

## Research Article

# Black Americans Reduce the Racial IQ Gap

## Evidence From Standardization Samples

William T. Dickens<sup>1</sup> and James R. Flynn<sup>2</sup>

<sup>1</sup>*Economic Studies, Brookings Institution, Washington, DC, and* <sup>2</sup>*Department of Political Studies, University of Otago, Dunedin, New Zealand*

**ABSTRACT**—*It is often asserted that Black Americans have made no IQ gains on White Americans. Until recently, there have been no adequate data to measure trends in Black IQ. We analyzed data from nine standardization samples for four major tests of cognitive ability. These data suggest that Blacks gained 4 to 7 IQ points on non-Hispanic Whites between 1972 and 2002. Gains have been fairly uniform across the entire range of Black cognitive ability.*

No one can really trace the Black-White IQ gap in the United States back to its origins. Estimates for 1917 and 1943 are based on military data subject to a host of biases, and estimates since 1945 are based almost entirely on averaging studies, none of which compared nationally representative samples taking the same test at two different times (Herrnstein & Murray, 1994). Rushton and Jensen (2005) recently stated that the IQ difference between Black and White Americans stands at 1.1 standard deviations and is as large today as it was nearly 100 years ago. We believe that the racial IQ gap may have been about 1.1 standard deviations in the late 1960s. Two data sets from nationally representative samples, the data of the 1965 Coleman Report (Jensen, 1980, p. 479) and the standardization data for the 1972 Wechsler Intelligence Scale for Children–Revised (WISC-R; Harcourt Assessment, 2005b), yield an average Black-White IQ gap of 1.108 standard deviations. More recently, Flynn (1987) analyzed military data and found that Blacks gained 3 points on Whites between 1940 and 1960, but this estimate was tentative.

### DATA

The inclusion of Blacks in recent standardization samples means that better data are now available. To examine whether

U.S. Blacks have made any IQ gains on U.S. Whites, we obtained results from the following: (a) the 1972, 1989, and 2002 standardizations of the Wechsler Intelligence Scale for Children, called the WISC-R, WISC-III, and WISC-IV, respectively (Harcourt Assessment, 2005b); (b) the 1978 and 1995 standardizations of the Wechsler Adult Intelligence Scale (WAIS), called the WAIS-R and WAIS-III (Harcourt Assessment, 2005b); (c) the 1980 and 1997 standardizations of the Armed Forces Qualification Test (AFQT; U.S. Department of Defense, 2005); and (d) the 1985 and 2001 standardizations of the Stanford-Binet, called the SB-4 and SB-5 (Riverside Publishers, 2005; Thorndike, Hagen, & Sattler, 1986, pp. 34–36). Results by race are not available for previous standardizations. The publishers of the Wechsler and the Stanford-Binet tests provided sample sizes, mean IQs, and standard deviations by age group for Whites and Blacks. The U.S. Department of Defense provided sample weights, individual test scores, and information on subjects' age, race, and ethnicity for the two standardizations of the AFQT. Summary data are in Appendix A.

The AFQT is not administered individually, but it is one of the most highly *g*-loaded tests in use (*g* refers to the general intelligence factor). Scores on the AFQT correlate with scores on individual classic IQ tests more highly than scores on the classic tests correlate with one another (Herrnstein & Murray, 1994, pp. 580–585). The *g* measured by the AFQT is skewed toward crystallized *g* (the tools and skills that intelligent people tend to acquire), but the same is true of the Wechsler tests (Jensen, 1987, p. 96).

In estimating values for Black IQ, we used the convention that sets the White mean at 100 and the White standard deviation at 15. For example, if pre-race Blacks were 1.1 White standard deviations below Whites, this convention puts their IQ at 83.5.

### RACE AND SAMPLES

Whenever we refer to Whites, we mean non-Hispanic Whites. Hispanics score below other Whites, and in recent years, their

Address correspondence to James R. Flynn, Department of Political Studies, University of Otago, Dunedin, New Zealand, e-mail: jim.flynn@stonebow.otago.ac.nz.

numbers have increased dramatically in the United States. Were they not excluded, the Black-White IQ gap would show a decline irrespective of any gains made by Blacks. The data for the 1972 WISC-R and the 1978 WAIS-R give values for White IQ that do not exclude non-Hispanic Whites. We adjusted for this by raising the White means by 0.70 and 0.62 IQ points, respectively. Appendix A describes how we arrived at these values. The adjustments made little difference, increasing the estimated rate of gain by less than 0.03 IQ points per year.

