

## REACTION TIMES SHOW THAT BOTH CHINESE AND BRITISH CHILDREN ARE MORE INTELLIGENT THAN ONE ANOTHER<sup>1</sup>

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*Summary.*—British children were faster than Chinese on those RTs that correlated with IQ among Chinese, and vice versa. If reaction times measure neurological processes, white children have better Chinese brains than the Chinese, and vice versa. A more plausible explanation of these results would be to posit cultural differences in what IQ measures, or RT strategies, or both.

Lynn, Chan, and Eysenck (1991) do not discuss a striking anomaly in their data or its implications. In my Table 1, I rank their 14 reaction time parameters in terms of the magnitude of their correlations with IQ as measured by the Standard Progressive Matrices. I have numbered these parameters to make evident the fact that the rank order for Hong Kong Chinese and British children is radically different, indeed, the rank order correlation is actually negative (-0.29).

Lynn, *et al.* assert that the fact that Hong Kong children had faster reaction times than British children, plus a higher mean IQ, suggests that the former have an intelligence advantage that is neurologically based. My Table 1 takes the time differences, expressed in *SDs* with a negative value showing British children were faster on a particular parameter, and weights them in terms of the magnitude of the correlation between the relevant parameter and IQ. The sum of the weighted products shows: when Hong Kong correlations with IQ are used, the results suggest that British are neurologically superior for intelligence; when British correlations are used, Hong Kong children can be said to be neurologically superior. In other words, whatever parameters correlate best for IQ within one group suggest that the *other* group is neurologically superior for intelligence!

Measuring the magnitude of these putative and conflicting intelligence advantages is necessarily speculative. Using values from Table 1, the typical British IQ advantage over the 14 parameters is  $.037 \text{ SDs}$  ( $-8.75 \div 238 = .037$ ). The typical Hong Kong Chinese advantage is  $.143 \text{ SDs}$  ( $39.94 \div 279 = .143$ ). Lynn (1987) at least has argued that during the ice ages, Chinese were selected out for genes for IQ from an ancestral population in which Chinese and whites were undifferentiated. To take the limiting case, assume that the intelligence advantage is neurological and that obtaining low correlations between these parameters and IQ is because these are imperfect measures of neurological superiority. Then we would use the average correlations from Table 1 to allow for regression effects:  $.037 \div .17 = .216 \text{ SDs}$ , or British superior by 3.24 IQ points;  $.143 \div .20 = .716 \text{ SDs}$ , or Chinese superior by 10.74 IQ points. Again, all this is speculative but the important thing to note is that those parameters which correlate best with IQ for Chinese signal a British intelligence advantage of some .56 to 3.24 points; those that correlate best with IQ for British signal a Chinese advantage of 2.15 to 10.74 points.

How to explain this anomaly? First, assume that reaction time parameters do measure neurological factors correlated with mental ability. Then the most obvious explanation is that the test used, Raven's Standard Progressive Matrices, cannot cross cultural distance and is measuring different mental abilities in the two groups. Using a sporting analogy, imagine that rugby in China placed great emphasis on strength in the forwards, while rugby in Britain was much more a matter of mobility among the backs. Assume that Chinese are more mobile than the British,

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British stronger than the Chinese. If so, using Chinese correlations between physical parameters and rugby success would show British as superior players, while British correlations would show Chinese as superior. The anomaly is explained by the fact that good performance at rugby is measuring different physical abilities in the two groups.

TABLE 1  
USING CORRELATIONS OF RT/MT WITH IQ TO MEASURE WHO  
IS NEUROLOGICALLY SUPERIOR FOR INTELLIGENCE

Parameters, No./Label	Correla- tion With IQ		Time Difference		Weighted Product
Hong Kong					
7 CRT (SD)	29	x	-.12	=	-3.48
3 SRT (SD)	24	x	-.25	=	-6.00
5 CRT	23	x	+.87	=	+20.01
8 CMT (SD)	23	x	-.37	=	-8.51
6 CMT	21	x	-.08	=	-1.68
2 SMT	20	x	-.50	=	-10.00
4 SMT (SD)	19	x	-.52	=	-9.88
1 SRT	18	x	+.16	=	+2.88
10 OMT	16	x	-.25	=	-4.00
11 ORT (SD)	15	x	+.16	=	+2.40
9 ORT	13	x	+.61	=	+7.93
12 OMT (SD)	08	x	-.55	=	-4.40
14 ORT-SRT	07	x	+.60	=	+4.20
13 CRT-SRT	02	x	+.89	=	+1.78
	17 M				-8.75 Σ
	238 Σ				
Britain					
5 CRT	34	x	+.87	=	+29.58
9 ORT	29	x	+.61	=	+17.69
11 ORT (SD)	27	x	+.16	=	+4.32
6 CMT	26	x	-.08	=	-2.08
1 SRT	25	x	+.16	=	+4.00
10 OMT	25	x	-.25	=	-6.25
14 ORT-SRT	22	x	+.60	=	+13.20
2 SMT	20	x	-.50	=	-10.00
12 OMT (SD)	17	x	-.55	=	-9.35
13 CRT-SRT	14	x	+.89	=	+12.46
8 CMT (SD)	13	x	-.37	=	-4.81
4 SMT (SD)	12	x	-.52	=	-6.24
7 CRT (SD)	09	x	-.12	=	-1.08
3 SRT (SD)	06	x	-.25	=	-1.50
	20 M				+39.94 Σ
	279 Σ				

Second, assume that the Raven Matrices measure the same mental abilities in the two groups. Then the most obvious explanation is that reaction time parameters are not measuring neurological factors but rather differing cognitive strategies. Imagine that, when people perform

on this apparatus, they cognize a "target plan," they fleetingly think about where they are to put a finger. If Chinese distribute that planning equally before and after they move off the home button, and British do it primarily before they move off the home button, one would anticipate the following: (1) British would have slower RTs than Chinese, but faster MTs; (2) British would have higher cognitive loading on RT than MT; (3) Chinese would have about equal cognitive loadings on each. This is, in fact, what the results show. In all three categories, choice, odd-man-out, and simple, the British "lose" on RT, "win" on MT, and in every instance, the RT correlation with IQ is higher than the MT correlation. The Chinese correlations for RT and MT are roughly the same. More detailed analysis, for example, of the parameters numbered 13 and 14, would add confirmation.

However, no matter what explanation we choose, the anomaly in Lynn, *et al.*'s data challenges their most significant inference that their results provide evidence that Hong Kong children have an intelligence advantage over British children that is neurologically based.

#### REFERENCES

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