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# High IQ is sufficient to explain the high achievements in math and science of the East Asian peoples

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ABSTRACT

It is argued that it is unnecessary to propose that Confucian values explain the high achievements in math and science of the North East Asian peoples, and that these can be satisfactorily and more parsimoniously be explained by their high IQs.



I welcome Stankov's attempt to explain the high achievements in math and science of the North East Asian peoples. He notes that some of those who have been concerned with this question have attributed these, at least in part, to innate differences in ability, but he dismisses this explanation. There are two issues here. These are, first, whether the high achievements in math and science of the North East Asian peoples can be attributed to differences in ability, and second, if so, whether these differences are innate.

I discussed this question 22 years ago in relation to the high achievements in math and science of Japanese school students compared with Europeans and American whites. I concluded that the Japanese have a 4 IQ point advantage over Europeans and American whites and that "a superiority of around 4 IQ points would not make much contribution to their higher educational achievement". I concluded that the Japanese must have higher motivation for educational achievement (Lynn, 1988, p.60). Stankov has evidently reached a somewhat similar conclusion, because he too contends that the North East Asian peoples have some motivational advantage that is responsible for their high achievements in math and science.

However, I have now changed my mind and believe that high achievements in math and science of the North East Asian peoples can be explained by their higher IQs without the need to postulate any motivational advantage.

I think that Stankov is too dismissive of the position that an IQ advantage explains some of the high achievements in math and science of the East Asian peoples. He cites the study by Brouwers, Van de Vijver, and Van Hemert (2009) which reports Raven's Progressive Matrices IQs for a number of countries and gives Norway as the highest with an IQ of 132, while the Confucian Asian countries showed in the range of IQ scores between 93 (Japan) and 109 (South Korea). He concludes that "at the very least, Raven's data provide a different ranking of countries than the IQ estimates of Lynn and Vanhanen (2002, 2006)." The paper he relies on for this conclusion is seriously unsatisfactory. The paper does not identify the sources of these remarkable IQs or how they were calculated. Can anyone really believe that the Norwegians have an average IQ of 132? I suggest that Buj (1981) IQ of 100 for Norway based on the Cattell Culture Fair Lynn & Vanhanen, 2006) we give the average IQ in Norway as 100, the same as in Britain and other countries in northern and central Europe. This figure of 100 is in relation to a British IQ of 100 (sd = 15), i.e. the populations of Norway and Britain have the same IQ. Readers are invited to decide for themselves whether it is credible that the average IQ in Norway can be 132.

I do not believe there can be any dispute that the North East Asians have an average IQ a little higher than that of Europeans and American whites. In our most recent compilation of national IQs, we summarize 56 studies of the North East Asian peoples in China, Japan, Hong Kong, Korea, Taiwan and Singapore, and the median IQ of these is 105 (Lynn & Vanhanen, 2006, p.296ff). This figure is relative to a British IQ of 100. None of these studies have found that any of these countries have an IQ below 100, contrary to Brouwers et al. (2009) calculation of an IQ of 93 for Japan, for which they do not identify the source.

There can be no doubt that intelligence contributes to educational achievement. The question is how much it does so for the TIMSS and PISA results that Stankov seeks to explain. I believe that the TIMSS/PISA tests are wholly measures of intelligence, and therefore that the higher scores on these tests of the North East Asians can be wholly and

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parsimoniously explained by their high IQs. The PISA tests are of reading literacy, mathematical understanding and science understanding. Reading literacy is defined by PISA as "An individual's capacity to understand, use and reflect on written texts". It would be difficult to find a better definition of intelligence. Reading literacy appears as reading comprehension in Carroll (1993, p. 598–9) definitive text on the factors of intelligence. Carroll (1993, p. 524) gives math ability as quantitative reasoning as another component of intelligence, and he gives science understanding as general science information and also as a component of intelligence. Science understanding is highly correlated with general intelligence, e.g. at 0.68 in a study by Deary, Strand, Smith, and Fernandes (2007). Because these educational tests are components of intelligence, there is a high correlation between these and IQs. For instance, Deary et al. (2007) report a correlation of 0.81 between an intelligence test taken by approximately 70,000 British school children at the age of 11 and their educational achievement in examinations taken at age 16. This correlation is the same as that typically present between two intelligence tests. We have recently shown that scores in PISA and TIMSS are perfectly correlated ($r = 1.0$) across 108 nations (Lynn & Meisenberg, 2010). The reason for this is that they are both measures of intelligence.

The genetic explanation for the high correlation between IQ tests and educational tests is that the same genes determine both (Bartels, Rietveld, van Baal, & Boomsma, 2002; Petrill & Wilkerson, 2000; Wainwright, Wright, Geffen, Luciano, & Martin, 2005. These are designated "generalist genes" by Kovas, Harlaar, Petrill, and Plomin (2005) because they determine many expressions of cognitive ability including IQs, math, reading, science, etc. More recently, Johnson, Deary, and Iacono (2008, p.475) in a study of the high correlation between IQ measured at age 11 and GPA (Grade Point Average) at age 17 conclude that "The genetic correlation between IQ and GPA was both substantial and significant". Thus, population differences in all these cognitive tests are expressions of differences in gene frequencies for cognitive ability. National differences in scores on these tests, including the high IQs of the North East Asian peoples, therefore have an innate basis, numerous other arguments for this conclusion are given in Lynn (2006).

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