The IQ Wars Reconsidered

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Forty years ago, Arthur Jensen (1969) published his controversial article “How Much Can We Boost IQ and Scholastic Achievement?” Drawing on a variety of sources, he concluded that genes were sufficiently important to IQ that efforts to improve intelligence were a waste of time. He also asserted that genes contribute to social class differences in IQ. Fifteen years ago, Herrnstein and Murray (1994) offered a similar argument in The Bell Curve. Going even further, they contended that modern labor markets so effectively sort individuals by cognitive ability that the resulting inequalities are fair. Not surprisingly, these statements stimulated a stream of rebuttals. Even the American Psychological Association felt impelled to issue a position paper (Neisser et al. 1996).

It is in this tradition that psychologist Richard Nisbett has published Intelligence and How to Get It: Why Schools and Cultures Count, which opens with the claim that: “Many, if not most experts on intelligence in the late twentieth-century believed that intelligence and academic talent are substantially under genetic control . . .” (p. 1). However, this is not the interpretation offered in the American Psychological Association position paper described above. To be sure, the hereditarians have not yet died: in 2005, J. Philippe Rushton and Arthur Jensen re-iterated their genetic claims. But their viewpoint does not attract many followers in the academy. Perhaps most laypeople believe that mental ability is substantially genetic in origin. That might be one reason why Nisbett’s book received such a warm reception in the pages of The New York Times (e.g. Holt 2009, Kristof 2009a, 2009b).

The book is certainly aimed at readers of publications like The New York Times. This is evident from its title, as well as from its final chapter: “Raising Your Child’s Intelligence . . . and Your Own.” Highly technical details are placed in two appendices. The first provides an introduction to statistical terms and ideas; from it, the reader learns that Nisbett has less patience with the flaws of multiple regression than with the flaws of social scientists’ laboratory experiments. The second argues that the IQ differences between blacks and whites are entirely due to environment. This appendix could have been strengthened by incorporating some of the findings of Harvard’s Achievement Gap Initiative, especially those of Fryer and Levitt (forthcoming). Still, neither appendix is likely to hold the attention of the reader without a background in methodology, which implies that Nisbett is hoping a few social scientists will read his book, too.
Nisbett summarizes his argument at the outset: “The accumulated evidence of research, much of it quite recent, provides good reason for being far more optimistic about the possibilities of improving the intelligence of individuals, groups, and society as a whole, than was thought by most experts even a few years ago” (p. 2). What follows is essentially a literature review accompanied by critical commentary. The heart of the book examines the causes of group variation in cognitive skills and evaluates remedies for shortfalls. Nisbett focuses on the effects of home and school; he also considers culture, both in terms of class and race/ethnicity. With respect to class, he acknowledges that middle class parents engage in more behaviors that promote cognitive functioning than do lower class parents. Yet, he is not convinced that controlling for social class makes racial and ethnic differences in child rearing styles disappear. This possibility leads him to consider black culture as a source of the black-white differences in cognitive skills. Unfortunately, in pursuing this question, he draws on the work of Thomas Sowell. Sowell (1978) distinguished three types of black origins: free blacks in the United States, black slaves in the United States and black slaves in the West Indies. For reasons too complex to outline here, he argued that the historical conditions associated with these respective experiences were particularly deleterious to the culture of black slaves in the United States. Taking a cue from Sowell, Nisbett writes that during the Great Migration, the descendants of southern black slaves “overwhelmed the descendants of the free persons of color, changing the nature of the indigenous black community and bringing considerable social pathology to the cities of the North” (p. 108). This view of black migrants has been discredited for quite some time (e.g. Long and Heltman 1976). Nisbett also follows Sowell in arguing that the work ethic fostered by West Indian culture is responsible for the economic advantage that West Indian immigrants register over African Americans. But, as Model (2008) has shown, African American internal migrants are as economically successful as West Indian immigrants. Thus, West Indian attainment is better explained by the selectivity of migration than a unique work ethic. Such complexities aside, the questionable lesson Nisbett draws from West Indian success is that: “However severe racism may be, it does not prevent blacks from attaining high levels of achievement if they have good skills and favorable attitudes toward work” (p. 111).

Nisbett also considers East Asians. They are relevant because their academic achievement is well above average, though their IQs are not. Nisbett, who has written a book comparing eastern and western ways of thinking, offers a multi-faceted explanation. He credits the Asian belief that grades and test scores are largely a matter of effort, as opposed to the American belief that these are largely a matter of genes. Asians also imbue their offspring with a collectivist stance, which exhorts children to bring credit to their families. He cites studies showing that Asian teens spend far more time on homework than whites, who in turn spend more than blacks. Clearly, culture, as transmitted through child rearing practices, can boost achievement.

