

## Skin Color and Intelligence in African Americans

Richard Lynn

*University of Ulster, Coleraine, Northern Ireland*

---

The relation between skin color and intelligence was examined in a representative sample of 430 adult African Americans. A statistically significant positive correlation of 0.17 was obtained between light skin color and intelligence. It is proposed that the result supports the hypothesis that the level of intelligence in African Americans is significantly determined by the proportion of Caucasian genes.

---

**KEY WORDS:** intelligence; skin color; race differences; r-K theory.

A general theory of human population differences in terms of r-K reproductive strategy has been advanced by Rushton (2000). The concept of r-K reproductive strategy is taken from evolutionary biology to describe the alternatives of producing large numbers of offspring of which few survive and designated the r strategy, and producing only a few offspring of which many more survive. Fish, amphibians and reptiles adopt the r strategy, while mammals adopt the K strategy. Species adopting the r strategy let their offspring fend for themselves while species adopting the K strategy look after their offspring during infancy and childhood. In general species adopting the K strategy have longer lives, larger brains and are more intelligent than species adopting the r strategy. In his application of this concept to humans, Rushton has proposed that Mongoloids have evolved the strongest K strategy, Negroids are stronger r strategists, while Caucasoids fall intermediate but are closer to Mongoloids. Rushton uses this general theory to explain a large number of differences between the three races including brain size, intelligence, sexuality and numbers of children. Race differences

---

Please address correspondence to Richard Lynn, Whitfield Court, Glewstone, Ross-on-Wye, Herefordshire HR9 6AS, United Kingdom; e-mail: lynnr540@aol.com.

## POPULATION AND ENVIRONMENT

within the context of r/K theory are thus of great relevance to population issues generally.

In regard to intelligence, there is considerable evidence that there are race differences consistent with Rushton's theory such that Mongoloids have the highest average IQs of about 105, Caucasoids have average IQs of around 100 and Negroids have average IQs of around 70. The world wide evidence for this generalization is presented in Lynn (1997) and Rushton (2000). In the United States it has been found in numerous studies that the average IQ of African Americans is around 85 (Jensen, 1998; Mackintosh, 1998). This is consistent with the world wide evidence because many African Americans have mixed Negroid and Causasoid ancestry and consequently fall intermediate between the two parent races. Despite these well established racial differences in average IQs, there is no consensus on whether they have a genetic basis, as demanded by Rushton's theory, or whether they are wholly environmentally determined. The case for a genetic basis has been presented by Jensen (1998) and Rushton (2000), while the case for environmental determination has been presented by Brody (1992) and Mackintosh (1998).

It has long been believed that it would be possible to resolve the disputed issue of whether genetic factors are involved in the black-white difference in intelligence by an examination of the relationship between intelligence and the amount of white ancestry among African Americans and other black and colored populations with significant amounts of white ancestry. If genetic factors are partly responsible for the black-white difference, there should be a positive association between the proportion of white ancestry and intelligence.

The first attempts to test this hypothesis consisted of taking skin color as a measure of the amount of white ancestry on the assumption that the lighter the skin the greater the proportion of white ancestors and hence of white genes. The hypothesis that genetic factors are involved in the black-white difference in intelligence predicts that there should be a positive association between light skin and intelligence. The examination of whether such an association exists would be a test of the genetic theory in so far as that the absence of an association would disconfirm the theory.

The early research on the relation between skin color and intelligence among black populations was reviewed by Shuey (1966). She summarised 18 studies of which 15 were carried out in the United States, two in Jamaica and one in Canada. Some association between lightness of skin and intelligence was found in 16 of the studies. However, the magnitude of the association between skin color and intelligence was quite low. Only four of the studies expressed the relationship in terms of correlations. These were car-

