

The intelligence of Korean children adopted in Belgium

MARCEL FRYDMAN¹ and RICHARD LYNN²

¹*Université de l'État à Mons, 17 Place Warocqué, Belgium and* ²*Department of Psychology, University of Ulster, Coleraine, Co. Londonderry BT52 1SA, Northern Ireland*

(Received 9 February 1989)

Summary—Several studies have found that Oriental populations tend to have high mean IQs, strong visuo-spatial abilities but relatively weaker verbal abilities, as compared with Caucasian populations in the United States and Europe. The present paper reports data on these claims for 19 Korean infants adopted by families in Belgium. The children were tested with the WISC at a mean age of 10 yr. Their mean IQ was 118.7, the verbal IQ was 110.6 and the performance IQ 123.5. The results are interpreted as confirming those obtained from other Oriental populations.

A number of studies of the intelligence of the Oriental or Mongoloid peoples, whose native habitat lies north of the Himalayas and east of the Yenisey river, have found that their mean IQs are marginally higher than those of the Caucasian peoples of North America and Europe. In addition, there have been some reports that the Oriental peoples tend to have a distinctive pattern of intelligence consisting of high visuo-spatial abilities and weak verbal abilities, relative to Caucasian norms. Conversely, from an Oriental point of view, Caucasians tend to have weak visuo-spatial abilities and strong verbal abilities. This generalisation is based on studies of the intelligence of the Japanese, Chinese in Taiwan, Hong Kong and Singapore and ethnic Oriental Americans in the United States. Much of the evidence is summarised in Lynn (1977). A recent study confirming the existence of this ability profile among ethnic Japanese-Americans in Hawaii has been published by Nagoshi and Johnson (1987).

One of the Oriental nations about whose intelligence little is known is Korea. Only one study of the intelligence of Koreans is known to us. This is the investigation by Winick, Meyer and Harris (1975) of 112 Korean infants adopted by American families. Many of these Korean infants were malnourished and the interest of the investigators was on the possible effects of early malnutrition on later intelligence. The children were adopted before the age of three and were tested for intelligence at about the age of 10 yr. At this time those who had been severely malnourished as infants obtained a mean IQ of 102; a moderately well nourished group obtained a mean IQ of 106; and an adequately nourished group obtained a mean IQ of 112.

These differences are not conclusive evidence that malnutrition in infancy impairs intelligence, since the severely malnourished infants might have had parents with lower intelligence levels than the adequately nourished group and hence their lower IQs at age 10 yr could arguably have been due to the transmission of genetic differences. The findings are nevertheless suggestive of an adverse effect of severe early malnutrition on later intelligence. What is remarkable about the results from the point of view of the intelligence of Orientals is that adequately nourished Korean infants reared in American families achieve a mean IQ of 112.

The strength of a scientific theory is to some extent a function of the degree to which it can predict a wide and diverse range of phenomena. We have therefore asked the question of what would be the intelligence levels and strengths of the verbal and visuo-spatial abilities of Oriental children adopted and raised in Caucasian families in Continental Europe. Would the generalisations about the high mean IQ and the strong visuo-spatial and relatively weak verbal abilities of Oriental peoples be found in this hitherto unexplored domain? This is the question for which data are presented in this paper.

METHOD

The Ss of this report are 19 Korean children who were orphaned or abandoned in Korea in the mid 1970s and subsequently adopted by Belgian families. The children were obtained through a Belgian adoption agency and consisted of 5 boys and 14 girls; the mean age of adoption was 19.0 months, SD 23.9 and range of 3–72 months; the mean length of time spent with the adopted families was 93.4 months, SD 21.5 and range of 65–139 months. The mean age of the sample at the time the intelligence test was administered was 10.0 yr, age range 6.04–13.11.