Finally, Nisbett considers Jews. Unlike Asians, the IQs of Ashkenazi (European) Jews are above average, but, like Asians, their academic achievement is higher than their IQ predicts. Nisbett would like to attribute these findings entirely to Jewish culture, but the evidence he presents on this point is not compelling. The best one can say is that the verdict is still out on the determinants of Jewish ability.

The book concludes with recommendations on how cognitive skills can be improved; recommendations like exercise, breast feeding, praising children for effort rather than results and avoiding inexperienced teachers. Slightly humorous is Nisbett’s suggestion that parents teach children patience by “modeling delay of gratification” (p. 188). One wonders whether the middle class persons who will choose to read this book need this advice.

What about the cognitive skills of disadvantaged minority children? As Nisbett shows, there has already been some improvement. Evidently, he believes that in order for further improvement to occur, Americans must be convinced that the remaining shortfalls are wholly environmental in origin. But this seems unnecessary, for three reasons. First, as long as some portion of group differences is attributable to environment (either directly or through
interaction with genes), environmentally-induced change is possible. Second, the improvement that has already taken place seems to have been largely unintended: it is the result of a general upgrading in school curricula and an increasingly sophisticated popular culture. Hence, additional unintended upgrading cannot be ruled out. Third, even Nisbett concedes that more research is needed before the government could justify expending large sums on intensive interventions.

In the meantime, since poverty is correlated with cognitive deprivation, Nisbett recommends that income inequality be reduced through strategies like a higher minimum wage and child tax credits. There are of course a number of additional policy innovations that would have an indirect effect on improving cognitive skills. These include lowering the minority incarceration rate, pursuing housing desegregation with vigor, and providing affordable, quality health care, especially to expectant mothers and their children. Whether American opinion leans towards nature or nurture is less important than whether these kinds of changes can occur. Unfortunately, the current political atmosphere suggests that reforms of this sort will not be implemented any time soon.

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Intelligence of Culture

Research on intelligence, normally carried out away from public eyes, periodically erupts to public consciousness with controversial works emphasizing the central role of intelligence in modern life and the role of heredity in its determination, most recently The Bell Curve (Herrnstein and Murray 1994). Richard Nisbett offers in Intelligence and How to Get It a comprehensive manifesto of the non-hereditarian position, emphasizing the role of culture in generating differences in intelligence among individuals and social classes, and along racial and ethnic lines.
The book contends that while differences in intelligence among individuals may be affected to some extent by genetic factors, and IQ differences among social classes may also reflect in part genetic differences, genes play no role in average IQ and achievement differences among people of European, African, East Asian and Jewish ancestry. Differences among racial and ethnic groups (when they exist at all) are entirely due to such cultural and environmental factors as parenting style, strength of family bonds, differential access to quality schooling, or a cultural tradition of learning. Nisbett is well acquainted with the literature of intelligence research and confesses having once held hereditarian beliefs. Some of his stated positions—that intelligence is a major factor in individual socioeconomic success, that social class differences in IQ may reflect in part genetic differences, and that heritability of IQ may be substantial in high-SES families—are compatible with the hereditarian model dominant in mainstream intelligence research. Nisbett’s “culture only” approach to understanding the black-white (B-W) IQ gap and the conspicuous successes of East-Asians and Jews is more at variance with that outlook. In this review I will discuss some of the book’s central themes in the context of the larger intelligence research literature.

**Genes, Class, and IQ**

Nisbett’s thesis that culture plays a predominant role in class and group IQ differences necessitates an engagement with the behavior genetic model that underlies mainstream intelligence research. Outlines of the elaborate corpus of linked theories, methodologies and findings of intelligence research are found in Gottfredson (1997) or Neisser et al. (1996). Jensen (1998) is a treatise-length synthesis.

Intelligence research uses behavior genetic study designs—such as comparisons of identical and fraternal twins—to distinguish three components of the variance in a measure of intelligence, such as an IQ test score. Heritability is the proportion of variance attributed to all causes of genetic variability. The shared environment is the proportion of variance attributed to all environmental influences that are shared by siblings but vary between families—variables such as social class, quality of local schools, or ethnic culture. The shared environment reflects the potential effect on IQ of raising the quality of the most disadvantaged rearing environments to the level of the most advantaged ones. It thus represents an upper bound on improvement in the trait achievable by policy intervention within the existing range of environmental variation (Rowe 1994). Finally the unshared environment represents the combined effect of factors that tend to make siblings different on the trait.

