

All Brains Are the Same Color

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After five columns on the urban legends in our science that may inadvertently undermine some of our efforts to build an integrative and cumulative psychological science, the next few columns will be cheerier. They illustrate innovative, integrative work at the vanguard of the field that crosses the boundaries of our sub-disciplines in new directions. Richard Nisbett's "All Brains are the Same Color," originally published in the New York Times, gives a taste of what we can expect when he delivers the "Bring the Family" address at the forthcoming APS convention this May, and I am delighted to welcome his work in this space.

Walter Mischel, APS President

James Watson, the 1962 Nobel laureate, recently asserted that he was "inherently gloomy about the prospect of Africa" and its citizens because "all our social policies are based on the fact that their intelligence is the same as ours — whereas all the testing says not really."

Watson's remarks created a huge stir because they implied that blacks were genetically inferior to whites, and the controversy resulted in his resignation as chancellor of Cold Spring Harbor Laboratory. But was he right? Is there a genetic difference between blacks and whites that condemns blacks in perpetuity to be less intelligent?

The first notable public airing of the scientific question came in a 1969 article in *The Harvard Educational Review* by Arthur Jensen, a psychologist at the University of California, Berkeley. Jensen maintained that a 15-point difference in IQ between blacks and whites was mostly due to a genetic difference between the races that could never be erased. But his argument gave a misleading account of the evidence. And others who later made the same argument — Richard Herrnstein and Charles Murray in "The Bell Curve," in 1994, for example, and just recently, William Saletan in a series of articles on Slate — have made the same mistake.

In fact, the evidence heavily favors the view that race differences in IQ are environmental in origin, not genetic.

The hereditarians begin with the assertion that 60 percent to 80 percent of variation in IQ is genetically determined. However, most estimates of heritability have been based almost exclusively on studies of middle-class groups. For the poor, a group that includes a substantial proportion of minorities, heritability of IQ is very low, in the range of 10 percent to 20 percent, according to recent research by Eric Turkheimer at the University of Virginia. This means that for the poor, improvements in environment have great potential to bring about increases in IQ.

In any case, the degree of heritability of a characteristic tells us nothing about how much the environment can affect it. Even when a trait is highly heritable (think of the height of corn plants),

modifiability can also be great (think of the difference growing conditions can make).

Nearly all the evidence suggesting a genetic basis for the IQ differential is indirect. There is, for example, the evidence that brain size is correlated with intelligence and that blacks have smaller brains than whites. But the brain size difference between men and women is substantially greater than that between blacks and whites, yet men and women score the same, on average, on IQ tests. Likewise, a group of people in a community in Ecuador have a genetic anomaly that produces extremely small head sizes — and hence brain sizes. Yet their intelligence is as high as that of their unaffected relatives.

Why rely on such misleading and indirect findings when we have much more direct evidence about the basis for the IQ gap? About 25 percent of the genes in the American black population are European, meaning that the genes of any individual can range from 100 percent African to mostly European. If European intelligence genes are superior, then blacks who have relatively more European genes ought to have higher IQs than those who have more African genes. But it turns out that skin color and “negroidness” of features — both measures of the degree of a black person’s European ancestry — are only weakly associated with IQ (even though we might well expect a moderately high association due to the social advantages of such features).

During World War II, both black and white American soldiers fathered children with German women. Thus, some of these children had 100 percent European heritage, and some had substantial African heritage. Tested in later childhood, the German children of the white fathers were found to have an average IQ of 97, and those of the black fathers had an average of 96.5, a trivial difference.

If European genes conferred an advantage, we would expect that the smartest blacks would have substantial European heritage. But when a group of investigators sought out the very brightest black children in the Chicago school system and asked them about the race of their parents and grandparents, these children were found to have no greater degree of European ancestry than blacks in the population at large.

Most tellingly, blood-typing tests have been used to assess the degree to which black individuals have European genes. The blood group assays show no association between degree of European heritage and IQ. Similarly, the blood groups most closely associated with high intellectual performance among blacks are no more European in origin than other blood groups.

The closest thing to direct evidence that the hereditarians have is a study from the 1970s showing that black children who had been adopted by white parents had lower IQs than those of mixed-race children adopted by white parents. But, as the researchers acknowledged, the study had many flaws; for instance, the black children had been adopted at a substantially later age than the mixed-race children, and later age at adoption is associated with lower IQ.

A superior adoption study — and one not discussed by the hereditarians — was carried out at Arizona State University by the psychologist Elsie Moore, who looked at black and mixed-race children adopted by middle-class families, either black or white, and found no difference in IQ between the black and mixed-race children. Most telling is Moore’s finding that children adopted by white families had IQs 13 points higher than those of children adopted by black families. The environments that even middle-class black children grow up in are not as favorable for the development of IQ as those of middle-class whites.

Important recent psychological research helps to pinpoint just what factors shape differences in IQ scores. Joseph Fagan of Case Western Reserve University and Cynthia Holland of Cuyahoga Community College tested blacks and whites on their knowledge of, and their ability to learn and reason with, words and concepts. The whites had substantially more knowledge of the various words and concepts, but when participants were tested on their ability to learn new words, either from dictionary definitions or by learning their meaning in context, the blacks did just as well as the whites.

Whites showed better comprehension of sayings, better ability to recognize similarities, and better facility with analogies — when solutions required knowledge of words and concepts that were more likely to be known to whites than to blacks. But when these kinds of reasoning were tested with words and concepts known equally well to blacks and whites, there were no differences. Within each race, prior knowledge predicted learning and reasoning, but between the races it was prior knowledge only that differed.

What do we know about the effects of environment?

That environment can markedly influence IQ is demonstrated by the so-called Flynn Effect. James Flynn, a philosopher and IQ researcher in New Zealand, has established that in the Western world as a whole, IQ increased markedly from 1947 to 2002. In the United States alone, it went up by 18 points. Our genes could not have changed enough over such a brief period to account for the shift; it must have been the result of powerful social factors. And if such factors could produce changes over time for the population as a whole, they could also produce big differences between subpopulations at any given time.

In fact, we know that the IQ difference between black and white 12-year-olds has dropped to 9.5 points from 15 points in the last 30 years — a period that was more favorable for blacks in many ways than the preceding era. Black progress on the National Assessment of Educational Progress shows equivalent gains. Reading and math improvement has been modest for whites but substantial for blacks.

Most important, we know that interventions at every age from infancy to college can reduce racial gaps in both IQ and academic achievement, sometimes by substantial amounts in surprisingly little time. This mutability is further evidence that the IQ difference has environmental, not genetic, causes. And it should encourage us, as a society, to see that all children receive ample opportunity to develop their minds.

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