Arthur Jensen, IQ, and Intellectual Desire


"All men by nature desire to know."-Aristotle, Metaphysics

Despite staggering advances in genetic technology, the dispute between hereditarians and environmentalists over the causes of the average fifteen point IQ difference between blacks and whites is stalemated. Nor is there any hope of gaining clarity, leave alone resolution of the dispute, so long as the assumptions which lead the hereditarians to conclude that the IQ gaps between groups are intractable remain unexamined. For example, Harvard psychologist Richard Herrnstein and others argue the intractability of group differences in reading and other cognitive skills, yet their methodology inexplicably rules out intellectual drive and motivation.  

On the other hand are behavioral geneticists who believe one cannot infer from the evidence that IQ is heritable in one group, a genetic cause for the average IQ test score difference between
groups, for these differences, write geneticists Robert Plomin, J.C DeFries, and G.E. McCleary can be "entirely environmental." Yet this group of scientists do not explain what it is about environmental differences that render such an inference invalid.'

I shall approach this controversy by subjecting the assumptions of a psychologist who has made a name attacking egalitarian views on racial differences in intelligence, to critical review. Because of his competence, because of his reputation as a formidable opponent of environmentalism, because he infers from the influence of heredity in one group a probable genetic cause for the average IQ shortfall of blacks, Arthur Jensen's arguments have been chosen for review. Moreover, one has the assurance in studying Jensen's work that he is free of race prejudice, which is important for our purposes precisely because he does tackle the thorny question of racial difference in intelligence. Paradoxically, he appears to have "strip [ped] us of our most direct and most satisfying refutation of the racist... that he is simply wrong about his facts" (RIQJ, 16).5

I shall proceed first to outline Jensen's views, then an alternative, and finally a critique.

The Modern Genetic View of Man
Jensen, a psychologist at the University of California, Berkeley, speaks often of "thinking genetically." To do so means realizing "that you and everyone else," except for identical twins, "are genetically unique." For aside from identical twins, the probability that any two siblings will inherit the same set of genes "is less than 1 in 73 trillions" (EGD, 9).

The key to thinking genetically means realizing that the individual as individual must be distinguished from "his quite separate biologic function as a mere transmitter of nature's (not his own) genetic material" (EGD, 9). How one individual's traits compare with another's, whether the same or differently, is not something he or she has control over. "You are not your race; you are not your group," says Jensen. "You are you. That is, if you are talking genetics" (EGD, 10). Accepting the fact that similarities or differences between persons are subject to "randomly segregating and recombin-
ing genetic materials," in obedience to statistical laws (EGD, 9), helps transcend "our long-conditioned proclivity toward personal possessiveness regarding our ancestry and our future descendants" (EGD, 9).

Recognition of our separate role as a mere biologic "transmitter" enables one to appreciate the contribution of heredity to racial differences in intelligence. Because it contributes a realistic view of nature operating independently of the wishes of mankind, Jensen compares the Mendelian Revolution with the Copernican, Darwinian, and Einsteinian Revolutions.

However, the Mendelian Revolution involves "an even more drastic reorientation of thinking" than the Copernican, Darwinian, or Einsteinian revolutions (EGD, 7). For the Mendelian Revolution runs counter to the "strong human proclivity," Jensen writes, "to place blame for disadvantage or misfortune," to make "the placement of personal blame substitute for the scientific analysis of causality" (GE, 56, Jensen's emphasis). Such blaming perpetuates the comfortable fiction that our lives are in our hands, subject to our will, and that misfortune or disadvantage is someone's or some institution's fault. The social sciences themselves are not free of such tendencies.

Mendelism also has the power to overcome prejudicial stereotypes that dominate public thought. The popular habit of praising or blaming genetic traits over which people have no control is proof that popular thinking remains fixed at a pre-Mendelian stage. For example, the "old-fashioned beliefs" of racism and elitism "are quite out of touch with modern genetics; they are now more political and ideological than scientific. They . . . deny individuality, the very individuality that is in fact insured by genetic mechanisms" (EGD, 7-8). The characteristics of the group to which people belong merely identify them as group members, but to infer from group traits the capabilities of any particular group member is anti-Mendelian. Genetic thinking disabuses people of racism and elitism, for these fundamentally arise from identification of individuals with their genetic ancestry; they ignore individuality in favor of
group characteristics; they emphasize pride in group characteristics, not individual accomplishment; they are more concerned with who belongs to what, and with head-counting and percentages and quotas than with respecting the characteristics of individuals in their own right. This kind of thinking is contradicted by genetics; it is anti-Mendelian (EGD, 10).

Mendelism also serves to counter another belief that is as much a denial of individuality as social elitism and racism—a comforting belief that deludes people into thinking that given the right conditions adversity and misfortune can be overcome. That belief is "egalitarian environmentalism," which is also "more political and ideological than scientific. It denies genetic variability...and insists that the environment alone-usually the social environment-makes the person and all the behavioral differences among persons" (EGD, 8). Like racism and elitism, egalitarian environmentalism personifies forces which are in fact genetic.

Social Benefits of Research into Differences in Intelligence
Since the hallmark of Jensen's Mendelism is the uniqueness of the individual, and since he believes that social classes and races are merely classification systems imposed upon what in nature are not at all distinct, one wonders why he even takes up the study of racial differences in intelligence? Although he insists that his research on educability and group differences should not have any effect upon how individuals are to be treated, he hopes it will force policy-makers to be more realistic about educational and social measures for dealing with the socio-economic inequalities between the races. He claims such research is forced upon him by the popular tendency to think in terms of groups when faced with the unequal presence of group members at the "various levels of the educational, occupational, and socioeconomic hierarchy."

As a scientist, he insists on keeping an open mind about the kind of research necessary to uncover the causes of the "disproportionate representation" of different racial groups in higher levels of education and in the most desirable jobs. It would not only be unscientific
to rule out genetic research, it could harm the very persons who would benefit from the results of such research. "The possible consequences of our failure to seriously study these questions [such as, a possible genetic component to social class intelligence differences within the black population] may be viewed by future generations as our society's greatest injustice to Negro Americans" (GE, 331). To prohibit such research would condemn blacks to self-hatred and frustration, to believing that none of their problems are within themselves; that all their difficulties are due to discrimination. Indeed, such research holds forth the promise of discovering the "one necessary means for negroes to achieve true equality" - the biological. If there are intractable differences in the races that lead to differential rewards in the goods that society prizes, then genetic research may also point the way towards the "arrangements that would be most likely to make such a situation workable to everyone's satisfaction" (EGD, 22).

According to Jensen, scientific evidence why the average black IQ is lower than that of other groups will clear the air of the various ideologies, such as racism and egalitarian environmentalism. These ideologies will be shown to impute blame where none is due. Once liberated from a mistaken sense of control over their mental capacity, people will have no cause to make envious comparisons between themselves and the members of other groups.

In Jensen's methodology for measuring the hereditary contribution to the IQ gap between the races, there can be no credence given to the destructive passions energizing ideologies such as racism. Scientifically, such ideologies have no standing since they are anti-genetic, mere holdovers from a pre-scientific way of thinking. Hence, such passions have no bearing on the distribution of IQ scores within a population. This will be apparent from a closer look at his methodology; but first, a word about his understanding of intelligence.