Over the past two decades a systematic pattern of change in the components of IQ variance over the life course has emerged. Heritability of IQ is typically found to be about 45 percent in childhood, with the shared environment at 35 percent. In late adulthood heritability rises to over 80 percent, and the role of the shared environment vanishes. Throughout the life course the unshared environment (which includes measurement error) represents some 20 percent of the IQ variance (Jensen 1998). Nisbett is well aware of these findings. As class and ethnic cultures vary between families and are thus part of the shared environment, the vanishing shared environment effect in adulthood seems to preclude an important role of culture in determining intelligence.

Nisbett engages this difficulty by invoking the possibility of interaction between genotype and environment. This phenomenon, denoted G × E, occurs when a characteristic of the family environment, such as SES, moderates the expression of genes so the relative values of the variance components are changed. There is evidence that heritability is lower (and the shared environment correspondingly larger) for families with lower SES or lower levels of parental education (literature cited in Nielsen 2006). Higher values of the shared environment component for lower-SES families implies greater potential effectiveness of environmental intervention in raising IQ levels of children in these families. He further argues that shared environment effects estimated from twin studies (through differential attrition of low-SES twin pairs) and from adoption studies
(because of the restricted environmental range due to screening of adoptive families) are downwardly biased.

On the other hand Nisbett emphasizes a unique French study in which researchers identified from administrative records and tested for IQ 38 cases of children put up for adoption. Cases were chosen in which the biological mother and the family of adoption could be classified as either high SES or low SES (excluding cases with intermediate SES values for either the biological mother or the adoptive family), forming an almost perfect cross-fostering design of a kind that is usually only possible in animal studies. The researchers found both a genetic effect (children of high SES biological mothers had higher IQ) and a strong family environment effect (children raised in high SES families had a 12–18 points advantage compared to low SES families) (Capron and Duyme 1989). Nisbett interprets this finding as evidence of a powerful environmental effect of social class on intellectual development.

In the last chapter Nisbett concludes that genes may explain as much as 70 percent of the variation in intelligence in upper middle class families, but perhaps as little as 10 percent of the variation in low SES families. Based on the 12–18 point difference found by Capron and Duyme (1989) he concludes that being raised in a high SES versus a low SES family can raise IQ by as much as 0.8–1.2 SD. His recognition that genes contribute importantly to variation in IQ, at least for high SES families, is a point of agreement with mainstream intelligence research. However many researchers would hesitate drawing such a strong conclusion from the single study of Capron and Duyme (1989)—because of the small sample, the young age at which the subjects were tested, and the typical pattern of vanishing shared environment by late adolescence found in most studies.

Nisbett attributes to a majority of IQ experts the belief that the class structure of modern society largely reflects innate differences in cognitive and other abilities. He agrees that intelligence is a powerful predictor of socioeconomic success, and that the relationship between social class and cognitive outcomes in children may reflect in part genetic transmission of cognitive abilities from parents to offspring. Arguing again on the basis of the 12-18 IQ points class effect in the French adoption study, however, he suggests that most of the 10 IQ point gap between children at the lower and upper thirds of the SES distribution must be due to environmental differences, not genetic transmission.

What are the specific environmental factors responsible for the class effect on IQ? Lower class disadvantages in nutrition, lead exposure, breast-feeding, quality of medical care, and alcohol consumption, as well as more frequent moving and higher stress levels, may be contributing to lower IQs and academic achievement. Nisbett emphasizes cultural factors, notably class differences in parenting. Higher-SES parents, he argues, raise their children so as to provide them with “the kinds of questioning, analytic minds they will need as professionals and high-level managers” while lower-SES parents raise children “who will eventually be workers whose obedience and good behavior will stand them in good stead with employers who are not looking to be second-guessed or evaluated.”

The Black-White IQ Gap

Two chapters and one long technical appendix address the vexing issue of the B-W IQ gap. Nisbett contends that (1) the B-W gap is, in fact, declining, and (2) the gap has a purely environmental, nongenetic basis. His exposition may be contrasted with the systematic development of the hereditarian approach in Jensen (1998, Chapters 11 and 12) and the comprehensive review by Rushton and Jensen (2005a), which Nisbett targets in his discussion, together with critical commentaries by a number of experts including Nisbett (2005) and Gottfredson (2005), and the rejoinder by Rushton and Jensen (2005b) as well as their detailed review of Nisbett’s book (Rushton and Jensen 2009).