We examined whether shifting racial-group memberships might affect our results. Black/non-Black marriages increased from about 1% of marriages in 1970 to 4.5% in 1990 (Farley, 1995; Staples, 1985). This means that the percentage of Black children with half-White ancestry would rise as we moved from those who were tested in 1980 to those who were tested in 2000. For the moment, take it on faith that the relevant Black-White IQ gap is less than 15 points. If such children scored halfway between the Black and White means, they would be 7.5 IQ points above the Black mean. Arithmetic shows that the increase of such children (up 3.5%) would cause a rise of 0.263 IQ points ( $0.035 \times 7.5 = 0.263$ ). In addition, perhaps Blacks who can pass for White are less likely to wish to do so today. If children whose parents passed for White decided to declare themselves Black, and if their parents provided environments in which those children matched the White mean of 100, each such child would bring an extra 15 IQ points as he or she entered the Black population. However, the number of such cases must be very small. If 1% more Blacks fall into this category today than in 1972, they would cause a rise of 0.15 IQ points. In sum, shifting group membership is probably not a very important influence on any recent changes in the Black-White IQ gap.

The performance of the two races could also be affected by changes in test content. The Wechsler and Stanford-Binet organizations assured us that no item or subtest has been added or deleted with the intention of influencing the racial IQ gap. Between 1980 and 1997, the AFQT changed from a pencil-and-paper test to a computerized test. However, in 1997, a large sample was randomly allocated between the two tests, and Segall (1997, pp. 192–193) found that the computerized test gave neither Blacks nor Whites any statistically significant advantage. Finally, Jensen (1992) has shown that Black-White differences tend to be larger on tests that correlate more highly with *g*. The correlation between test scores and *g* rose by 12% from the SB-4 to the SB-5 (Roid, 2003, p. 108), rose by 1% from the WISC-R to the WISC-IV, declined by 5% from the WAIS-R to the WAIS-III (Harcourt Assessment, 2005a), and was the same in the 1980 and 1997 versions of the AFQT (U.S. Department of Defense, 2005). If anything, there was a slight increase in the *g* loading of the tests over time.

The Wechsler and Stanford-Binet manuals show meticulous sampling of schools and careful weighting to ensure that standardization samples matched census data. Up to age 15, virtually all American children are in school and can be sampled

and counted. One qualification that should be noted is that unlike the SB-4 sample, the SB-5 sample included special-education and limited-English-proficiency groups. Because a higher percentage of Blacks than Whites are in these categories, their inclusion would lower the SB-5 Black mean and deflate the SB estimate of Black IQ gains.

Adults pose sampling problems, but individual data on the AFQT allow a test of their significance. Neal (in press) found that the 1980 National Longitudinal Survey of Youth (NLSY) sample contained a sizable group of undereducated Blacks who did not attempt many items on the AFQT. No such group was present in the 1997 NLSY sample, so a comparison of these two samples would overestimate Black gains. However, our results are not based on the NLSY samples. They are based on the older Profile of American Youth (PAY) samples used to norm the AFQT. We checked to see whether a similar bias was present in the PAY data. If it were, we would expect to see disproportionately large gains among the lowest-scoring Blacks. Another possible bias is that over the years, more and more Blacks may have become too isolated to locate. Therefore, fewer below-average Blacks might have been present in the 1997 PAY sample than in the 1980 PAY sample. Weighting against census data would not be a corrective because there would also be fewer below-average Blacks located by the census as time passed. If this bias were present, we would expect the more recent sample to show greater gains below than above the median, with gains tailing off the further above the median we go.

Neither of these distortions is present in the data. Figure 1 presents Black IQ gains on Whites on the AFQT, giving a value for each percentile of the Black AFQT distribution. Gains are relatively uniform across the entire distribution of Black ability, at least from the 3rd to the 88th percentiles. Only the bottom 2% show heightened gains, but they are only slightly greater than gains at other points in the distribution.