Jensen's Understanding of IQ and Intelligence

Dissatisfied with popular definitions, subjective judgments, or semantic analysis, Jensen believes only an empirical measure can
establish the presence of intelligence scientifically. That measure must be a reliable index of the general factor "g," common to all mental tests. Mental activities that draw heavily upon this general factor, that is, those "heavily loaded with g," are those involving abstract reasoning and problem solving. And the more heavily a test summons forth these kinds of mental activities, the more reliable an index the test is of intelligence. Since IQ tests rely on these kinds of mental activities so demandingly, they are reliable indicators of intelligence. Therefore, intelligence is not an entity but a construct—something which is intended to explain the observed phenomenon, that there is a common denominator or "positive intercorrelation" among all mental tests regardless of their apparently great variety."

As to what guides intelligence, there is no hint in Jensen's conception of any of those passions that he deplores in racism and elitism. According to his conception, problems guide intelligence. Yet there is no hierarchy of problems other than their complexity which summons forth the activity of intelligence. Nor is there any indication of what determines the kinds of problems that put the intellect to work. Jensen conceives intelligence to be a kind of calculative mechanism, a problem-solving apparatus completely open to whatever problems are presented, free of prejudgments, totally objective.

Jensen's Methodology

The starting point for Jensen's conclusions about racial differences in intelligence is his acceptance of an established methodology of behavioral genetics for addressing the effect of heredity on the distribution about the mean IQ score for an entire population. The term for this effect of heredity is "heritability." And to determine the heritability of IQ within the mainstream population, he again relies upon established analysis in the field of quantitative genetics. Why an entire population? Because this is the level at which the statistical laws that govern the "random segregation and recombination of genes" (EGD, 7) operate. This is the level at which people can be viewed as biological transmitters. From the determination of herita-
bility in the mainstream, Jensen will infer the contribution of heredity to the average IQ shortfall of blacks in comparison to whites.

Quantitative genetics deals with the amounts that hereditary and environmental factors contribute to the distribution of continuous traits throughout a population. "A continuous distribution will be observed if a trait is influenced by several genes, each having small effects, as well as environmental factors. This is the essence of quantitative genetics." Continuous traits are those in which there are only incremental as opposed to qualitative differences between individuals, for example, height, as opposed to eye color.

Jensen's objective is to determine how much of the variance—that is, the dispersion of IQ tests scores about the average—may be attributed to genetic factors. The variance component attributable to hereditary factors is the heritability, which is a relative measure of the force of the genetic and the environmental differences operating within a population for the trait in question. If genetic differences are large and environmental differences small, then heritability is high. If a population is uniform genetically, then trait differences would be primarily due to environmental differences and heritability would be low.

Herrnstein reminds us that quantitative genetics yields a measure of how large a role inheritance plays in the total amount of variation in IQ in a particular group of people at a particular time (IQM, 176). Quantitative genetics does not seek an absolute number for the influence of heredity at all times and places for all peoples. Nor is it capable of doing so, because the frequency of genes and relative uniformity of environmental factors is not the same for all populations. For example, with skin color

[the task of quantitative genetics is to come up with a number that says how large a role inheritance plays in the total amount of variation in skin color that we see in a particular group of people at a particular time.]

Neither Jensen's methodology nor quantitative genetics can account for the absolute level of the mean. Quantitative genetics yields only relative measures of the influence of heredity and environment on
the dispersion of scores about a given average.

Accepting the mean as the average of all the scores—the mathematical center of a dispersion of scores—it is the variance from the mean that is of greatest interest to the quantitative geneticist.

To calculate the amount of the total IQ test score variance contributed by heredity, that is, the heritability of IQ, Jensen allocates the variance into two sets of factors—hereditary and environmental. With one exception, Jensen assumes that these environmental and hereditary factors operate independently, that the variance of each may be added to equal the total variance. Thus, the influence of environmental factors is what is left over after allowing for the influence of heredity. For example, assuming that the total of all the observed variation equals 1.0: if the influence of heredity accounts for .8 of the total variance of a population's IQ test scores about the mean, then the influence of environmental factors would be .2. And such an assumption about the primarily independent operation of the two sets of factors agrees with the statistical approach of quantitative genetics that Jensen relies upon.

What are the hereditary and the environmental factors which together account for the total dispersion in the mainstream population's IQ test scores? The hereditary components of the variance in IQ test scores are "genic variance" and "assortative mating." Attributable to gene effects, genic variance "is the part of the genetic inheritance which breeds true," the part that "accounts for the resemblance between parents and children" (Boost, 34). Genic variance results from the average value of the trait in the parents being passed on by heredity to the children. In addition, assortative mating—the inclination of men and women of similar IQs to seek each other out as mates—is classified as a hereditary component of the total variance.

Turning to the environmental components of variance in the mainstream population's IQ scores, Jensen admits that "social and cultural influences on the individual are important," but claims that "they are not the whole of 'environment,' which includes other more strictly biological influences such as the prenatal environment and nutritional factors early in life" (Boost, 37-38).
Covariance

But how should the positive interaction of environment and heredity that boosts a trait to higher levels of expression be categorized? Should such interaction be classified as environmental? Jensen defines this resonance or "covariance" between environment and heredity, whenever its influence is positive, as hereditary. His point is that environmental factors do not increase IQ; instead, inherited intellectual capacity finds or creates an environment conducive to its expression.

Superior ability may cause the social environment to foster the ability, as when parents perceive unusual responsiveness to music in one of their children and therefore provide more opportunities for listening, music lessons, encouragement to practice, and so on (Boost, 38).

According to Jensen, the relationship between heredity and environment is a one-way street. All harmony between hereditary and environmental factors determining IQ is credited to heredity. As long as the environment reinforces the inherited tendencies of mind, the mutual reinforcement of these factors—that is, their covariance—is counted as a hereditary component of IQ. An exception occurs when the surroundings discourage the expression of an inherited trait, for example, overt aggressive tendencies (Boost, 38). Then Jensen classifies covariance environmental because the variance that would otherwise occur if the environment reinforced aggressiveness is actually negated.

Having classified the various factors affecting variation in IQ test scores, Jensen calculates heritability in the mainstream population. This is the measure from which he will infer that the average IQ shortfall of blacks is probably due to heredity.

Jensen's Calculation of the Heritability of IQ

To calculate heritability of IQ in the mainstream, Jensen draws upon a large body of quantitative genetic research conducted over the last half-century. He compares the actual correlations of IQs between
relatives and compares these observed correlations to the theoretical correlations that would obtain were there no environmental influences: Then these comparisons are cumulated to arrive at an overall heritability for mainstream IQs.

To calculate theoretical correlations, the behavioral geneticist considers the percentage of genes that each kinship group shares in common. The closer the kin, the greater the number of genes they share; therefore, the higher the correlations. Since identical twins reared apart share all of their genes in common, their theoretical correlation, discounting any environmental factors, is 1.0. Since fraternal twins of the same sex and brothers and sisters share half of their genes, their theoretical correlation is 0.5. Since parent and child likewise share half of their genes, their theoretical correlation is also 0.5. And since aunt and nephew share one-quarter, their theoretical correlation is 0.25 and so forth.

