

The New York Times

March 29, 2009 Sunday
Late Edition - Final

Get Smart

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SECTION: Section BR; Column 0; Book Review Desk; Pg. 9

LENGTH: 1348 words

INTELLIGENCE AND HOW TO GET IT

Why Schools and Culture Count

By Richard E. Nisbett

304 pp. W. W. Norton & Company. \$26.95

Success in life depends on intelligence, which is measured by I.Q. tests. Intelligence is mostly a matter of heredity, as we know from studies of identical twins reared apart. Since I.Q. differences between individuals are mainly genetic, the same must be true for I.Q. differences between groups. So the I.Q. ranking of racial/ethnic groups -- Ashkenazi Jews on top, followed by East Asians, whites in general, and then blacks -- is fixed by nature, not culture. Social programs that seek to raise I.Q. are bound to be futile. Cognitive inequalities, being written in the genes, are here to stay, and so are the social inequalities that arise from them.

What I have just summarized, with only a hint of caricature, is the hereditarian view of intelligence. This is the view endorsed, for instance, by Richard J. Herrnstein and Charles Murray in "The Bell Curve" (1994), and by Arthur R. Jensen in "The g Factor" (1998). Although hereditarianism has been widely denounced as racism wrapped in pseudoscience, these books drew on a large body of research and were carefully reasoned. Critics often found it easier to impugn the authors' motives than to refute their conclusions.

Richard E. Nisbett, a prominent cognitive psychologist who teaches at the University of Michigan, doesn't shirk the hard work. In "Intelligence and How to Get It," he offers a meticulous and eye-opening critique of hereditarianism. True to its self-help-like title, the book does contain a few tips on how to boost your child's I.Q. -- like exercising during pregnancy (mothers who work out tend to have bigger babies who grow up smarter, possibly because of greater brain size). But its real value lies in Nisbett's forceful marshaling of the evidence, much of it recent, favoring what he calls "the new environmentalism," which stresses the importance of nonhereditary factors in determining I.Q. So fascinating is this evidence -- drawn from neuroscience and genetics, as well as from studies of educational interventions and parenting styles -- that the author's slightly academic prose style can be forgiven.

Intellectually, the I.Q. debate is a treacherous one. Concepts like heritability are so tricky that even experts stumble into fallacy. Moreover, the relevant data come mostly from "natural experiments," which can harbor subtle biases. When the evidence is ambiguous, it is all the easier for ideology to influence one's scientific judgment. Liberals hope that social policy can redress life's unfairness. Conservatives hold that natural inequality must be accepted as inevitable. When each side wants to believe certain scientific conclusions for extra-scientific reasons, skepticism is the better part of rigor.

Nisbett himself proceeds with due caution. He grants that I.Q. tests -- which gauge both "fluid" intelligence (abstract reasoning skills) and "crystallized" intelligence (knowledge) -- measure something real. They also measure something important: even within the same family, higher-I.Q. children go on to make more money than their less-bright siblings.

However, Nisbett bristles at the hereditarian claim that I.Q. is 75 to 85 percent heritable; the real figure, he thinks, is less than 50 percent. Estimates come from comparing the I.Q.'s of blood relatives -- identical twins, fraternal twins, siblings -- growing up in different adoptive families. But there is a snare here. As Nisbett observes, "adoptive families, like Tolstoy's happy families, are all alike." Not only are they more affluent than average, they also tend to give children lots of cognitive stimulation. Thus data from them yield erroneously high estimates of I.Q. heritability. (Think: if we all grew up in exactly the same environment, I.Q. differences would appear to be 100 percent genetic.) This underscores an important point: there is no fixed value for heritability. The notion makes sense only relative to a population. Heritability of I.Q. is higher for upper-class families than for lower-class families, because lower-class families provide a wider range of cognitive environments, from terrible to pretty good.

Even if genes play some role in determining I.Q. differences within a population, which Nisbett grants, that implies nothing about average differences between populations. The classic example is corn seed planted on two plots of land, one with rich soil and the other with poor soil. Within each plot, differences in the height of the corn plants are completely genetic. Yet the average difference between the two plots is entirely environmental.

Could the same logic explain the disparity in average I.Q. between Americans of European and of African descent? Nisbett thinks so. The racial I.Q. gap, he argues, is "purely environmental." For one thing, it's been shrinking: over the last 30 years, the measured I.Q. difference between black and white 12-year-olds has dropped from 15 points to 9.5 points. Among his more direct evidence, Nisbett cites impressive studies in population genetics. African-Americans have on average about 20 percent European genes, largely as a legacy of slavery. But the proportion of European genes ranges widely among individuals, from near zero to more than 80 percent. If the racial gap is mostly genetic, then blacks with more European genes ought to have higher I.Q.'s on average. In fact, they don't.

Nisbett is similarly skeptical that genetics could account for the intellectual prowess of Ashkenazi Jews, whose average I.Q. measures somewhere between 110 and 115. As for the alleged I.Q. superiority of East Asians over American whites, that turns out to be an artifact of sloppy comparisons; when I.Q. tests are properly normed, Americans actually score slightly higher than East Asians.

If I.Q. differences are indeed largely environmental, what might help eliminate group disparities? The most dramatic results come from adoption. When poor children are adopted by upper-middle-class families, they show an I.Q. gain of 12 to 16 points. Upper-class parents talk to their children more than working-class parents do. And there are subtler differences. In poorer black families, for example, children are rarely asked "known-answer questions" -- that is, questions where the parents already know the right answer. ("What color is the elephant, Billy?") Consequently, as Nisbett observes, the children are nonplussed by such questions at school. ("If the teacher doesn't know this, then I sure don't.")

The challenge is to find educational programs that are as effective as adoption in raising I.Q. So far, Nisbett observes, almost all school-age interventions have yielded disappointing results. But some intensive early-childhood interventions have produced enduring I.Q. gains, at a cost of around \$15,000 per child per year. Yet, by the author's reckoning, it would cost less than \$100 billion a year to extend such programs to the neediest third of America's preschoolers. The gain to society would be incalculable.

Still, there are limits even to Nisbett's optimism. Social policy can get rid of ethnic I.Q. gaps, he thinks, but "the social-class gap" in I.Q. "is never going to be closed." I would frame the matter a little differently. Even if I.Q. inequality is inevitable, it may eventually become irrelevant. Over the last century, for reasons that aren't entirely clear, I.Q. scores around the world have been rising by three points a decade. Some of this rise, Nisbett argues, represents a real gain in intelligence. But beyond a certain threshold -- an I.Q. of 115, say -- there is no correlation between intelligence and creativity or genius. As more of us are propelled above this threshold -- and, if Nisbett is right, nearly all of us can be -- the role of intelligence in determining success will come to be infinitesimal by comparison with such "moral" traits as conscientiousness and perseverance. Then we can start arguing about whether those are genetic.