The B-W IQ gap question originates in the large difference in average black and white IQ scores found in many studies from the beginning of IQ testing in the early 1900s. Nisbett invokes recent data indicating that the B-W IQ gap—which had been mostly stable at about one SD (15 points) for most of the
past century—decreased between 1972 and 2002. He further interprets National Assessment of Education Progress (NAEP) data showing a decrease in the combined math and reading gap as indicating a narrowing of the IQ gap. However the size and interpretation of the decline are controversial (Gottfredson 2005) and the most recent NAEP data (for 2004-2008) show no narrowing of the gap (Rushton and Jensen 2009).

In the B-W gap debate “direct” evidence for a genetic basis refers to evidence of a relationship between IQ and individual racial ancestry. It is estimated that the ancestry of African Americans is about 20 percent European. If ancestry affects IQ there should be a correlation between proportion of European genes and IQ. Nisbett points out that direct studies—invoking correlation of skin color or blood-group with IQ—are old and largely inconclusive, providing little support for or against an hereditarian conclusion (see also Loehlin 2000). This situation may soon change, with attendant ethical and political dilemmas, as it has become technically feasible to carry out direct tests of the relationship between ancestry and IQ. Molecular genetic technology allows accurate estimation of the ancestry of an individual, on the basis of a few dozen genetic markers, as a continuous measure of European (or other continental) ancestry. Such measures are routinely used in medical genetic research, where “population stratification” (racial heterogeneity) of the subject pool must be measured to control for the possibility of spurious findings (e.g., Tang et al. 2005). An exceedingly simple design—correlating IQ score of African American subjects with the estimated proportion of European ancestry—would yield results more powerful than any of the earlier studies.

The bulk of the hereditarian case for a substantial genetic basis of the B-W gap that Nisbett confronts is based on “indirect” evidence. The hereditarian “default hypothesis” is that the B-W IQ gap is determined by the same mechanisms as individual (within group) differences (Jensen 1998). Given the high heritability of IQ and negligible role of the shared environment in individual differences beyond adolescence, the mean environmental disadvantage that would have to be assumed to explain the B-W difference of about one SD is implausibly large. Jensen (1998), for example, calculates that the mean environment of blacks would have to be at the 6th percentile of the white distribution to account for the B-W IQ discrepancy, a difference much greater than any measured difference between black and white households in education, income, and other dimensions of environment quality.

The hereditarian case, and Nisbett’s refutation of it, involves a large array of interrelated findings, too numerous to be reviewed here, such as the greater gap for culture-fair than for culture-loaded tests; lower mean IQs of sub-Saharan Africans compared to U.S. blacks; worse black performance on more g-loaded subtests; greater heritability of more g-loaded subtests; more pronounced gap for subtests more susceptible to inbreeding depression; correlation of cranial capacity and brain size with IQ; larger average brain sizes for whites than blacks; correlation of IQ with speed of information processing; regression of black children to a lower mean than white children, given equal parental IQ.

The hereditarian argument that an environmental explanation of the B-W gap would have to involve average environmental differences of improbable magnitude has prompted efforts at identifying specific factors of disadvantage that would differentially affect all members of one group as compared with members of another, without affecting IQ variation within groups. Jensen (1998) has dismissed such arguments as ad hoc and unstable “factor X” theories. Nisbett, aware of this pitfall, argues from his earlier conclusion that heritability of IQ may be only 10 percent in lower-SES families, that regular environmental, especially cultural factors play a role in the B-W gap, especially for low-SES blacks. He proposes that wealth disadvantage, teenage motherhood, discrimination, caste-like status inhibiting “effort optimism,” unstable marriages, stereotype threat, parenting practices discouraging inquiry, and youth culture placing emphasis on athletic and entertainment achievement rather than academics can all contribute to black IQ disadvantage, concluding that these factors “could have
a powerful effect on how much each group does ‘mental exercise’ and on the cognitive problem-solving skills they each develop. And none of these things has to behave like the implausible factor X’’ (p. 213).