By comparing all the actual correlations between kin in the kinship groups studied to the theoretical correlations for these same groups, the behavioral geneticist has a measure for the average environmental contribution to the variance in IQ test scores within the mainstream population. The remainder is the heritability of the trait. For the mainstream population Jensen calculates an environmental contribution of 0.19 of the total variance in IQ; the remainder then is the contribution of heredity to the total variance in IQ, 0.81, where 1.0 is perfect. The contribution of IQ to the total variance is known as the heritability of IQ. Such a high heritability of IQ means that the relative weight of hereditary differences is much greater than environmental differences in determining the dispersion of a group's IQ scores about their average.

Why does Jensen rely upon this method for calculating heritability? His method provides a comparison of the relative differences in environmental factors as compared to the range of differences exhibited by hereditary factors within the mainstream. Assuming a non-existent environment in order to reduce the range of difference in environmental factors to zero, provides a benchmark for the actual range of difference in environmental factors affecting the mainstream population. And since the heritability measure derived for
the mainstream is so comprehensive, because it covers such a wide population, it reinforces the impression of how substantial the influence of genetics is in determining the distribution of IQ scores in any population. The burden is on the skeptic arguing that the contribution of environment to the variance in IQ in another group is relatively greater.

Jensen's Hypothesis That "Genetic Factors Are Involved In the Average Negro-White [IQ Score] Differences"

Jensen argues that if the heritability figure for the mainstream population is as high as .8, unless there are extraordinary differences between the environments of blacks and whites in this country, the average black-white IQ test score difference is probably due to hereditary factors. This is the heart of his argument that "genetic factors are involved in the average Negro-white [IQ score] differences."

His argument begins with the IQ test scores of identical twins raised apart in randomly selected environments. Since identical twins share all their genes in common, the differences between the IQ test scores between the individuals in each set of twins must be due to environmental factors. Averaging out the differences in the scores between the twins in each pair of twins for all 122 pairs gives an average spread or variance of IQ test scores between the members of each pair of twins of 3.35 points.

Taking this 3.35 points variance in the twins' IQ test scores as representative of the power of environmental differences to affect the distribution of IQ test scores of persons in the mainstream population, Jensen turns to the average 15 point IQ test score difference between blacks and whites. Since the twin study indicates a maximum environmental contribution to the test score variance of only 3.35 IQ points, and since blacks average 15 IQ points less than whites, Jensen argues that environments for blacks would have to be four and one-half times (4.5 X 3.35) worse than environments for whites for the IQ gap between the races to be entirely due to nurture.

Even on the basis of the variance in IQ for the entire mainstream population, not just identical twins, the full power of environmental
influences amounts to only 6.5 IQ test score points, according to Jensen; in which case, the environment for blacks would have to be two and three-tenths times worse than for whites (2.3 X 6.5) to account for the 15 point gap between blacks and whites.

He insists that environmental deprivations of this order-four and one-half times or even two and three-tenths times worse-are nowhere to be found in this country. He believes deprivations of these magnitudes occur only where children do not interact with others or run out-of-doors, or are denied any sensory stimulation, or suffer malnutrition. He allows that children may suffer these deprivations in third world countries, but not here (GE, 136-138; EGD, 175). Indeed, he challenges anyone to find such huge environmental inequalities in this country. The burden rests "upon those who insist upon a purely environmental explanation of the racial IQ difference" (EGD 166). All the standard environmental explanations of the average difference in IQ between the races he finds wanting. Indeed, his admiring critic, James R. Flynn, thinks Jensen's ability "to falsify literally every plausible environmental hypothesis" makes the result "something of a massacre" (RIQJ, 40). Given this, what are some of the standard environmentalist explanations which Jensen "massacres?"

When the environmentalist points to low self-esteem as an explanation, Jensen counters that studies indicate "the self-concept of Negro children does not differ significantly from and may even be higher than that of white children" (EGD, 267).

Likewise, he rejects the environmentalist contention that IQ test scores are affected by external motivational factors. He cites a study showing just the opposite: that "[i]ntelligence tests are quite insensitive to external motivational manipulations"; that when small children were praised after each test item, verbally reproved for wrong answers, and rewarded with candy for correct answers, there was no change in their IQ test scores (EGD, 265). Nor does the environmentalist argument that IQ is brought to fruition by personality traits which "favor the development, educability, and practical mobilization of the individual's intellectual potential" tip the scales against genetic thinking, for these traits, he says, have a "genetic
Neither did the track-record of compensatory education change Jensen's mind. Just the opposite. Assuming that background differences between students reflect hereditary differences in ability, he believes that the 1966 Coleman report confirmed his view that environmental changes are powerless to compensate genetic deficiencies. Coleman's finding that schools have "little influence [they can bring] to bear on a child's achievement that is independent of his background and general social context" was grist for Jensen's mill—yet another proof of the power of heredity—that differences in school quality could not explain the average IQ deficit of blacks.

Finally, the environmentalist contention that dissimilarities in motivation and family cohesion render some groups more vulnerable to the harm of prejudice does not wash for him. Other groups besides blacks, he remarks, have suffered prejudice and family disintegration yet they have higher average IQ scores. In fact, the mean score for blacks of high socio-economic status falls below that of the "lowest SES [socio-economic status] white group" and that of other groups—Japanese, Chinese, and Native Americans—who have been subject to racial prejudice (EGD 240, 253).

Some Disagreement
Later, we shall have occasion to question how much of a "massacre" Jensen's makes of these environmentalist explanations. Only one caution at the present: Neither Jensen nor the social scientist environmentalists have considered how much force the intangibles of intellectual desire, of spirit and willpower may exert in boosting IQ. Indeed, some social scientists rule such factors irrelevant precisely because they are intangible. Since neither Jensen nor the environmentalists he rejects consider such factors when arguing the influence of heredity on racial differences in IQ, the whole debate is somewhat sterile.

The dismissal of such intangibles may explain why there is so much disagreement among scientists over inferring from the heritability of IQ in the mainstream a genetic basis for the average shortfall of black IQs. For example, critics of this hereditarianism speak of
other environmental forces than the ones rejected by Jensen. Flynn thinks "we must try to identify environmental factors which are both potent and affect blacks adversely (perhaps lower parental IQ or dietary deficiencies or lack of verbal stimulation in early childhood)..."(RIQJ, 216-217). Even Jensen wonders whether there are "as yet undiscovered major sources of environmental influence on the development of g that, when equalized across racial populations, would wipe out the presently observed g difference. "30 Psychologist Sandra Scarr-Salapatek argues that inferring black intellectual inferiority from the heritability of IQ in the mainstream requires "assumptions that few investigators are willing to make"; for example, assumptions "that all environmental differences are quantifiable, that differences in the environments of blacks and whites can be assumed to affect IQ in the same way in the two groups, and that differences in environments between groups can be statistically controlled." And also, as noted before, Herrnstein would have agreed with Salapatek twenty years ago. 32 University of Cambridge geneticist J. M. Thoday observes, "We can make no extrapolation of our estimates of within group heritabilities to between-group differences. "33

His exclusion of intangible forces of motivation and spirit makes it easier for Jensen to infer from heritability of IQ in the mainstream a substantially genetic basis for the average IQ gap between blacks and whites. However, common sense says that such forces cannot be dismissed; that they often dictate the choices people make concerning the use to which they put their minds. And if these forces dictate the use to which they put their minds, they affect people's mental abilities. Therefore, it is necessary to consider an alternative view that does justice to such factors.

