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Black–White differences on the g -factor in South Africa: a “Jensen Effect” on the Wechsler Intelligence Scale for Children — revised

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Abstract

A test is made to determine whether South African Black–White differences on various tests of cognitive performance are like the Black–White differences in the United States in being positively associated with a test’s g loadings, where g is the general factor of intelligence. Data are analyzed from Skuy, Schutte, Fridjhon and O’Carroll [Skuy, M., Schutte, E., Fridjhon, P., & O’Carroll, S. (2001). Suitability of published neuropsychological test norms for urban African secondary school students in South Africa. *Personality and Individual Differences*, 30, 1413–1425] of 154 13- to 15-year-old secondary school students in Soweto, Johannesburg, on the Wechsler Intelligence Scale for Children–Revised (WISC-R). The more highly correlated a sub-test was with g , the more it predicted the African–White difference ($r = 0.77, p = 0.05$). The effect remained even when the Vocabulary sub-test was excluded or when g was extracted from the Black rather than from the White standardization sample ($r = 0.60, P < 0.05$), as it did as well if Spearman’s rho was used instead of Pearson’s r (g from Whites = 0.74, g from Blacks = 0.74, $P < 0.005$). Understanding observed Black–White differences around the world requires new research on the nature and nurture of g . © 2001 Elsevier Science Ltd. All rights reserved.

For nearly 100 years the average mean score on intelligence tests in the US has been about 18 points [1.2 standard deviations (S.D.s)] lower for Blacks than for Whites (Herrnstein & Murray, 1994; Jensen, 1998; Levin, 1997; Rushton, 2000). The Black–White IQ difference turns out to be higher on tests of high- g than it is on tests of low- g (g is the general factor of intelligence). Jensen (1980, p. 535) formally designated this as “Spearman’s hypothesis,” because Spearman (1927, p. 379) was the first to suggest it. Subsequently, Osborne (1980) dubbed it the “Spearman–Jensen

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hypothesis” because it was Jensen who brought Spearman’s hypothesis to widespread attention, and it was Jensen who did all the empirical work confirming it. More recently, Rushton (1998) proposed that when a significant correlation occurs between g -factor loadings and variable X , the result be termed a “Jensen Effect,” because otherwise there is no name for it, only a long explanation of how the effect was achieved.

The Black–White difference on the g -factor is the best known of all the Jensen Effects. In his latest book, *The g Factor*, Jensen (1998, Chapter 11) summarizes the results from 16 independent data sets on a total of nearly 45,000 Blacks and 245,000 Whites derived from 149 psychometric tests in which g loadings consistently predict the magnitude of the Black–White difference ($r = +0.62$). This is borne out even among 3-year-olds administered eight sub-tests of the Stanford-Binet. The rank correlation between g loadings and the Black–White differences is $+0.71$ ($P < 0.05$). Even when the g loading is calculated from performance on elementary cognitive (reaction-time) tasks which correlate with IQ (such as moving the hand to press a button to turn off a light, which all children can do in less than 1 second), the correlations between the g loadings of these tasks and the Black–White differences range from $+0.70$ to $+0.81$.

Since the studies on which Jensen (1998) based his analysis were almost all carried out in the United States, this might be a phenomenon of limited interest with its explanation sought in local conditions. Lynn and Owen (1994), however, carried out a study in South Africa of over 1000 secondary school students using the Junior Aptitude Test, a group-administered paper-and-pencil test consisting of 10 sub-tests (four verbal, six nonverbal). They found the African Black–White differences of two S.D.s correlated $+0.62$ ($P < 0.05$) with the g -factor extracted from the Black sample (although only $+0.23$ with g extracted from the White sample).

It is perhaps surprising that more studies of the g factor have not been carried out among Blacks in Africa because African Blacks turn out to have average IQ scores substantially below even those of African Americans. The question of African test performance came to attention in the US when *The bell curve* (Herrnstein & Murray, 1994, pp. 288–289) examined an often stated hypothesis: “The test scores of American blacks have been depressed by the experience of slavery and African blacks will be found to do better (Herrnstein & Murray, 1996, p. 565).” However, black Africans turned out to average substantially below black Americans in intelligence test scores.

The bell curve cited Lynn’s (1991) review of 11 studies from East, West, and Southern Africa reporting an average IQ of 70 (median = 75), 15 points (one S.D.) lower than the mean of 85 typically found for African Americans and 30 points (two S.D.s) lower than the mean of 100 typically found for Whites. The tests used included the Standard Progressive Matrices (SPM), the Colored Progressive Matrices (CPM, a simpler version of the SPM), the Army Beta, the Junior Aptitude, and the Culture Fair.

Many subsequent studies have corroborated the low mean test scores of Africans (reviewed in Lynn, 1997, in press). For example, in South Africa, Owen (1992) gave Raven’s Standard Progressive Matrices (SPM) without time limits to 1056 White and 1093 African 14-year-olds. Lynn (1997) estimated that these data yield a mean African IQ of 72 using the percentile equivalents from the SPM standardization data of British Whites. Another study, by Zindi (1994), a Zimbabwean, matched 204 black Zimbabwean and 202 white English pupils from London inner-city schools for age (12–14 years old), sex, and educational level, both samples being characterized as “working class.” Despite the fact that the White sample was below average for the Whites, with a mean IQ measured by the WISC-R of 95, the African–White difference was 1.07 S.D.s on the