ried out by Herskovits (1926) on college students ( $N = 115$ ,  $r = .17$ , NS); by Klineberg (1928) on 7–16 year olds ( $N = 139$ ,  $r = .12$ , NS); and by Peterson and Lanier (1929) on two samples of 12 year olds ( $N = 83$ ,  $r = .18$ , NS;  $N = 75$ ,  $r = .30$ ,  $p < .01$ ). The results of the four studies are open to two interpretations. On the one hand, it could be argued that three of the four correlations are not statistically significant and the overall pattern is one of no significant association between skin color and intelligence. On the other hand, it could be argued that all four correlations show a positive association between light skin color and intelligence and that taken together they indicate a real association. The average of the four correlations is .09, so if a real association exists, the four studies show that it is weak. All of the four studies were carried out in the 1920's and the remaining studies reviewed by Shuey were quite early. All except one were carried out in the first half of the twentieth century.

Since Shuey's review, it is believed that only one study has examined the relation between skin color and intelligence among African Americans. This is the investigation by Scarr, Pakstis, Katz and Barker (1977) of 288 twins aged 10–16 years. Five intelligence tests were given and yielded the following correlations with skin color with intelligence. Progressive Matrices: .13; Peabody Picture Vocabulary Scale: .00; Columbia Test of Mental Maturity: .04; Revised Test of Figural Memory: .10; and a paired associate test:  $-.12$  (the minus sign indicates that dark skinned blacks performed better on this test). Scarr et al. conclude that none of these correlations is statistically significant assuming a sample size of 144 because the subjects were twins. They also calculated the first principal component of their five tests and report that the correlation of this with light skin color is .05 and not statistically significant. They conclude that the results show that there is no association between skin color and intelligence. Nevertheless, a different interpretation of the results is possible. It is arguable that the paired associate test is a measure of rote learning ability and not of intelligence and should be excluded. It is also arguable that of the four remaining tests the Progressive Matrices is widely regarded as the best measure of  $g$  (Jensen, 1998; Mackintosh, 1998) and the correlation of .13 between the Progressive Matrices and light skin color is statistically significant if the number of subjects is taken as 288 and not halved to 144 because they were twins. An alternative treatment of the results would be to discard the paired associates test and average the results of the four intelligence tests to give a correlation of .07 between light skin color and intelligence. This interpretation would make the results of the study consistent with the four earlier studies reviewed by Shuey finding a small positive relation between light skin and intelligence.

In addition to the studies of skin color and intelligence, there were three early studies—Bean (1906), Vint (1934), and Pearl (1934)—that found that brain size is positively associated with degree of white admixture. Because brain size is positively associated with intelligence, these results strengthen the case for an association between light skin color and intelligence.

### INTERPRETING THE EVIDENCE ON SKIN COLOR AND INTELLIGENCE

Those who have discussed this issue have drawn different conclusions from the existing evidence. Three positions can be identified. First, some scholars have concluded that there is no association between intelligence and skin color or other indices of the amount of white ancestry. Thus, Flynn (1980, p. 78) writes that “the results seem to show that white ancestry confers neither an advantage nor a disadvantage within the American black population”.

Brody (1992, p. 309) writes that “there is no relationship between the degree of white ancestry and intelligence in black samples”; Howe (1997, p. 73) writes that “the evidence clearly indicates the absence of a relationship between the degree of white ancestry and intellectual skills”; and Hill (2000, p. 1456) writes that “research has failed to uncover any association between white ancestry and intellectual ability among African Americans.” This conclusion is also drawn by Scarr et al. (1977), although they consider only their own data and not the other studies.

A second position is that the evidence indicates the existence of a true positive association between light skin color and intelligence but that the correlation is so low that it suggests hardly any genetic difference between blacks and whites. This position is adopted by Nisbett (1998, p. 89) who concludes that the research suggests a correlation of around .15 between light skin color and intelligence and that this “does not suggest that European ancestry strongly affects IQ.” The use of the word “strongly” seems to imply that this correlation suggests that the proportion of European ancestry has a weak effect on IQ.