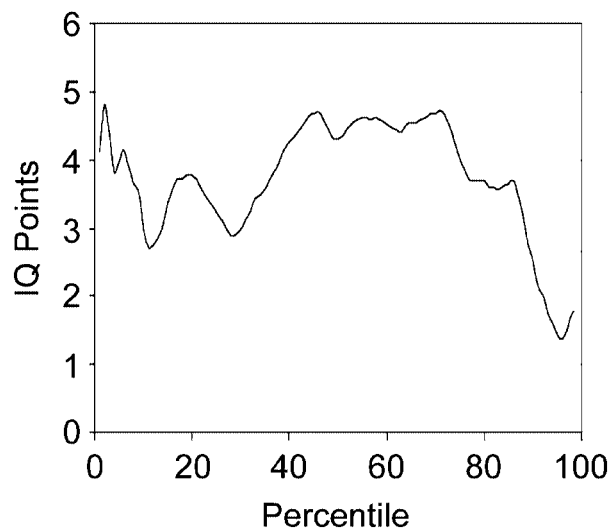
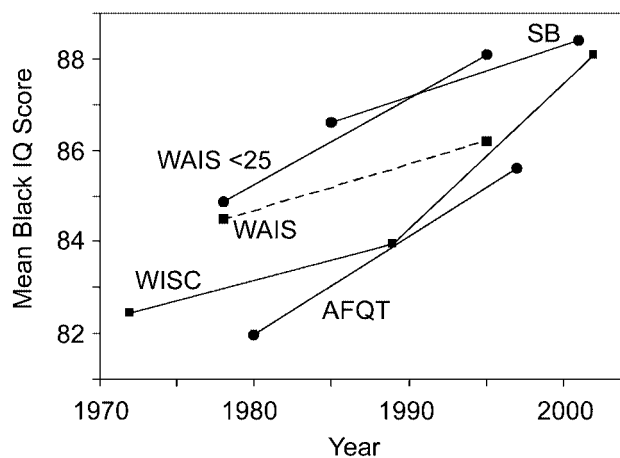


Fig. 1. Blacks' IQ gains on Whites by percentile. Results shown are from the Armed Forces Qualification Test from 1980 through 1997.



**Fig. 2.** IQ scores for Blacks across three decades (White average = 100). Results are shown for the Armed Forces Qualification Test (AFQT), the Stanford-Binet (SB), the Wechsler Adult Intelligence Scale (WAIS), and the Wechsler Intelligence Scale for Children (WISC). For the WAIS, mean scores for all ages (16–74) are indicated by the dashed line, and mean scores for individuals under age 25 are indicated by the solid line.

We also noted the fact that the number of incarcerated Blacks (mainly young males) increased between 1980 and 1997. This might make the later sample more elite than the earlier sample and inflate gains. We reviewed the NLSY data for a marked rise in the Black-White gap at the ages of heavy incarceration and found nothing.

### TRENDS FROM THE STANDARDIZATION SAMPLES

We have made available on a Web site a version of this article that contains an appendix absent here (see [http://www.brookings.edu/views/papers/dickens/20060619\\_IQ.pdf](http://www.brookings.edu/views/papers/dickens/20060619_IQ.pdf)). That appendix details the procedures used to construct the average Black IQs presented in this study. The simpler procedures described here give almost identical results and convey the rationale for the analysis.

Figure 2 shows that Black IQ rose on each of our four tests. All of these tests but the WAIS cover ages under 25 (6–16 for the WISC, 3–23 for the SB, and 18–23 for the AFQT). Figure 2

includes both the WAIS trend for all ages (16–74) and the WAIS trend for individuals under age 25. The latter is in accord with the trends for the other tests. The WISC line links two data sets, one tracing trends from the WISC-R to the WISC-III and the other tracing trends from the WISC-III to the WISC-IV. Setting aside the WAIS trend for all ages, we have a total of five measures of IQ gains by Blacks under the age of 25. If Black IQ were constant or falling, the probability of a rise in all five of these comparisons would be less than or equal to 1 in 32 (.03).

The terminal IQ values for young Blacks are as follows: The WAIS (under age 25) terminates at 88.08 in 1995, the AFQT terminates at 85.61 in 1997, the SB terminates at 88.40 in 2001, and the WISC terminates at 88.10 in 2002. These give an average of 87.55, and if all trends are projected to 2002, the average rises to 88.2. The average of the median ages is 15.

Differences between Black IQs from one standardization to another give estimates of the rate of gain. The WAIS (under age 25) shows 3.22 points gained over 17 years (rate = 0.189 points/year). The AFQT shows 3.62 points gained over 17 years (rate = 0.213). The SB shows 1.79 points gained over 16 years (rate = 0.112). The WISC shows 1.51 points gained from 1972 to 1989 (rate = 0.089) and 4.16 points gained from 1989 to 2002 (rate = 0.320). Averaging these gives a rate of gain of 0.185 points per year.

The data do not show when recent Black IQ gains began. If we take 83.5 as the value at the start of the gains, the SB trend indicates the gains began in 1957, the WAIS (under age 25) indicates 1971, the WISC indicates 1984, and the AFQT indicates 1987. The SB date is the least plausible in that the earlier gains began, the more likely that previous scholars would have noticed something.