An Alternative View

The father of IQ testing, Alfred Binet, "likened a child's intelligence to a 'field for which an expert farmer has advised a change in the method of cultivating, with the result that in place of desert land, we now have a harvest. '"34 As with the nourishment of the body, some diets make us stronger and others weaker; so with the nourishment
of the mind, some ideas and objectives strengthen the mind; others do not. This notion draws upon an older view of the mind as a kind of appetite or desire for objects which, figuratively speaking, can only be grasped by the intellect. "Cognitive appetites, like other appetites, can be whetted or dulled."

Any significant activity of mind is purposive. The more removed the purpose is from the satisfaction of daily wants, or the more removed from the sting of personal envy and pride, then the greater the demands on those powers of mind that most distinguish us from other animal species. Thus, by their very content, some objects of thought stretch the mind; they excite and attract reason which explains why the "more one knows, the greater one's desire to know."

The way such objects of thought draw reason on is by their appeal to the passions of the mind, to intellectual desire. The "desire to know," or "intellectual appetite," has to be considered in addition to the instrumental or calculative powers of the mind in making judgments about intelligence. Instrumental mind acting alone without purpose is rudderless, without direction, without the passionate commitment that summons forth the highest efforts of mind. Alternatively, it is misleading to consider intellectual passion in isolation from the instrumental powers of the mind because intellectual passion alone without a precisely tuned instrument of reason is incapable of comprehending the objects of intellectual desire.

Therefore, to assess the intellectual strength of either an individual or a group, both the passionate and calculative aspects of mind must be considered. From this perspective environmental factors need no longer be considered passive. Since it is intellectual passion that sets the mind in motion and is the engine of intellectual growth, the environmental conditions which shape and direct such passions are crucial to the intellectual progress of an individual and of a people. No one, no group, can be written off as suffering a genetic disadvantage in intelligence; one has to take into account their intellectual passions and whether or not they enjoy conditions conducive to the healthy development of these intellectual passions.

From this alternative point of view IQ tests are neither definitive
nor reliable indicators of intelligence because they do not control for a whole range of intangible environmental factors. At best, they measure only one aspect of intelligence-the instrumental side. IQ tests simply ask questions which have no purpose outside of themselves than simply to be answered-often without even the awareness on the part of the subject that he or she is being tested for intelligence. They do not control for the extent to which individuals have been motivated intellectually. They do not control for the harmful influences that adverse conditions may have on a child's intellectual ambitions. They do not control for the terrible conditions present in some of the nation's public schools and the impact of these conditions on pupils' intellectual ambitions. For example, they do not control for a black valedictorian at D.C.'s McKinley High afraid of being beaten by his classmates.

People do not reason in the abstract without purpose, without encouragement. The use of these skills and of abstract problem-solving ability is a learned facility. The "interest in, and orientation toward, abstraction is an exceptional and acquired taste or facility." There are studies suggesting the dependency of the merely calculative side of intellect on intellectual ambition and passion. Calculative reason or IQ-sometimes called "APSA" for "abstract problem-solving ability"-is malleable, susceptible to cultural influences. Flynn, for example, reports massive IQ gains from 1932 to 1978.

Understanding the mind to be a faculty comprised of both intellectual passion and reason points the way to a sounder understanding of the environmental factors that may explain the average IQ gap between the races.

The Affective Foundation for IQ Growth

The importance of intellectual passion to the capacity of people's minds is evident from the impact of poverty and racial discrimination on the higher uses of human intelligence. There is a threshold confidence level above which there is respite from the pressing needs of safety, food, and shelter-a level that grants respite from the feelings of hurt, shame, and rage that often accompany the suffering of poverty and disadvantage in the midst of plenty. The
confidence level of one who is "survival-oriented" as opposed to one who is "achievement-oriented" often prevents the former from capitalizing on his natural endowments.

Adverse circumstances and the rationalizations they evoke affect the choices that people make about how to live their lives. And these choices are all-important. The choices conducive to success are the ones that tend to transform the individual into a thinking being. "Whether or not success is attained seems to be related to the extent to which one subscribes to certain values. Among these values are hard work, a favorable orientation toward religion, self-discipline, and educational attainments" (Chestaing, 49). The choices that people make in deciding how to live make all the difference in how well or ill they can capitalize on their genetic potential, mental as well as physical. 43

One makes life choices based upon the kind of life that one comes to admire; and, short of this, the kinds of aspirations that habits of discipline and hard work give rise to. From learning discipline as a child, careers that require much discipline, such as law, or medicine, or teaching, appear attainable and attractive. And the realistic aspirations that make such careers appear within reach motivate children to use their minds. The more demanding the goals embraced, the greater the demands on instrumental intelligence and the higher the average IQ. What are the chances that the goals of the average person living in the ghetto conditions described by William Julius Wilson are very high? 44

In comparing the mean black IQ with that of whites, one has to consider the environmental influences which affect people's minds; the effect of these upon their aspirations; and the effect of the rationalizations which people create about being so much worse off than people in the mainstream. The sometimes angry rationalizations for suffering adversity in the midst of plenty cannot help but limit intellectual horizons; and such limitations translate into lower average IQ scores. Behind the rage and shame may be feelings of personal worthlessness reinforced by a perception of being written off as worthless by others; these feelings are bound to inhibit mental growth in all but the strongest individuals. 46 In such circumstances,
it might be healthier to blame one's failures on others. Unfortunately, today there are fewer spiritual bulwarks than ever before to help the disadvantaged resist the pitfalls of rage, shame, and despair.

An awareness of what might have been, an awareness in us by nature, may further embitter the lives of the unfortunate demoralized by adversity. The reaction to such awareness is critical for the future of the individual and maybe emotionally violent. How people deal with this awareness determines the use that people make of their minds.

The resolution each person has to make between what he is and what he might have been is not simply an environmental factor; nor is it genetic. It is a natural awareness of what we are capable of as human beings compared to what we have actually become. How people handle this awareness and the disparity between potential and actual determines the direction of intellectual desire, which in turn gives direction to thought. Such comparisons may result in angry rationalizations, in empty bravura, or in a resolve to make the best of one's circumstances. Each result has tremendous consequences for IQ. However, Jensen takes no account of these internal dynamics, of the phenomena that once was the subject of moral psychology.

The concept of covariance suggests how important such psychological dynamics are to the growth of IQ.

**Covariance**

The existence of covariance reveals a force that is neither environmental nor genetic, but rather nature itself. Neither genes nor one's environment can be realistically viewed as autonomous agents-as acting independently of each other. The consequence of approximately 100,000 genes and untold environmental influences which act and react upon each other is mediated by the specifically human nature that is present in each. The reaction may assume a positive character when in accord and a negative or destructive character when not in accord with nature. Genes do not act independently to determine some trait like IQ; rather, nature does so. When the combination of genes and environment is most conducive to realiz-
ing the potential of our human nature, there is the greatest boost to the average IQ of a group. When the combination of genes and environment is least conducive to achieving the possibilities of our human nature, there is the least boost to the group's average IQ. It is the passions of the mind—the great wishes or desires that give character to our lives—that are the most obvious manifestation of our specifically human nature. Thus the necessity of taking account of intellectual desire in order to understand why the average of one group's IQ is higher or lower than another's. This is what covariance does.