The third position is taken by Jensen (1973, p. 223) who concludes that “these studies leave little doubt of a true relationship between skin color (and other visible features ranged along a Negroid-Caucasoid continuum) and scores on intelligence tests.” Jensen is not concerned that the correlations between skin color and intelligence are low. He argues that the measure of skin color as an index of white ancestry has such low reli-

ability that a correlation of about .20 is the highest that could be expected on the basis of the genetic hypothesis. He argues that the existence of a correlation of around this figure, or not significantly different from it, is consistent with the genetic theory although "the fact that a correlation this high or higher could arise for quite other reasons make it a weak and inconclusive type of evidence with respect to the central thesis" (p. 223). Rushton (2000) also concludes that there is a true relation between light skin color and intelligence.

One of the major problems with the existing evidence on this issue is that it is not sufficiently extensive to show conclusively whether or not a positive association is present between light skin color and intelligence. The existing studies show low positive but preponderantly non-statistically significant correlations. This allows some scholars such as Flynn, Brody, Howe, Hill and Scarr et al. to conclude that no association is present, while others such as Nisbett, Jensen and Rushton to draw the opposite conclusion that there is a true association. The problem is that the sample sizes in the studies have been too small to determine whether the predominantly low positive correlations are statistically significant. While most of the correlations are not significantly different from zero, they are also not significantly different from significant correlations. Most of the correlations lie in the limbo between zero and statistical significance. The solution to this problem is to test the hypothesis on a sufficiently large sample to determine whether a significant relation between skin color and intelligence exists. This is the principal objective of the present paper.

Before presenting new data on this issue, it should be noted that skin color is not the only index of the amount of white ancestry that has been studied in relation to intelligence in African American populations. Two studies have analysed blood groups as indices of the amount of white ancestry. In the first of these, Loehlin, Vandenberg and Osborne (1973) obtained no significant association between intelligence and 16 blood groups used to estimate the amount of white ancestry in a sample of 84 blacks. However, the average correlations between the blood group indices was  $-.03$ , indicating very low reliability of the measure. The second of these studies by Scarr et al. (1977) found correlations between the blood group index of the amount of white ancestry and intelligence closely similar to those obtained from skin color. The average of the correlations for the four intelligence tests was  $.06$  for blood groups and  $.07$  for skin color. This study also found very low reliability of blood groups as an index of the amount of white ancestry. Scarr et al. calculated the amount of white ancestry from three blood groups and from 9 blood groups and found that the correlation between the two indices was  $.11$  and not statistically significant. A final

## POPULATION AND ENVIRONMENT

study of the relation between the amount of white ancestry and intelligence among African Americans was carried out by Witty and Jenkins (1936). They obtained a sample of 63 black children from Chicago schools with IQs over 120 and had their parents report their proportion of white ancestry. They found the reported proportion of white ancestors was no different from that in the African American population as a whole. However, it is questionable whether the parents would be able to assess accurately the proportion of their white ancestors, many of whom would have been acquired in the seventeenth, eighteenth and early nineteenth centuries and of which they would have had no knowledge. For this reason, it is doubtful whether any weight can be placed on this study.

**METHOD**

The data for this study come from the Chicago based National Opinion Research Center's (NORC) opinion poll survey of 1982. The NORC surveys are based on representative samples of the adult population of the continental United States, excluding non-English speakers and those in institutions. The sampling procedures are described by Davis and Smith (1996). The NORC survey of 1982 collected information on a large number of subjects, of which the relevant ones for our present purposes are race, skin color and vocabulary size. The 1982 survey is the only one in which African Americans have been asked to assess their skin color. The racial identify questions are of two kinds. First, the respondents were asked if they would describe themselves as white, black or other. Second, if they described themselves as black they were asked whether they would describe themselves as very dark, dark brown, medium brown, light brown or very light. On the basis of their replies they were placed into one of these categories.

The vocabulary test consisted of 10 words whose meaning has to be given and each correct answer is scored one point. Vocabulary size is a good measure of intelligence and has a high correlation with the general factor, the first principal component or *g* (see, e.g. Jensen and Reynolds, 1982).