Table 1 presents estimates of the Black rate of gain and its standard error. These estimates are based on the pooled data, calculated both with and without controls for test and age. Differential gains on the various tests are not large enough to allow us to reject the hypotheses that the gains were the same on all tests or that the gains were constant over time. Therefore, pooling the data to compute a single rate for all tests for the entire period is appropriate. However, the average scores on

**TABLE 1**  
*Annual Rate of Blacks' Gain in IQ Points*

| Sample       | Controls                   |                            |               |                           |
|--------------|----------------------------|----------------------------|---------------|---------------------------|
|              | None                       | Age <sup>a</sup>           | Test          | Test and age <sup>a</sup> |
| All ages     | 0.195 (0.046) <sup>†</sup> | 0.187 (0.025) <sup>†</sup> | 0.183 (0.031) | 0.188 (0.021)             |
| Under age 25 | 0.212 (0.057) <sup>†</sup> | 0.161 (0.033)              | 0.190 (0.033) | 0.184 (0.025)             |

**Note.** Rates of gain are the coefficients of a year variable in a regression of Black IQs by age, test, and year on year and other controls specified. The specifications of the regressions are described at [http://www.otago.ac.nz/politicalstudies/jim\\_flynn.html](http://www.otago.ac.nz/politicalstudies/jim_flynn.html). Standard errors (given in parentheses) are the maximum of those from the generalized least squares procedure (†) or White robust standard errors (unmarked).

<sup>a</sup>Controls for age were average age of the group in years, average age squared, and average age cubed. When all ages were included, a separate age polynomial was estimated for individuals over 24.

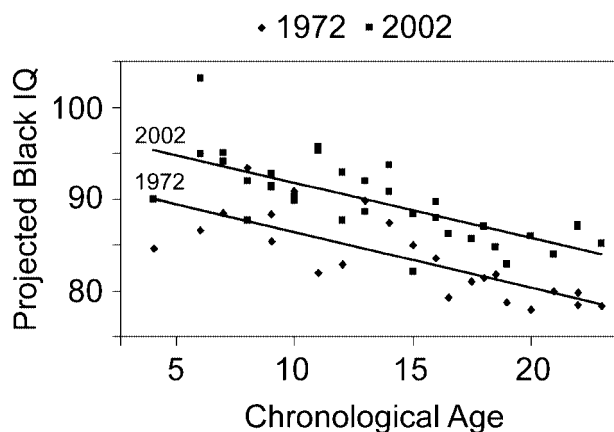


Fig. 3. Projected IQ scores (with regression lines) of Blacks of various ages in both 1972 and 2002 (White average = 100).

different tests and at different ages showed statistically significant differences. Therefore, the preferred estimates are those with controls for both age and test.

For Blacks under age 25, Table 1 shows a rate of gain of 0.184 IQ points per year. The rate of gain for Blacks 25 and older in the WAIS data is smaller, but our data yield no reliable estimate for that age group. This is because the WAIS standardization samples included only a small number of individuals ages 25 to 74. The estimated rate of gain has a 95% confidence interval of  $\pm 0.129$ . That is too large to allow us to reject the hypothesis that older Blacks had the same rate of gain as those under 25.

On the basis of projected values for Black IQ at two different times (1972 and 2002), we derived estimates of Black IQ gains on Whites. Using our test/year/age-group data points for each age from 4 to 23, we projected results before 1987 back to 1972 and projected results from 1987 and later forward to 2002. To each data point, we subtracted or added the annual rate of gain (0.184) times the difference between the year the test was administered and the year to which we were projecting. We also adjusted each value by subtracting the coefficient of the corresponding test indicator variable from that administration (with those coefficients normalized to represent the deviation from the average of all tests).

Figure 3 shows the projected Black IQ values for 2002 and for 1972 as a function of age, with an ordinary least squares regression line fitted to each set of values. In accord with the scoring convention used throughout this article, if White IQ at all ages is set at 100, the values for Black IQ in Figure 3 show that the Black-White gap widened with age in both 1972 and 2002. Indeed, the gap widened by about 11 points between ages 4 and 23.

However, across ages, Black gains on Whites over this 30-year period were much the same. For example, Black IQ at age 4 was 90 in 1972 and 95.5 in 2002, for a gain of 5.5 points. Black IQ at age 23 was 79 in 1972 and 84.5 in 2002, for a gain of 5.5 points. The pattern is clear. Blacks' gains on Whites over time did not vary with age, but were steady at 5.5 points at all ages.

