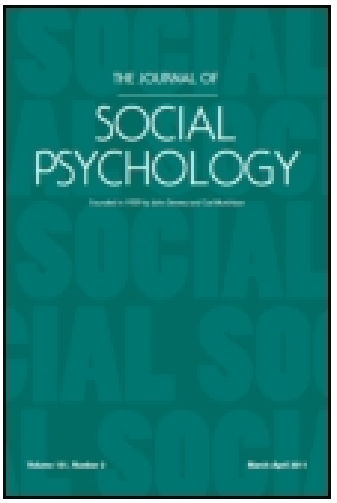

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Gender Differences in Intelligence among Chinese Children

Xiao-Yang Dai [a] & Richard Lynn [b]
[a] Psychology Department , Hunan Medical University , People's Republic of China
[b] Psychology Department , University of Ulster , Northern Ireland
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Gender Differences in Intelligence Among Chinese Children

XIAO-YANG DAI
Psychology Department
Hunan Medical University
People's Republic of China

RICHARD LYNN
Psychology Department
University of Ulster, Northern Ireland

GENDER DIFFERENCES IN CHINA on the standardization sample of the Wechsler Intelligence Scale for Children–Revised (WISC-R, Wechsler, 1974) were compared with those obtained in the United States. The WISC-R was translated into Chinese and standardized in China in 1986 (Wechsler, 1986). A few items were changed to make them suitable for China, but in general the Chinese version closely resembles the original version used in America. Approximately 100 boys and 100 girls from each of the 11 age groups (6 through 16 years) constituted the standardization sample in this study. The total number of subjects was 2,236 (1,132 boys and 1,104 girls).

The Chinese girls obtained a significantly higher mean on the coding test and a nonsignificantly higher mean on the digit span test than the Chinese boys did. Boys had significantly higher means on all other subtests. The full scale, verbal, and performance IQs for boys and girls, respectively, were 101.4 and 98.6, 101.5 and 98.5, 101.0 and 98.5; all of these differences were statistically significant at $p < .001$.

We compared these gender differences with those of the American standardization sample (Jensen & Reynolds, 1983) and found a close similarity. In both the Chinese and American samples, girls obtained their highest scores on coding, whereas boys obtained their highest scores on information. The product-moment correlation between the Chinese and American *D*s (the difference between the

Further statistical details of the Chinese data will be provided by the authors, on request.

Address correspondence to Richard Lynn, Department of Psychology, University of Ulster, Coleraine, Co. Londonderry, Northern Ireland BT52 1SA.

means divided by the pooled standard deviation) on the subtests was .96. This correlation was highly statistically significant and indicates virtually identical gender differences on the 12 tests in the two countries.

We factor-analyzed the data to see whether the factor structure of the study in China was similar to that used in the U.S. study. Factor analysis of the American WISC-R standardization sample showed the presence of two major factors that correspond broadly to the verbal and performance scales. A third, smaller factor defined principally by the coding and digit span tests was also found. For the Chinese sample, the correlation matrix was factored by principal components and rotated by varimax. The principal-components analysis showed two factors with eigenvalues above unity and a third factor with an eigenvalue of 0.94, accounting for 37.3%, 9.4%, and 7.8% of the variance, respectively. All the subtests loaded highly on the first principal component, with the coding and digit span tests having the lowest loadings, as they did in the American sample. The first principal component is generally interpreted as Spearman's *g*, and the first two rotated factors are clearly interpretable as verbal and visuospatial abilities. The third factor, largely defined by the coding and digit span tests, closely resembled the smaller, third factor present in the American samples. This third factor has been identified as memory (or "freedom from distractibility").

Gender differences on the three factors were calculated from the factor scores by weighting the *D*s on each test by the factor loadings. The results show *D*s of 0.19 ($p < .01$) in favor of boys on verbal ability, 0.30 ($p < .01$) in favor of boys on visuospatial ability, and 0.35 ($p < .01$) in favor of girls on memory. The corresponding American *D*s were 0.17, 0.14, and 0.26. *D*s for the Scottish WISC-R are similar at 0.21, 0.16, and 0.35, respectively (Lynn & Mulhern, 1991).

It has sometimes been suggested that gender differences in cognitive abilities become more pronounced after puberty. To test this suggestion, we calculated *D*s for each age group for scores on the *g*, verbal, visuospatial, and memory factors. There was no tendency for gender differences regarding verbal ability to increase with age, but there was a striking increase in the boys' visuospatial advantage, starting from age 11. There was a suggestion of a corresponding increase with age in the girls' advantage on memory; the increase was statistically significant at the 10% level but fell just short of statistical significance at the 5% level.

The high level of cross-cultural consistency in gender differences in the United States, Scotland, and China lends support to the possibility that these differences may have a biological basis.

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