Tied as it is to the affective foundation of IQ, covariance reflects the forces that cause one group's average IQ to rise or fall. The concept of heritability, on the other hand, reveals nothing about whether the particular combination of hereditary and environmental factors is conducive to IQ growth. For the heritability of IQ in the mainstream population is simply the result of comparing the range of hereditary and environmental differences within that population. Heritability says nothing about the power of any particular combination of environmental and hereditary differences to produce a higher or lower average IQ. Heritability says nothing about what combinations of heredity and environment are most likely by nature to elicit the highest expression of our endowed capacities. Heritability can say nothing about why a group's average IQ may be 95 instead of 110. Therefore, one cannot infer from the high heritability of IQ in the mainstream a genetic basis for blacks having a lower IQ on the average.

Some of Christopher Jencks' research on covariance indicates why heritability provides no insight into the causes of IQ growth. He argues that IQ is only tangentially related to intelligence, that "noncognitive attributes may play a larger role than cognitive skills in determining economic success or failure"; that the genes which influence an individual's opportunities or incentives to learn have no "obvious relationship to his actual capacity to learn" (Jencks, 70). He does not argue that there is no hereditary component to personality traits. His point is that the hereditary component of IQ and the hereditary components of personality that enable a person to make
the most of his intelligence in the practical world are not closely related.

Accordingly, Jencks takes account of the role of parents and society in nurturing and encouraging the intellectual promise of youngsters. Therefore, covariance for Jencks includes more than Jensen's conventional view that smart children will seek out and structure environments congenial to their intelligence. He defines covariance to include the support (or lack thereof) that society gives to a child to strengthen what is best in the child's nature. And such reinforcement is not something that can be taken for granted as present in all societies, or in every community. Such reinforcement influences how well children capitalize on their intellectual potential. How much support and encouragement the society provides for the highest development of people's mental powers depends upon whether that support and encouragement is in accord with nature. The response of society to the brightness or dullness of the child is something which can not be neglected in thinking about IQ.

Jencks' emphasis upon the kind of reinforcement that a community provides the intellectual desires of the young explains why he thinks that the heritability of IQ says so little about the chances that a group can increase their IQ scores. "High `heritability' proves almost nothing about the extent to which the changing environment can change test scores" (Jencks, 65). Heritability says nothing about the dynamic potential that the relationship between any particular environment and heredity has for nurturing an increase in the average mental abilities of a group. The two are unrelated. That dynamic potential is captured by covariance. The high covariance that he finds reflects the importance of the dynamic interaction between the premium family and society place on intelligence of the younger generation.

Empirical Evidence
Various empirical studies indicate that the level of emotional support that children receive in their fledgling mental efforts makes a substantial difference in their IQ. For black children adopted at an early age by upper middle-class families, dramatic increases of as
much as 20 points were registered above the average for black children reared in their own homes. Scarr and Weinberg hypothesized, "[I]f all black children had environments such as those provided by the adoptive families in this study, we would predict that their IQ scores would be 10-20 points higher than the scores are under current rearing conditions." They described the adoptive families in the study as constituting an ecological system in which IQ skills are developed. The physical environment, the amount and quality of parent-child interaction, the parents' attitudes and practices in child rearing, the neighborhood and community settings of the family, and the larger social contexts of employment, economic security, and cultural values must all be considered in describing the parameters of family effects.

Building on Scarr and Weinberg's research, Elsie G. J. Moore compared 23 white children adopted by middle-class black families with 23 black children adopted by middle-class white families. Moore not only confirmed the range of IQ increases in the black children's IQ scores that Scarr and Weinberg had reported, but argued that the differences in rearing environments specifically concerned the direct and indirect training in problem solving they provide; the types of problems for which thoughtful, careful, and concentrated attempts at problem solving are specifically encouraged (i.e. task-oriented vs. person-oriented problems); and the identification of contexts in which problem-solving behavior will be rewarded.

There is also the research of Barbara Tizard on the intellectual development of 85 children divided among thirteen long-stay residential nurseries in England. Tizard found a significant correlation on one of the IQ tests between the quality of staff talk with the children and the children's IQ scores. The former was measured by the frequency with which they spoke with the children and the frequency with which the children replied; the "proportion of
informative talk ('That's not a sweet, it's a piece of a puzzle') versus mere ritual talk ('That's nice,' 'Aren't you clever,' 'Lucky boy'); the proportion of commands with explanations versus commands without; and the length and complexity of the sentences used" (RIQJ, 180).

Summary

It is inevitably objected that the disadvantaged conditions afflicting so many blacks are the byproduct of inferior IQ. However, the conclusion is mistaken. Take the example of West Indian blacks. Though West Indian slavery was harsher in many respects than slavery in the American South, West Indian blacks who have migrated to this country "hold sizable advantages over American Negroes in incomes and occupations." On Jensen's grounds, disproportionately high representation of any group in income and occupational status is evidence of higher IQ. Sowell attributes the difference to the fact that West Indian slaves were allowed to hold property, to raise and sell their own food—in short, they had a centuries-long tradition of taking care of themselves.

Adverse conditions render the experience of abstract problem-solving unfamiliar and stifle the incentive of youngsters to exert themselves intellectually. As Wilson points out, joblessness as a way of life in the ghetto adversely affects "the development of cognitive, linguistic, and other educational and job-related skills necessary for the world of work in the mainstream economy." Therefore, writes Wilson, "the teachers become frustrated and do not teach and children do not learn. A vicious cycle is perpetuated through the family, through the community, and through the schools." To discount the impact of conditions on the desire to get ahead intellectually betrays a mistaken view of what is required for the minds of a younger generation to grow. How can one tell the extent to which a group has tapped its genetic wealth unless the will to do so has been nurtured within a congenial moral and social framework? It remains for us to examine Jensen's argument on the basis of the alternative view that I have sketched.
Jensen admits his methodology reveals nothing about the causes of average IQ for a population, nothing about the dynamics of IQ, but then goes on to argue that it does. First, his admission: "[S]ince it [heritability] is based essentially on the analysis of variance, it can tell us nothing at all about the causes of the particular value assumed by the grand mean of the population" (ED, 398). Since he does not provide the reasons why this is so, we must try to supply them.

Because the variability in hereditary factors is relative to the variability in environmental factors, heritability is only a relative measure: the more uniform the environment relative to the variation in the genetic endowments of a group on some trait, the higher the heritability; and the more varied the environment relative to the variation in the distribution of the genes for a trait, the lower the heritability. However, this comparison of relative uniformity or difference in environmental and hereditary factors could occur about any mean IQ test score. The grand mean could be low and the heritability high; or the grand mean could be high and the heritability low. There is no connection between the two measures. Yet after asserting that there is no connection, Jensen apparently contradicts himself by offering many judgments based on the assumption that there is such a connection. Exploring these contradictions reveals a great deal about Jensen, the herald of the Mendelian Revolution.

1. His argument that the average 15 point IQ deficiency of blacks is primarily genetic is based on an assumption that the environment blacks are exposed to cannot be four and one-half times worse than that for whites. Recall that he calculated a $3.35$ point variance between the IQ test scores of twins-for 122 pairs of twins. Since the twins were identical, the $3.35$ points variance had to be totally environmental. Then he reasoned that for the $15$ point IQ test score gap between blacks and whites to be environmental, environmental conditions for blacks would have to be four and one-half times worse than those for whites. ($4.5 \times 3.35 = 15$.) And since he felt this was impossible, he concluded that the average IQ shortfall of blacks is primarily genetic.
For one environment to be four and one-half times worse than another has nothing to do with the range of differences in that environment compared to the range of differences in the mainstream environment. The range of differences does not establish what the overall impact of environmental factors will be on the mean IQ for that particular group. Jensen mistakenly equates a greater range of environmental conditions to "worse." However, the two have nothing in common. The environment for blacks might contain a smaller range of differences yet be four and one-half times worse. Then black IQ test scores would average lower than whites for environmental factors. Since Jensen assumes that more various and worse are the same, his conclusion that the IQ gap between the races is primarily genetic is mistaken.