Figure 3 shows that in 2002, the mean IQ of Black 15-year-olds was 88.8. Recall that 88.2 was the value suggested by our rough calculations using the terminal values in Figure 2. We derived our precise estimate of 83.5 from the Coleman Report (Jensen, 1980) and the WISC-R (Harcourt Assessment, 2005b), and their subjects were 12.5 and 11, respectively, which gives an average age of about 12 (11.75). Figure 3 puts 12-year-old Blacks at 90.5 in 2002. This implies that Blacks had gained a total of 7 points on Whites. But racial differences on the tests used in the Coleman Report may not be comparable with racial differences on the tests in our sample. It is safer to say that 12-year-old Blacks today have a mean IQ of about 90.5, and that young Blacks have gained 5.5 points on Whites over 30 years. It is worth noting that the only data set (the WISC) that covers the entire period from 1972 to 2002 gives a gain of 5.67 points.

The 95% confidence interval for the gains indicated by our regression estimates is just under  $\pm 1.5$  points. This value was derived from the standard error for the estimated rate of gain in Table 1. The calculation was as follows: First, standard error of 0.025 was multiplied by 1.98, yielding 0.0495, to set the 95% confidence limit of the rate of gain. Second, a rate of gain of  $0.184 \pm 0.0495$  put the rate between 0.1345 and 0.2335. Third, multiplying those rates by 30 years put the total gain between 4.035 points and 7.005 points. So our best estimate is that Blacks under age 25 gained 5.52 points ( $0.184 \times 30$ ) on Whites, plus or minus 1.485 points.

Blacks gained on Whites even though Whites made their own gains. From 1972 to 2002, 12 cases in which the same subjects took a later and an earlier version of a Wechsler or Stanford-Binet IQ test show an average gain for all Americans of 0.311 points per year (Flynn & Weiss, 2006). If both Blacks and Hispanics (see Appendix A for an indication of Hispanic gains) have been gaining at a faster rate than Whites, the rate of gain for non-Hispanic Whites (about 75% of the population) would be approximately 0.265. Therefore, the rate of gain for Blacks has been about 0.45 points per year ( $0.265 + 0.184$ ).

## IQ GAINS AND *g* GAINS

Some researchers attribute the predictive validity of IQ scores to their correlation with the *g* factor. Whether or not this is true, it raises the question of whether Black IQ gains on Whites reflect *g* gains. We were able to compute *g* scores for the WISC, WAIS, and AFQT by using subtest scores (there are no race data for the SB subtests). However, the AFQT subtests had virtually identical *g* loadings, which rendered correlations between the *g* loadings of the subtests and score gains on the subtests meaningless. Therefore, we were restricted to the WISC and WAIS data. To compute the *g* gap between Blacks and Whites, we took their average difference on the standardized first principal component of the subtest correlation matrix and multiplied by 15 (thus making the *g* scores equivalent to IQ scores). By comparing the *g* gap on an earlier test (e.g., the WISC-R) with

**TABLE 2**  
*Blacks' g Gains (Converted to IQ Metric) on Whites Compared with Blacks' IQ Gains on Whites*

| Gain or correlation   | WAIS-R to WAIS-III |                          | WISC-R to WISC-IV |
|---|--------------------|--------------------------|-------------------|
|   | Full sample        | Individuals under age 25 |                   |
| Gain in <i>g</i>  | 1.17               | 2.57                     | 4.67              |
| Gain in Full Scale IQ (calculated from subtest scores)                            | 1.20               | 2.82                     | 4.93              |
| Gain in Full Scale IQ (from publishers' data)                                     | 1.09               | 2.60                     | 4.96              |
| Average correlation of White-Black difference with <i>g</i> loadings <sup>a</sup> | .65                | .74                      | .86               |
| Average correlation of subtest gains with <i>g</i> loadings <sup>a</sup>          | -.28               | -.73                     | -.38              |

**Note.** WAIS-R and WAIS-III are the 1978 and 1995 standardizations of the Wechsler Adult Intelligence Scale (Harcourt Assessment, 2005b); WISC-R and WISC-IV are the 1972 and 2002 standardizations of the Wechsler Intelligence Scale for Children (Harcourt Assessment, 2005b).

<sup>a</sup>Common subtests only were included in these calculations.

the *g* gap on a later test (e.g., the WISC-IV), we estimated how much the *g* gap closed.