The adopting parents were all middle class in the sense that they were employed in white collar occupations. Their occupational status can be divided into professional class, requiring the possession of a university degree ($N = 8$); and middle class ($N = 11$) consisting of those with no tertiary education. It is considered that the adopting parents as a group were broadly representative of the Belgian middle class.

In 1983 the children were intelligence tested with the Wechsler Intelligence Scale for Children (WISC). The French version and standardisation of the WISC were used. The performance subtests in the French WISC are identical to the American, while the verbal subtests are similar to the American in format but reworded and adapted for use in France. The French WISC was standardised in France in 1954 on a sample of 1000 children stratified by SES, geographical location and urban–rural residence. The means of the French standardisation samples on the performance subtests can be read off from the scaled score conversion tables given in the manual and are virtually identical to those of the American standardisation sample.

Table 1. Mean scaled scores of Korean adopted children on the WISC

Subtests	Mean	SD
Information	10.37	2.43
Vocabulary	9.63	2.73
Arithmetic	12.79	1.72
Similarities	12.95	2.95
Comprehension	12.00	2.52
Picture completion	13.00	2.33
Picture arrangement	13.32	2.93
Block design	13.89	2.58
Object assembly	13.26	3.19
Coding	12.58	2.71

RESULTS

The mean WISC IQ of the sample was 118.7 (SD 10.4). This is significantly higher than the mean of 100 for the general population ($t = 7.7$, $P < 0.01$). It should, however, be noted that the French WISC was standardised in 1954, that the mean IQs in all economically developed nations have been increasing over time, and that the mean IQ in Belgium will have increased over the 29 yr period between the standardisation and the testing of the Korean children in 1983. The rate of increase of the WISC in the U.S.A. has been approx. 3 IQ points per decade (Flynn, 1984). If the 3 IQ point increase per decade is assumed for Belgium for the period 1954–1983, the mean IQ of the population in 1983 would have risen to 108.7. This would leave the Korean children with a 10 IQ point advantage over indigenous Belgian children, and this remains statistically significant ($t = 3.6$, $P < 0.01$).

The mean verbal IQ on the WISC was 110.6 and the mean performance IQ was 123.5. The difference between these two IQs is statistically significant ($t = 16.1$, $P < 0.01$). The mean scaled scores for the individual subtests are given in Table 1 (the digit span subtest was not used). It is well known that the performance subtests of the WISC are not factorially pure, that picture arrangement, picture completion, block design and object assembly define a visuo-spatial factor while coding measures a different factor, possibly with a memory component or perceptual speed (see, e.g. Jensen and Reynolds, 1982). Bearing this in mind, it is noteworthy that the Korean children score consistently highest on the four visuo-spatial subtests (PA, PC, BD and OA) and somewhat lower on coding and the verbal subtests. The Korean children do best on block design, the test with the highest loading on the visuo-spatial factor (Jensen and Reynolds, 1982) and the same test that Japanese children do best on in the Japanese standardisations of both the WISC and the WISC-R (Lynn, 1977; Lynn and Hampson, 1986).

It is also possible to examine the data for possible relationships between the adopted children's IQs and the socio-economic status of the adopting parents, age at which the child was adopted and the length of time the child had lived with the adopting parents. For SES, the children adopted by professional class parents had a mean IQ of 117.5 and those of the middle class parents a mean of 119.5, making a negligible and non significant difference between the two groups. The correlation between IQ and the age at which the child was adopted was -0.22 (non-significant), and between IQ and the number of years in the adopted family $+0.13$ (NS).

DISCUSSION

The two striking features of the results are that the Korean children adopted by Belgian families achieved high IQs and were stronger on the visuo-spatial tests than on the verbal. Both of these findings are consistent with other studies of the intelligence of Oriental populations in East Asia and of ethnic Oriental immigrants in the United States.