The question then is how Jensen could make such a mistake? Only if he assumes that the intangible factors that make one environment worse than another are irrelevant. Then it would be highly unlikely that black environmental conditions are four-and-one-half times worse than those for whites. For if one assumes that the non-genetic factors that count are primarily material or nutritive, then environmental conditions for blacks could not be four-and-one-half times worse than for whites.

2. Jensen's denial that being raised in a good family environment can increase IQ is based on a judgment that his methodology does not support. For example, he criticizes what Skodak and Skeels inferred from the fact that children born to mothers with low IQs and adopted into "exceptionally good upper middle-class families" later "turned out to have considerably higher IQs than their biological mothers" (ED, 405). Skodak and Skeels reasoned that the average 11 point IQ gain of these children disproved "the conclusion from many heritability studies that genetic factors are more important than environmental factors (in the ratio of about 2 to 1) in the causation of individual differences in IQ" (ED, 405).

In itself, says Jensen, an 11-point gain proves nothing, for we can predict such gains from the "genetic model" (ED, 406). "Even if environmental factors contribute only 20 percent of the IQ variance," an 11-point gain over the average environment "falls well
within what we should expect" (ED, 406), by which he means that an 11 point gain is well within the range of differences contributed by environmental factors to the total variance in mainstream IQ test scores.

Again, the genetic model Jensen uses, refers only to a range of differences in environmental as compared to the range of differences in genetic factors. The model cannot measure the substantive superiority of one set of environmental factors over another. The model cannot explain why mean IQ for one group is higher than that for another, for that would involve judgments concerning better and worse conditions, not observations as to the range of differences.

Returning to the Skodak and Skeels study: the relative uniformity in environmental conditions implied by only .2 of the total variance in IQ test scores being caused by environmental factors says nothing about why the "exceptionally good, upper middle-class families selected by the adoption agencies for their superior qualities" (ED, 405) changed their adoptees' scores in one direction only-up by 11 points.

Jensen dismisses the 11 point gain as something encompassed by statistical possibility based on the relative variabilities of environmental and hereditary IQ factors. However, these relative variabilities cannot explain why the average for the adoptees increased by 11 points. That has to do with the better environments provided by the foster families in the study. That Jensen confounds the two need not be a contradiction from his point of view as long as one assumes, which he does, that propitious environmental conditions reflect superior genetic endowment. And this interpretation accords with Jensen's treatment of covariance where he ignored the kind of societal pressures that enable a people to capitalize upon their intellectual inheritance.

3. Jensen recognizes that there are internal motivational factors-"traits of personality and temperament which complement and reinforce the development of intellectual skills"-which contribute to the development of IQ. However, he argues that they are so closely correlated with inherited mental abilities as to be genetic; therefore, they do not count as environmental factors capable of
boosting IQ.

Here again there is a contradiction: a close correlation with "inherited mental abilities" says nothing about whether such traits develop in response to powerful motivational influences, for example, from one's peers. Such a possibility cannot be ruled out on the basis of variance analysis, for that methodology cannot measure the quality of motivation. Nor can that methodology pinpoint mathematically the amount of the total variance attributable to heredity in such traits as personality and temperament. And even if it could, it would tell us nothing about why some motivational influences are better than others.

Again, there may be no contradiction from Jensen's point of view as long as one assumes, as he apparently does, that the capacity to be motivated is itself inherited and not subject to intangible environmental influences. The idea of motivation operating independently of an inherited predisposition to be motivated would be inconsistent with Jensen's perspective on the relationship between environment and heredity: inconsistent with the conviction that it is merely wishful thinking to believe that people can become what they learn to admire.

4. Jensen's dismissal of self-esteem as a cause of the IQ gap between the races is similarly revealing. He cites studies purporting to show that "the self-concept of Negro children does not differ significantly from and may even be higher than that of white children" (EGD, 267). However, he makes no inquiry into the different grounds for self-esteem—for example, that which arises from discipline and hard work in contrast to empty boastings. Such differences may not register on the scales of Jensen's variance analysis, yet they make a world of difference to the growth of IQ.

However, from Jensen's point of view, the different grounds of self-esteem may be irrelevant: what really counts are inherited abilities. Therefore, the basis for self-esteem in any individual is limited to satisfaction with one's inherited disposition.

5. Jensen's dismissal of external motivational factors as capable of boosting IQ is based upon a study which reveals more about his thinking than it does about external motivation. The study simply
involved small children being praised after each test item, being verbally reproved for incorrect answers and rewarded with candy for correct answers. Because there was no change in their scores, Jensen concludes motivation cannot boost IQ. Formally, here was a range of environmental differences-candy and no candy. That he thinks such a trivial example of environmental differences exhausts the case for external motivational factors increasing IQ is astonishing. As if the difference in candy or no candy is equivalent to the presence or absence of those awesome moral and intellectual forces that turn people's lives around! To equate candy and spiritual forces as equally ineffectual external motivations reveals how little credence Jensen accords the latter as capable of boosting IQ.

6. Not surprisingly, Jensen writes off schools as capable of narrowing the IQ difference between the races. Because differences in the tangible inputs-school buildings, books, ventilation, etc.-did not make a difference to the educational progress of the children, he reasoned that nothing could. And for this conclusion, he found some support in the first Coleman report, *Equality of Educational Opportunity* (1966), which found that measurable inputs into schools did nothing to improve the scholastic achievement of pupils, and which Jensen interpreted as support for his genetic thesis-that schools were bumping up against hereditary limitations in their charges.

However, the failure of compensatory education, which led Coleman to conclude that schools do not make a difference, did not exhaust the case for education. According to some experts, the failure was due to the quality of the compensatory education offered in the late 1960s, not the capabilities of the students. For compensatory education at the time abandoned the effort to educate disadvantaged students; instead, it obsequiously accommodated the cultural deprivations of the students. By 1980 Coleman had changed his mind and felt that schools do make a difference; that those "students who achieve the most are those who work the hardest," regardless of background.

Jensen argues that the ineffectiveness of tangible inputs to increase educational outcomes proves the ineffectiveness of any
inputs—tangible or intangible—to boost educational achievement. One set of differences is no different from another; all they are is differences! Yet there is nothing in his variance methodology that supports a judgment that the kinds of factors that would instill discipline and habits of study would be irrelevant to greater scholastic achievement. From Jensen's point of view, those students who work the hardest are inclined to do so by character traits that correlate significantly with their inherited IQ. He dismisses the environmentalist view that hard work alone can improve scholastic achievement where there is no hereditary basis for such improvement.

7. Finally, Jensen rejects the contention that prejudice and family disintegration have made blacks more vulnerable to the harm of prejudice than other groups who have been discriminated against. He remarks that other groups besides blacks have suffered prejudice and family disintegration, but they have higher average IQ scores. Moreover, he continues, the mean score for blacks of high socio-economic status falls below that of the "lowest SES [socio-economic status] white group" and that of other groups-Japanese, Chinese, and Native Americans—who have also been subject to racial prejudice (EGD, 240, 253).