**RESULTS**

Table 1 shows the numbers of respondents in each group, their mean vocabulary scores and standard deviations. The salient features of this table

**TABLE 1****Mean Vocabulary Scores of Whites and Blacks, and Blacks Analyzed by Self-Reported Skin Color**

Group	N	Mean	SD
Whites	1245	6.18	2.06
Blacks	442	4.81	2.08
Very dark	42	4.43	1.98
Dark	104	4.09	1.68
Medium	204	5.01	2.15
Light	66	5.33	2.08
Very light	14	5.00	2.29

are as follows. Whites score significantly higher than the blacks ( $t = 11.92$ ,  $p < .001$ ). In standard deviation units, whites score .66 sd above blacks, equivalent to 10 IQ points. Among the five subgroups of blacks, light skin is significantly correlated with light skin ( $r = .17$ ,  $p < .01$ ); tested by analysis of variance, ( $F = 5.29$ ,  $p = < .001$ ). The number of blacks in the table (442) is greater than the total number of those analyzed by skin color (430) because 14 of the those who identified them selves as black did not answer the question on shade of black.

**DISCUSSION**

The results raise six points of interest. First, they go a considerable way to establishing that there is a significant association between light skin color and intelligence among African Americans. The previous research on this question is inconclusive because the studies have found low positive but for the most part statistically non-significant correlations. This is attributable to the small sample sizes in these studies. The present study has produced much the same sized correlation as those found in previous studies, viz. .17 as compared with .17 (Herskovits, 1926), .12 (Klineberg, 1928), .18 and .30 (Peterson and Lanier, 1929) and .07 (Scarr et al., 1977). But because the sample size in the present study is several times greater than in any of the previous studies, the obtained correlation of .17 is statistically significant at the 1 percent level.

2. We consider now the totality of the research literature on the correlations between skin color and intelligence. The five previous studies sum-

marized in the introduction can be summed, weighted by sample size, to give a mean correlation of .13 ( $N = 556$ ,  $p < .05$ ). This can be combined (weighting by sample size) with the sample reported in the present study to give a correlation of .15 ( $N = 996$ ,  $p < .001$ ). This should be regarded as the best estimate from the data currently available of the magnitude of the correlation between light skin color and intelligence. This highly significant correlation is corroborated by the 14 studies reviewed by Shuey (1966) that did not report correlations but of which 12 found some association between light skin and IQ. This evidence taken as a whole adds up to a fairly strong case that there is a true association between light skin color and IQ. It is therefore considered that the conclusion advanced by Scarr et al. (1977), Flynn (1980), Brody (1992), Howe (1997) and Hill (2000) cited in the introduction that there is no association between skin color and IQ is incorrect.

3. The conclusion that there is a true association between skin color and IQ is consistent with the hypothesis that genetic factors are partly responsible for the black-white difference in intelligence. The genetic hypothesis predicts that such an association should exist, so the evidence that a statistically significant correlation is present confirms the genetic hypothesis. Conversely, if the evidence showed that there is no association between light skin color and IQ, the genetic hypothesis would be disconfirmed. In terms of Popper's falsification theory of the logic of scientific explanation, the genetic hypothesis has survived an attempt at falsification and is to some degree strengthened.

4. Shuey (1996) and Nisbett (1998) have argued that while a true relation between light skin color and intelligence appears to be present, the correlation is so low that genetic factors can only make a very small contribution to the black-white intelligence difference. A contrary position is adopted by Jensen (1973, p. 222) who cites evidence that skin color is not a highly reliable index of the amount of Caucasian ancestry in African American populations and that the correlation of skin color with amount of Caucasian ancestry is about .3 to .4. The reason for this low correlation is that in hybrid populations the genes inherited from the two parent populations tend to segregate independently, in accordance with Mendel's second law. Jensen estimates that if the correlation between IQ and the amount of Caucasian ancestry is .5 and skin color is assumed to correlate at .4 with the amount of Caucasian ancestry, the highest correlation that could be found between IQ and skin color would be about .2. Scarr (1981, p. 521) using the same assumptions, estimates the highest correlation at .245. If these estimates are accepted, the obtained correlation of .15 indicates that around half to three quarters of the black-white intelligence difference can be attributed to genetic factors, as proposed by Jensen (1973).