Although the Korean children reared in Belgium clearly had a mean IQ substantially higher than that of the indigenous Caucasian population, they were brought up in middle class families. This alone would have raised their mean IQ above that of all Belgian children, assuming identical genotypes for intelligence. It is therefore a debatable point whether the mean IQ of the Korean children is higher than that of Caucasian children reared in similar middle class circumstances. When the child population is divided into two socio-economic status groups, middle class and working class, it has generally been found that middle class children obtain a mean IQ of about 105 and working class children of about 95 (see, e.g. Jensen and Figueroa, 1975; Stankov, 1987). The Korean children raised in broadly representative Belgian middle class families obtained a mean IQ of 108.7. This would suggest a genotypic Korean advantage.

A more conservative reading of the data is that there is no appreciable difference between the intelligence of Korean adoptees reared by middle class Belgian parents and that of Caucasian children reared in similar circumstances. Even this interpretation has the interesting implication that Oriental children, in spite of being a racial minority in a Western culture, achieve just as high levels of general intelligence as Caucasian children. The Belgian evidence confirms the American view that Oriental children achieve pretty much the same intelligence levels as Caucasian children despite supposed handicaps of minority status, built-in test bias in favour of white middle class Caucasians, etc.

The second interesting feature of the results is the intelligence profile of the Korean adoptees consisting of high visuo-spatial ability and relatively weak verbal ability. The striking feature of this result is that it is the reverse of the pattern typically found in children reared in middle class families. Normally middle class children obtain higher verbal than visuo-spatial IQs. For instance, in the French adoption study carried out by Dumaret (1985), children adopted by middle class families showed substantially larger gains on verbal tests than on visuo-spatial as compared with their siblings raised in working class families. Similarly, Jensen and Reynolds' (1982) analysis of the standardisation data of the American WISC-R showed that middle class children performed better on the verbal than on the visuo-spatial factor. It is easy to understand why middle class children tend to be relatively superior on the verbal abilities. It is because the cognitive skills of vocabulary, general information, verbal comprehension, arithmetic and so forth are taught both formally and informally in families and particularly in middle class families, whereas the visuo-spatial abilities are not.

How, therefore, can the relatively high visuo-spatial abilities and low verbal abilities of the Korean children reared in middle class Belgian families be explained? We propose that it is most plausibly interpreted as a genetically programmed

pattern of abilities of Oriental peoples which has already been found in Japan and among ethnic Orientals in the United States. Korean children adopted in Belgium are a further instance of the robustness of this ability pattern in Oriental populations.

REFERENCES

- Dumaret A. (1985) IQ, scholastic performance and behaviour of sibs raised in contrasting environments. *J. Child Psychol. Psychiat.* **26**, 553–580.
- Flynn J. R. (1984) The mean IQ of Americans: massive gains 1932 to 1978. *Psychol. Bull.* **95**, 29–51.
- Jensen A. R. and Figueroa R. A. (1975) Forward and backward digit-span interaction with race and IQ: predictions from Jensen's theory. *J. Educ. Psychol.* **67**, 882–893.
- Jensen A. R. and Reynolds C. R. (1982) Race, social class and ability patterns on the WISC-R. *Person. individ. Diff.* **3**, 423–438.
- Lynn R. (1977) The intelligence of the Japanese. *Bull. Br. Psychol. Soc.* **30**, 69–72.
- Lynn R. and Hampson S. (1986) The structure of Japanese abilities: an analysis in terms of the hierarchical model of intelligence. *Curr. Psychol. Res. Rev.* **4**, 309–322.
- Nagoshi C. T. and Johnson R. C. (1987) Cognitive abilities profiles of Caucasian vs Japanese subjects in the Hawaii family study of cognition. *Person. individ. Diff.* **8**, 581–583.
- Stankov L. (1987) Level I/Level II: a theory ready to be archived. In *Arthur Jensen: Consensus and Controversy* (Edited by Mogdil S. and Mogdil C.). Fulmer Press, New York.
- Winick M., Meyer K. K. and Harris R. C. (1975) Malnutrition and environmental enrichment by early adoption. *Science* **190**, 1173–1175.