However, to compare *g* gains with IQ gains, we had to recalculate our values for Black IQ. The two were noncomparable because our estimates of IQ trends were based on the age-group averages publishers gave us. To achieve comparability, we had to compute IQ differences between Blacks and Whites by summing subtest differences. In fact, recalculation had little effect on the estimates of Black IQ. The reason they shifted at all is that our method of aggregating subtests differed from that used by the publishers because they had IQ data for individuals that we lacked. To achieve comparability between *g* gains and IQ gains, the correction of IQs for the presence of Hispanics in the WISC-R and WAIS-R standardization samples had to be omitted.

Table 2 shows that the estimated *g* gains of Blacks on Whites were 91.13% of the comparable IQ gains on the WAIS ( $2.57/2.82 = .9113$ ) and 94.73% of the comparable IQ gains on the WISC ( $4.67/4.93 = .9473$ ). The average of the two is 93%. Multiplying that value by the IQ gain indicates that between 1972 and 2002, Blacks made a *g* gain on Whites equivalent to 5.13 points. Table 2 also shows that when we correlated subtest gains with subtest *g* loadings (i.e., the correlations of subtest scores with *g* factor scores), we got negative rather than positive values. This means that Black gains cannot be attributed entirely to changes in *g*. From the perspective of a principal-components analysis, this conundrum might be resolved by suggesting that Blacks lost ground on factors other than *g*. We find this interpretation unconvincing and suspect that the pattern of Black gains in various areas is not related to either the *g* loadings or other factor loadings in these areas. However the trends came about, the brute fact remains: The standard measure of the *g* gap between Blacks and Whites declined virtually in tandem with the IQ gap.

## CONCLUSION

Other scholars have provided scores from Blacks and Whites who took the same test some years apart or have analyzed trends (Gottfredson, 2005; Lynn, 1996; Murray, 2005; Vincent, 1991;

Wicherts, 2005). In every case, the samples lacked the quality of standardization samples. Nonetheless, all results from these other studies are compatible with our estimate of an IQ of 90.5 for Black schoolchildren in 2002. Some of the studies show little or no change during the periods they cover, and some show Black children reaching that value well before 2002, but none cast doubt on the contention that Blacks have matched our estimate (see Appendix B). All existing data suggest that since the 1960s, Black children have made large IQ gains relative to Whites, even if the precise timing of those gains is uncertain.

The constancy of the Black-White IQ gap is a myth and therefore cannot be cited as evidence that the racial IQ gap is genetic in origin. Blacks have gained 4 to 7 IQ points on Whites over the past 30 years. Neither changes in the ancestry of the individuals classified as Black nor changes in those who identify themselves as Black can explain more than a small fraction of this gain. Therefore, the environment has been responsible. The past two decades have seen both positive and negative developments for Blacks: Gains in occupational status and school funding have been accompanied by an increase in the number of Black preschoolers in single-parent homes and by a decrease in income in those homes (Neal, in press). We believe that further Black environmental progress would engender further Black IQ gains.

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FINAL MATERIALS RECEIVED 2/23/06)

## APPENDIX A: SUMMARY DATA

Table A1 contains the summary data from the test publishers and the U.S. Department of Defense. Breakdowns by age are available upon request. The WISC-R and WAIS-R scores for Whites have not been corrected for the inclusion of Hispanics (see the next two paragraphs). Riverside Publishers requested that we note the following: First, controlling for levels of parental education substantially reduces IQ differences between ethnic groups. Second, the SB-5 standardization sample included special-education and limited-English-proficiency groups not included in the SB-4 sample. Our response to the second point is that because a higher percentage of Blacks than Whites are in these categories, the inclusion of these groups in the SB-5 standardization sample would lower the SB-5 Black mean and deflate the estimate of Black IQ gains.

All White samples consisted of non-Hispanic Whites except the 1972 WISC-R and the 1978 WAIS-R samples. Census and Current Population Survey data show that the percentage of the U.S. population that was Hispanic was 4.46 in 1970 (U.S. Bureau of the Census, 1999), 5.13 in 1973 (U.S. Bureau of the Census, 1976, Table 41, p. 34), and 5.57 in 1978 (U.S. Bureau of the Census, 1979, Table 35, p. 33). The last date corresponds exactly with the WAIS-R. If 5.57% of the total sample was Hispanic in 1978, then 6.31% of Whites were Hispanic. The percentages for 1970 and 1973 were interpolated to give a Hispanic percentage of 4.96 in 1972, at the time of the WISC-R; therefore, 5.86% of Whites in this sample were counted as Hispanic.