5. While the significant correlation between skin color and intelligence is predictable from the theory that genetic factors are partly responsible for the black-white difference in intelligence, we need to consider how far a wholly environmental theory of the black-white intelligence difference could explain this association. Environmental theorists would likely advance selective discrimination by whites against darker skinned blacks as responsible factor. Environmental theorists have proposed that discrimination by whites could be responsible for impairing the intelligence of blacks. For instance, Scarr (1995) accepts that her study of black babies adopted by white parents showed no gains in IQ and have average IQs the same as those of blacks reared by blacks (Weinberg, Scarr & Waldman, 1992). To explain this she writes that "the results of the transracial adoption study allow either a social discrimination hypothesis or a racial genetic hypothesis because the low scores of the black adoptees could be due primarily to either" (p. 7). The theory is that social discrimination by whites could impair the IQs of blacks. By extension this hypothesis might propose that whites discriminate against dark skinned blacks more than against light skinned blacks, and this reduces their intelligence more.

The hypothesis that discrimination by whites is wholly or partly responsible for the low IQs obtained by blacks and for the lower IQs obtained by dark skinned as compared with light skinned blacks, is implausible on three grounds. First, it is doubtful whether there is any known mechanism by which discrimination by whites could impair the IQs obtained by blacks, particularly in the conditions studied by Weinberg, Scarr and Waldman (1992) in which black infants were adopted and reared in white middle class homes. Second, Krieger, Sidney and Coakley (1998) have studied the question of whether dark skinned blacks experience more discrimination than light skinned blacks. Their sample consisted of 1844 black men and women aged 22 to 44 divided into four categories of skin color by a Photo-volt reflectance meter and asked in a questionnaire whether they had experienced racial discrimination. There was no association between skin color and self-reported experience of discrimination for getting a job, at work, getting housing, getting medical care or in public places. Among men there was a significant association between light skin color and reporting having experienced discrimination at school (contrary to the prediction from environmentalist theory, which would predict an association between dark skin and experience of discrimination). Among working class respondents, but not among middle class, there was a significant association between dark skin color and perceived racial discrimination from the police or in the courts. It does not seem plausible that this sole item of reported discrimination could have an adverse impact on the IQs of dark skinned blacks. The

findings of this study that dark skinned blacks do not report greater experience of discrimination than that reported by light skinned blacks, with the one exception noted above, appears to disconfirm the theory that discrimination by whites can explain the correlation between skin color and IQ. A third problem with the discrimination theory is that the white majority in the United States has discriminated against Jews and Asians, yet Jews have average IQs above that of whites (MacDonald, 1994) and Asians have average IQs that are either about the same as that of whites (Flynn, 1991) or higher (Lynn, 1996). Taking this evidence as a whole, it is proposed that the higher IQs obtained by light skinned blacks cannot be plausibly explained in terms of a social discrimination or by any other environmental theory. For these reasons it is proposed that the most straightforward interpretation of the significant association between light skin color and intelligence is that it confirms the hypothesis that genetic factors are partly responsible for the black-white difference in intelligence.

6. The difference in intelligence between light and dark skinned African Americans is probably a significant factor in the difference in socio-economic status documented by Hill (2000), because intelligence is a significant determinant of socio-economic status (Herrnstein and Murray, 1994).