But surely this is a crude comparison. Furthermore, variance analysis says nothing about the consequences of being held back by prejudice when that constraint is imposed within a spiritual and cultural milieu much more debilitating and dispiriting than what other groups have suffered. Subtle, immeasurable, yet powerful spiritual accompaniments to prejudice and discrimination may be debilitating intellectually. The fact that other ethnic groups have been exposed to prejudice and discrimination, therefore, does not exhaust the case for these factors having a disproportionate impact on blacks. No other groups have such a history of being deliberately held back, nor such conflicted feelings about intellectual pre-eminence, which is a subject that W.E.B. DuBois wrote about eloquently at the turn of the century. 67

Since Jensen's variance analysis cannot register the influence of such factors, it does not justify dismissing them. Since Jensen does
so, we have to ask why? And for the answer to this we have to turn to his mission.

**Jensen's Mission**

Since Jensen repeatedly overreaches his methodology, the key to understanding him is not his methodology but his determination to deny the affective foundation for IQ. Jensen is teaching an entirely new perspective, one that substitutes genetic for traditional thinking. Genetic thinking demonstrates the pervasive influence of heredity over behaviors people attribute to conditions within human control, conditions people believe subject to their convictions of better and worse. From Jensen's point of view, genetic thinking is much less tender toward traditional sensibilities people have about control. Genetic explanations are free of the kind of self-indulgent "value judgments" that provide false comfort by blaming others. Likewise, genetic explanations are free of the kind of self-indulgent value judgments that provide false comfort in praising others for traits they are born with.

What better way to advance genetic thinking than to demonstrate by repeated example that science can explain human behaviors. Not the least attraction of genetic thinking for Jensen is the diminished status of individual responsibility. Things once considered blameworthy are now described scientifically as beyond people's control. To realize that the environment is essentially a foil for genetic tendencies liberates people from a burdensome falsehood that they are as much in control of their destiny as they would wish to be.

It is Jensen's ambition to advance a "Mendelian Revolution." And the major conquests that Jensen, the Mendelian revolutionary, foresees are the baneful "typologies" of racism, elitism, and egalitarian environmentalism. What do these baneful "typologies" have in common? A total lack of proportion between what people praise and blame and what is actually within their control. Racism and elitism will lose their force as soon as people come to understand how much human behavior is determined by the "random segregation and recombination of genes." Egalitarian environmentalism will lose its
appeal as soon as it is demonstrated how hopeless it is for social engineering to equalize people by compensating for their environmental deprivations.

Jensen's Denial of Human Nature

The mystery is the hold such prejudices have. If human behavior is so influenced by heredity, why do prejudices such as racism and elitism have a hold on people's opinions? By definition, there is no genetic basis for such prejudices. Indeed, they should not even exist if heredity has the kind of power that Jensen argues. Yet they do exist and are very powerful. The question is where do they come from?

These prejudices are perversions of that side of mental life that Jensen would deny—the natural, human desire to excel, which is the affective foundation for intelligence, rightly understood. Racism and elitism are rationalizations people embrace to hide the pain for having failed—to make something of themselves, to build the kind of life they potentially could have had. Rather than face this fact, people prefer to scapegoat others or society. And nothing that Jensen or any other scientist says is going to take away the sting of such failure. Similarly, egalitarian environmentalism reflects an embittered, envious despair over the prospect of achieving what one believes to be justice for oneself, of ever getting what one believes is one's due.

Since the human desire to excel gives rise to specific ideas of what we are naturally capable of, it is only by the proper cultivation of this desire that the "baneful typologies" of racism and elitism can be put on the defensive. Yet Jensen dismisses the affective foundation of IQ as pre-scientific, wishful thinking. His whole project renders ideas mysterious and ultimately irrelevant. What else can it mean to be invited to celebrate our individuality and not the principles that people deem worthy to live by? In Jensen's lexicon, mind is merely a cognitive apparatus with no room for principled convictions about anything.7

By denying the affective side of human nature—in short, by denying human nature—Jensen abandons the only means of enlisting people voluntarily in the struggle to overcome racism and
elitism. These prejudices will remain stubbornly rooted until people learn to act on the conviction that tolerance and good will are better and more admirable than prejudice and discrimination. Mendelism does not appear suited to accomplish such a change of heart.

Conclusion

By his denial of the affective foundation of IQ, Jensen is reduced to teaching that blacks are on the average at a genetic disadvantage intellectually. Because he denies the affective foundation of IQ, Jensen is reduced to recommending "voluntary eugenics" as the way for blacks to achieve equality:

'The possible consequences of our failure to study these questions may well be viewed by future generations as our society's greatest injustice to Negro Americans (GE, 331).

However, "voluntary eugenics" is a contradiction in terms. Has any people ever acted on the common belief that they are inferior genetically? One fears the means by which a group could become so dispirited as to ever accept biological expedients as a means of improving their lot. How could their attitude be other than passive-devoid of motivation, of intellectual striving, of emulousness? They would hardly be human. All that would remain of their intelligence would be used as an instrument in the service of any end-good only for the recall of information and calculation of the means to any end.

Unwittingly, Mendelism seems likely to effect just such a weakening of human spirit. Mendelism will provide the only kind of "education" that can pave the way for the acceptance of biological means for achieving equality—it will teach people how to outgrow their deepest longings to excel. Thus, Mendelism will propagate the
belief that human beings are without a nature, simply drawn from a gene pool and subject to change governed by statistical laws. Thus Mendelism will help society move beyond that pre-scientific outlook reluctant to consider people as "transmitters" of germ plasm. Then people may embrace biological means for achieving equality.

It is only on the basis of his impoverished view of the human that Jensen infers a genetic cause for the IQ test score gap between blacks and whites. Only by taking account of these intensely human concerns can one understand how one people may not yet have nurtured that level of intellectual desire necessary for the fullest expression of their genetic wealth. Only by capitalizing on these intensely human desires to excel can the IQ gap between blacks and whites be closed.

Philip B. Lyons
Washington, DC

Notes


185.

'Behavioral Genetics: A Primer' (New York: W.H. Freeman and Co.; 1990; 2nd Edition), pp. 367-368. Referring to the contribution of heredity to the distribution of IQ scores, Dr. Paul L. Nichols says that "heritability of IQ and race differences in IQ are really separate issues" and that most geneticists and psychologists believe that race differences in IQ are environmental. Ph.D., Development Neurology Branch, Division of Convulsive, Developmental, and Neuromuscular Disorders, The National Institutes of Health, personal correspondence, April 2, 1991. And, twenty years ago Harvard's Richard J. Herrnstein concurred in observing that there are only "scraps of evidence for a genetic component to the black-white difference [in IQ]," and that the "overwhelming case is for believing that American blacks have been at an environmental disadvantage."


James R. Flynn, who has documented inter-generational IQ gains, urges that "we must look at the environment with new eyes and try to identify the unknown factors that have done so much to transform the factors we know." "Massive IQ Gains in 14 Nations: What IQ Tests Really Measure," in Psychological Bulletin 1987, Vol. 101, No. 2, p. 189. Flynn, a psychologist, teaches at the University of Otago, New Zealand.


