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Debate

COMMENTS ON THE PAPER BY LYNN *ET AL.* ON THE INTERPRETATION OF CORRELATIONS BETWEEN IQ AND ACHIEVEMENT TEST SCORES

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In a recent article in this journal, Lynn *et al*. (2007) found a high correlation between average national IQs and achievement test scores in 67 countries and concluded 'The correlation is so high that national IQs and educational achievement appear to be measures of the same construct.' The author finds here the data do not support this conclusion.

High correlations can deceive: examples

Aggregated data. The data cited by Lynn *et al.* (2007) are aggregated (averages of large samples). Correlations of such data approach 1·0, independent of the relationship between individual tests (Lubinski & Humphreys, 1996). For example, Sexton (1961, pp. 24, 26 and 39) presented aggregated data for IQ, achievement and family income for Detroit city schools, a system with 285,000 pupils. The correlations were IQ–achievement 0·98, IQ–income 0·95, and achievement–income 0·96, all near to unity. Lubinski & Humphreys (1996) presented similar data from larger samples, where all the correlations are 0·99. Yet test scores and family income obviously are not measures of the same construct. Income–IQ, unaggregated test correlations are a modest 0·4–0·6 (Jensen, 1973). Correlations of aggregated data reflect the sample size but say little about the relationships between tests. This is the case for Lynn *et al.* (2007). Therefore their conclusion is unfounded.

Non-aggregated data. Two college admission tests, the SAT and ACT, have a non-aggregated correlation of 0·92 (Dorans *et al.*, 1997), as high as any pair of mental tests. Yet these two tests for the most part look different (Dorans, 1999). A possible explanation for the high correlation could be Binet's (1911) well known quotation, 'It matters very little what the tests (items) so long as they are numerous.' Indeed, the correlation coefficient between tests approaches unity as the number of items increases (Wilks, 1938). In fact, mental ability tests have many items, often well over a hundred.

Hence the high correlations among scores may tell more about the laws of statistics than about the content of the tests.

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