## REFERENCES

- Bean, R. B. (1906). Some racial peculiarities of the Negro brain. *American Journal of Anatomy*, 5, 353–432.
- Brody, N. (1992). *Intelligence*. San Diego: Academic.
- Davis, J. A., & Smith, T. W. (1996). *General Social Surveys; Cumulative Codebook*. Chicago: National Opinion Research Center.
- Flynn, J. R. (1980). *Race, IQ and Jensen*. London: Routledge and Kegan Paul.
- Flynn, J. R. (1991). *Asian Americans: Achievement Beyond IQ*. Hillsdale, NJ: Lawrence Erlbaum.
- Herrnstein, R. J., & Murray, C. (1994). *The Bell Curve*. New York: Free Press.
- Herskovits, M. J. (1926). On the relation between Negro-white mixture and standing in intelligence tests. *Pedagogical Seminary*, 33, 30–42.
- Hill, M. E. (2000). Color differences in the socio-economic status of African American men: Results of a longitudinal study. *Social Forces*, 78, 1473–1460.
- Howe, M. J. (1997). *IQ in Question*. London: Sage.
- Jensen, A. R. (1973). *Educability and Group Differences*. London: Methuen.
- Jensen, A. R. (1981). Obstacles, problems and pitfalls in differential psychology. In S. Scarr (Ed), *Race, Social Class and Individual Differences in IQ*. Hillsdale, NJ: Lawrence Erlbaum.
- Jensen, A. R., & Reynolds, C. R. (1982). Race, Social Class and ability patterns on the WISC-R. *Personality and Individual Differences*, 3, 423–438.
- Klineberg, O. (1928). An experimental study of speed and other factors in racial differences. *Archives of Psychology*, 15, No. 93.

- Krieger, N., Sidney, S., & Coakley, E. (1998). Racial discrimination and skin color in the CARDIA study: Implications for public health research. *American Journal of Public Health*, 88, 1308–1313.
- Loehlin, J. C., Vandenberg, S. G., & Osborne, R. T. (1973). Blood group genes and negro-white ability differences in ability. *Behavior Genetics*, 3, 263–270.
- Lynn, R. (1996). Racial and ethnic differences in intelligence in the United States on the Differential Ability Scale. *Personality and Individual Differences*, 20, 271–273.
- Lynn, R. (1997). Geographical Variation in Intelligence, in H. Nyborg (Ed.), *The Scientific Study of Human Nature*, Oxford: Pergamon.
- MacDonald, K. (1994). *A People that Shall Dwell Alone: Judaism as a Group Evolutionary Strategy*. Westport, CT: Praeger.
- Mackintosh, N. J. (1998). *IQ and Human Intelligence*. Oxford, UK: University Press.
- Nisbett, R. E. (1998). Race, genetics and IQ. In C. Jencks & M. Phillips (Eds.), *The Black-White Test Score Gap*. Washington, DC: Brookings Institution.
- Pearl, R. (1934). The weight of the Negro brain. *Science*, 80, 431–434.
- Peterson, J., & Lanier, L. L. (1929). Studies in the comparative abilities of whites and Negroes. *Comparative Psychology Monographs*, No. 5.
- Rushton, J. P. (2000). *Race, Evolution and Behavior*. Port Huron, MI: Charles Darwin Research Institute.
- Scarr, S. (1981). Comments and replies. In S. Scarr *Race, Social Class, and Individual Differences in IQ*. Hillsdale, NJ: Lawrence Erlbaum.
- Scarr, S. (1995). Inheritance, intelligence and achievement. *Planning for Higher Education*, 23, 1–9.
- Scarr, S., Pakstis, A. J., Katz, S. H., & Barker, W. B. (1977). Absence of a relationship between degree of white ancestry and intellectual skills within a black population. *Behavior Genetics*, 39, 68–86.
- Shockley, W. (1971). Hardy-Weinberg law generalized to estimate hybrid variance for Negro populations and reduce racial aspects of the environment-heredity uncertainty. *Proceedings of the National Academy of Sciences*, 68, 1390.
- Shuey, A. (1966). *The Testing of Negro Intelligence*. New York: Social Science Press.
- Vint, F. W. (1934). The brain of the Kenyan native. *Journal of Anatomy*, 48, 216–223.
- Weinberg, R. S., Scarr, S., & Waldman, I. R. (1992). The Minnesota transracial adoption study: A follow-up of IQ test performance at adolescence. *Intelligence*, 16, 117–135.
- Witty, P. A., & Jenkins, M. D. (1936). Intra-race testing and Negro intelligence. *Journal of Psychology*, 1, 179–192.