**TABLE A1**  
*IQ Means and Standard Deviations for Whites and Blacks*

| Test                | Mean IQ            |       | Standard deviation |       | Number of observations |       |
|---------------------|--------------------|-------|--------------------|-------|------------------------|-------|
|                     | White              | Black | White              | Black | White                  | Black |
| Stanford-Binet      |                    |       |                    |       |                        |       |
| SB-4                | 103.6              | 90.0  | 15.37              | 13.86 | 3,691                  | 711   |
| SB-5                | 102.9              | 92.1  | 13.93              | 14.47 | 2,070                  | 384   |
| WISC                |                    |       |                    |       |                        |       |
| WISC-R              | 102.3              | 86.4  | 14.08              | 12.63 | 1,870                  | 305   |
| WISC-III            | 103.5              | 88.6  | 13.86              | 12.83 | 1,543                  | 337   |
| WISC-IV             | 103.2              | 91.7  | 14.52              | 15.73 | 1,402                  | 343   |
| WAIS (all ages)     |                    |       |                    |       |                        |       |
| WAIS-R              | 101.4              | 86.8  | 14.65              | 13.14 | 1,664                  | 192   |
| WAIS-III            | 102.6              | 89.1  | 14.81              | 13.31 | 1,523                  | 247   |
| WAIS (under age 25) |                    |       |                    |       |                        |       |
| WAIS-R              | 101.2              | 87.0  | 14.28              | 13.54 | 519                    | 72    |
| WAIS-III            | 102.6              | 90.9  | 14.59              | 12.31 | 413                    | 93    |
| AFQT                |                    |       |                    |       |                        |       |
| 1980                | 100.0 <sup>a</sup> | 82.0  | 15.00 <sup>b</sup> | 13.63 | 5,533                  | 2,298 |
| 1997                | 100.0 <sup>a</sup> | 85.6  | 15.00 <sup>b</sup> | 13.23 | 2,880                  | 1,191 |

**Note.** The SB-4 and SB-5 are the 1985 and 2001 standardizations of the Stanford-Binet (Riverside Publishers, 2005; Thorndike, Hagen, & Sattler, 1986, pp. 34–36); the WISC-R, WISC-III, and WISC-IV are the 1972, 1989, and 2002 standardizations of the Wechsler Intelligence Scale for Children (Harcourt Assessment, 2005b); the WAIS-R and WAIS-III are the 1978 and 1995 standardizations of the Wechsler Adult Intelligence Scale (Harcourt Assessment, 2005b); the AFQT is the Armed Forces Qualification Test (U.S. Department of Defense, 2005).

<sup>a</sup>This value is 100 by construction. <sup>b</sup>This value is 15 by construction.

The Coleman Report of 1965 (Jensen, 1980, p. 479) showed Hispanics ages 8 to 17 at 12.79 IQ points below non-Hispanic Whites; the SB-4 of 1985 (Thorndike et al., 1986, pp. 34–36) showed Hispanics ages 2 to 23 at 8.87 points below. Interpolation of these values gave an estimate for Hispanics at the time of the WISC-R (1972)—specifically, that they were 11.42 points below non-Hispanic Whites. Multiplying 11.42 by the percentage of Whites that were Hispanic (i.e.,  $11.42 \times 0.0586$ ) put the reduction in the White score due to the inclusion of Hispanics at 0.67 IQ points.

The Coleman Report showed 17-year-old Hispanics at 12.975 points below non-Hispanic Whites; the SB-4 showed Hispanics ages 12 to 23 at 8.16 points below. Interpolation of these values gave an estimate for Hispanics at the time of the WAIS-R (1978)—specifically, that they were 9.85 points below non-Hispanic Whites. Multiplying 9.85 by the percentage of Whites that were Hispanic ( $9.85 \times 0.0631$ ) put the reduction in the White score due to the inclusion of Hispanics at 0.62 IQ points.

Adding the Hispanic corrections to the White means made little difference in the final results. The estimated rate of Black IQ gains rose by less than 0.03 IQ points per year in all regressions described in Table 1.

## APPENDIX B: TRENDS FROM OTHER SAMPLES

We have made an effort to locate every study in the literature that is informative about the change in the Black-White IQ gap on

specific tests over the last generation. Vincent (1991) presented data on Raven's Progressive Matrices for two samples. The 1973 sample consisted of 215 Whites and 135 Blacks from a rehabilitation unit in Houston, Texas (Vincent & Cox, 1974). From the data he presented, it is clear that one race or the other had more education than the group it represented, but it is not clear which race this was. The 1985 sample consisted of 631 Whites and 209 Blacks from Decatur, Alabama (Raven, 2000, pp. 19–21). Between 1973 and 1985, Black IQ (normed on Whites) went from 84 to 93, a huge gain. However, the first sample had a median age of 29, and the second had a median age of 9. Our estimates indicate that Blacks lose about 10 points on Whites between ages 9 and 29 (the rate slows down after age 24). Therefore, the 1973 mean must be raised to 94 ( $84 + 10$ ). This study sets a pattern that is repeated by others: Blacks show no gain on Whites over time, but somehow reach an IQ level well above the traditional estimate of 83.5.