**East-Asian and Jewish Achievement**

The achievements of East-Asians, both as immigrants in the United States and in international comparisons of test scores in science and mathematics, are remarkable. Intelligence researchers estimate the average IQ of East-Asians at 106, about one third of a SD higher than Europeans (Rushton and Jensen 2009), but on the basis of a study by Flynn (2007) Nisbett reckons that East-Asian IQ is no higher than European IQ. He contends that East-Asian achievement reflects not higher IQ but a greater drive for achievement. East-Asians overachieve because of hard work and persistence in the face of failure. Their drive is rooted in turn in cultural values going back to the philosophy of Confucius, that emphasize a collective, family-oriented motivation to succeed. The central role of the family in motivating individual mobility through education is itself rooted in the traditional examination-based Chinese government service system. Nisbett more generally contrasts East-Asian values oriented toward harmonious interdependence of individuals and holistic habits of thought, with a Greek tradition of independence, individualism, and analytical habits of thought, the latter accounting for the greater scientific achievement of Western culture.

Nisbett describes how Jews or half-Jews in the United States have received 40 percent of Nobel Prizes in science, comprise 33 percent of Ivy League students, and similar proportions of the faculty at elite colleges, an over-representation of more than 15 to 1 relative to their two percent share of the population. These remarkable successes and 10-15 points IQ advantage of Ashkenazi Jews are traced to the AD 64 edict by Jewish high priest Yehoshua ben Gamla ordering that all males be able to read the Talmud. Nisbett seems to argue that this single event accounts in large part for lopsided Jewish success. Jewish culture—with its traditional respect for education and intellectual and artistic achievement and the strength of family ties (the legendary Jewish mother) is deemed sufficient explanation for high achievement, so a genetic explanation is unnecessary. There is little discussion of the specific cultural mechanisms that would translate Jewish cultural values into such conspicuous advantage. By analogy with the East-Asian case, however, Nisbett proposes a possible cumulative intergenerational process “The Asian American example of one generation building IQ on the socioeconomically advanced shoulders of the preceding generation shows that culture could account for a significant portion of the IQ gap between Jews and non-Jews—perhaps even all of it—by scaffolding to ever higher levels” (p.181).

Nisbett cites, but dismisses, an evolutionary model proposing that high Ashkenazi IQ, along with a distinctive profile of high verbal and mathematical but average spatial ability, are a product of natural selection stemming from the unusual social niche (financial and managerial occupations) occupied by Jews in Medieval Europe from about AD 800 to 1600, when all the required preconditions for such selection—low inward gene flow, unusually high economic reward for certain cognitive skills, and demographic circumstances in which economic success led to increased reproductive success—existed (Cochran, Hardy, and Harpending 2006). These authors note that there is no equivalent elevation of intelligence in Sephardic and Oriental Jews today, and that distinctive characteristics of Ashkenazi genetic diseases (such as their relation to nerve cell growth) can be explained as genetic by-products of a strong selection for IQ.

**Conclusion**

Nisbett recognizes a substantial role of IQ in socioeconomic achievement, a role of genes in individual IQ differences (up to 70 percent of the variance in high-SES families), and some role of genes in class differences. However he rejects any role of genes in IQ and achievement differences between racial and ethnic groups, specifically the B-W gap and East-Asian and Jewish success. His
demonstration is knowledgeable and captivating. However issues remain.

First, the paramount role Nisbett attributes to culture in the determination of intelligence is implausible given the accumulated findings of intelligence research that IQ is genetically heritable to a considerable degree and that the shared environment—which includes such cultural factors as family values and parenting style—has essentially zero effect on IQ after adolescence.

Second, the extraordinary degree of cultural continuity that Nisbett assumes is hardly plausible. Is it really believable that Jews—who were not renowned for high intelligence in Antiquity—would be faithfully passing on their high regard for education and intellectual prowess over centuries following Yehoshua ben Gamla’s edict in AD 64? Or that Greek analytic and individualistic habit of thought, recognizable in the thinking of Euclid or Plato, have somehow passed on through the ages and a multilingual succession of peoples to become part of the Western culture of today, down to a propensity of Western subjects to describe fish swimming in a tank less holistically than East-Asian subjects?

Nisbett’s book may well be the most sophisticated exposition of the non-hereditary thesis on the origin of IQ and achievement differences written to date. It is instructive, entertaining, and hopeful. Many readers will be encouraged by Nisbett’s thesis that IQ differences among individuals, and between classes and racial and ethnic groups, are fundamentally cultural and thus, perhaps, reducible by cultural and environmental means. There is an insatiable thirst for this message, and the book will no doubt be highly successful. Given the strengths of the hereditary case, however, the author’s claims may well be illusory.

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