Gottfredson (2005) concluded that the Black-White gap is between 0.8 and 1.2 standard deviations. She reported results from many of the samples we have analyzed, but did not have access to our most recent data, and none of her values from those samples preclude our 2002 estimates. She reported trends on one test we have not yet discussed, namely, the Wonderlic Personnel Test, and we review here all existent Wonderlic data.

The Wonderlic is a 12-min test with 50 items. Between 1970 and 2001, that test was normed four times on samples of job applicants. Increasing reluctance to record race reduced the

number of identified Whites from 123,000 to 15,600 and the number of identified Blacks from 34,000 to 2,933. E.R. Long (personal communication, January 5, 2006) noted that more Americans ages 16 to 24 remain in education (rather than seeking work) today than in the past, and that a larger number of older workers of high quality are working intermittently. He also noted that these changes affect the races unequally, and might have a differential effect on the performance of the races from one normative sample to another.

Wonderlic data from the 1970, 1983, 1992, and 2001 normative samples (Wonderlic, 2006) show a variety of trends. Blacks ages 16 to 24 began at an IQ of 84.6 in 1970, rose to 87 in 1992, and remained there in 2001. Blacks of all ages (16 and above) began at 85 in 1970 and were again at 85 in 2001. The Wonderlic value of 87 for Blacks ages 16 to 24 circa 2001 tallies with our results, which show an IQ of 86 for 20-year-old Blacks circa 2002. But although we found Blacks made gradual gains between 1970 and 2001, the Wonderlic data show a sudden rise in 1992, with no change in any other year.

Murray (2005, footnotes 41 and 44) noted that standardizations of the Kaufman Assessment Battery for Children (K-ABC) in 1983 and 2004 showed Black IQs of 93 and 92.1, respectively. The K-ABC subtests were selected to minimize the Black-White gap (Jensen, 1984) and reduce *g* loadings in favor of measuring short-term memory (Naglieri & Jensen, 1987). Jensen (1984) argued that the 1983 sample contained too great a range of ability, thus yielding an inflated standard deviation and a diminished Black-White gap (measured in standard deviation units).

The Woodcock-Johnson was normed on excellent standardization samples in 1987 and 1999. However, the race data do not come from the full samples. Rather, research samples were

taken from the full samples, and subsamples of these research samples (those who took all subtests used to compute IQ) were used to calculate *g* scores (the Woodcock-Johnson is peculiar in that it weights subtests by their *g* loading to calculate IQ scores). These subsamples included 90% of the 1987 research sample and just over 50% of the 1999 sample. Thus, all racial comparisons must be based on Blacks and Whites in the subsamples, and Blacks were more likely than Whites to be excluded from these subsamples in both years (fewer Blacks than Whites take all of the subtests). Wicherts (2005) gave us data for ages 1 to 65 in these two subsamples: Black IQ was steady at 88 between 1987 and 1999 for all ages combined; for individuals under age 25, it stood at 90 in 1987 and 88.70 in 1999.

Our analysis of nine Wechsler, Stanford-Binet, and AFQT standardization samples showed Black IQ (age 12) rising from 85 in 1972 to 90.5 in 2002 (see Fig. 3). For young Blacks, the four tests we have analyzed in this appendix give IQs of 93 in 1983 (K-ABC), 93 in 1985 (Raven's), 90 in 1987 (Woodcock-Johnson), and 87 in 1992 (Wonderlic). Averaging these values puts Black IQ at 91 circa 1987. This is an almost perfect match for our 2002 value, but it was attained 15 years too soon, and no gains were recorded from 1987 to the present. In sum, these imperfect data support the contention that Black schoolchildren have attained an IQ of 90.5, but have them reaching that value much earlier than our results from the nine standardization samples.

Lynn (1996, p. 272) used results by age to infer trends for the Black-White IQ gap. Age patterns do not chart trends over time, but rather reflect an altering Black-White gap as cohorts age. His value of 85.83 (our convention) for Blacks ages 6 to 17 in 1986 is close to our value of 84 for the WISC-III in 1989.