Jensen "challenges social scientists who believe in an environmental explanation of the IQ gap between the races to bring their hypotheses forward. Given his competence and the present state of the social sciences, the result is something of a massacre" (RIQJ, 40). Although he finds Jensen's conclusions unsupported by the evidence, Flynn nonetheless credits him with having "forged a steel chain of ideas... [which] leaves the environmentalist with almost no freedom of manoeuvre" (RIQJ, 71).

"All persons rightfully must be regarded on the basis of their
individual qualities and merits, and all social, educational, and economic institutions must have built into them the mechanisms for insuring and maximizing the treatment of persons according to their individual behavior" (EGD, 14).

8 Of all his critics, Flynn is one Jensen admires. For example, in his essays "Differential Psychology: Towards Consensus," Jensen declares Flynn's book, Race, IQ and Jensen, "a distinguished contribution to the literature on this topic [of race and IQ], and, among the critiques I have seen of my position, is virtually in a class by itself for objectivity, thoroughness, and scholarly integrity." Sohan and Celia Modgil, eds., Arthur Jensen: Consensus and Controversy (Philadelphia: The Falmer Press, 1987), p. 379.

9 In some respects...the social sciences still have not moved beyond personified blame, levelled at `society', `the establishment', `capitalism', or whatever personified entities at which we can vent our anger much as one can feel angry at an individual who intentionally commits a personal offense" (GE, 56).

"...[S]ocial classes and races are discrete systems of classification imposed upon what in nature are not at all discrete but rather continuous gene pools which vary statistically" (EGD, 8).

11 It is only when the groups are disproportionately represented in what are commonly perceived as the most desirable and the least desirable social and occupational roles in a society that the question arises concerning average differences among groups. Since much of the current thinking behind civil rights, fair employment, and equality of educational opportunity appeals to the fact that there is a disproportionate representation of different racial groups in the various levels of the educational, occupational, and socioeconomic hierarchy, we are forced to examine all the possible reasons for this inequality among racial groups in the attainments and rewards generally valued by all groups within our society" (EGD, 14-15).

12 Jensen declared his agreement with a professor Dwight Ingle, who wrote that "[w]hen all Negroes are told that their problems are caused solely by racial discrimination and that none are inherent within themselves, the ensuing hatred, frustration behavior-largely negative and destructive-and reverse racism become forms of
social malignancy" (EGD, 21).

"See also his statement, "I find myself in agreement with Professor Dwight Ingle, who has said, 'If there are important average differences in genetic potential for intelligence between Negroes and non-Negroes, it may be that one necessary means for Negroes to achieve true equality is biological'" (EGD, 21). The quote is from Dwight J. Ingle, "The need to study biological differences among racial groups: moral issues," in *Perspectives in Biology and Medicine*, 1967, Volume 10, p. 498.

"I know professors, for example, who cannot bring themselves to discuss racial group differences when any persons from different racial groups are present, and the fact that I am able to do so perhaps makes me appear insensitive in their eyes. I was once bothered by this too. I got over it as I studied more genetics and came more and more to appreciate its real implications" (EGD, 10).

"The term 'intelligence' should be reserved for the one specific meaning I have assigned to it, namely, the general factor common to standard tests of intelligence. Any one verbal definition of this factor is really inadequate, but if we must define it in so many words, it is probably best thought of as a capacity for abstract reasoning and problem solving. What I want to emphasize most, however is that intelligence should not be regarded as completely synonymous of what I call mental ability, a term which refers to the totality of a person's mental capabilities" (Boost, Jensen's emphasis, 19). Elsewhere, Jensen describes intelligence as "Level II ability"---the capacity for abstract reasoning (GE, 228), as the power of abstraction, of problem solving and conceptual learning (GE, 284). In contrast, people with high Level I ability are clever or shrewd, with powers of rote learning and short-term memory, but they do not score highly on IQ tests (GE, 234).

"The idea of general intelligence is itself an abstraction, a theoretical construct that cannot be properly understood without some basic conception of factor analysis, from which the notion of general intelligence gains its scientific meaning."(Bias, 184). Factor analysis is a statistical means for "extracting a general factor from a matrix of correlations among a number of mental tests" (Bias, 223).
In *Educability and Group Differences*, Jensen speaks of intelligence as a "theoretical construct to account for the consolidation of learning into organized structures" that permit the retrieval of learning, "broad generalization, and transfer to the solution of new problems and to the facilitation of new learning" (*EGD*, 354).

His acceptance of behavioral genetic methodology and modes of analysis is not uncritical. He supplements the work of Erlenmeyer-Kimling and Jarvik, which he relies upon for determining heritability in the mainstream population, see *infra*, footnote 24, with additional data not included in their survey and applies formulas of his own for arriving at an heritability estimate (*Boost*, 48, 51).


Variance is the statistician's term for deviation from the mean or average IQ score. To understand what variance is, picture a graph with test scores arrayed along the horizontal axis with the lowest scores to the left and the highest to the right, and the number of persons with scores at each particular level displayed on the vertical axis with the larger the number receiving any particular score, the higher the point above the horizontal axis. All the scores together might lie in a bell-shaped distribution with two tails and a hump in the middle. The tails would be the small number of low scorers on the left and the small number of high scorers on the right and the center of the hump would be the mean or average around which most of the scores cluster. The variance measures the dispersion of scores above and below, that is to the right and to the left of the mean. If the variance is low, most of the population's IQ test scores are close to the mean, either above or below. If the variance is high, most of the population's IQ test scores are farther away from the mean, either above or below. Variance, therefore, is a strictly relative measure of the dispersion of a group's IQ test scores about the mean for that particular group.

Herrnstein continues: "If the number is large, then skin color [for example] is largely heritable; if very small, then the heritability is negligible. If the number is large, then there will be marked family resemblances; if small, then members of given families will be no
more alike than unrelated people. To convey such information, the number must reflect which group of people we choose to study. Consider first the United States, with its racial and ethnic diversity. Much skin variation here is related to ancestry, hence genetic, whether black, white, yellow, red, or Mediterranean, Nordic, Alpine, or some blend. Family resemblances in skin color are quite strong in America, so the heritability should come out large. Now contrast this with an isolated village in Norway, full of Scandinavians with generations of pale-skinned ancestors. In the Norwegian town, whatever little variation there is in skin color is likely to be environmental, due to circumstances of life rather than to the accident of inheritance. As regards skin color, children will be no more like their parents than their nonrelatives, so heritability should come out low" \textit{(IQM, 176)}.

Intelligence, writes Jensen, "is not susceptible to manipulation by strictly psychological or educational techniques. This conclusion is consistent with the theory that g [the psychometric measure of intelligence] is essentially a function of biological factors, both genetic and constitutional, and if it is to be appreciably altered, it would have to be altered by biological means. Hence good or bad physical health (both pre- and post-natal), presence or absence of perinatal trauma and childhood diseases, and poor or optimum nutrition throughout the developmental years probably contribute more of the environmental variance in g than do any psychological or educational factors, assuming a normally humane social environment." From "Spearman's g and the Problem of Educational Equality," p. 175. "The italicized lower-case g is the symbol he [Charles Spearman, arguably Britain's greatest psychologist] adopted for the general factor that exists in any and every large collection of diverse mental tests....the g factor reflects whatever it is...that causes \textit{individual differences} in performance on any indicator of mental ability to correlate positively with performance on every other such indicator..." \textit{Ibid.,} p. 170 (Jensen's emphases).

"To the degree that the individual's genetic propensities cause him to fashion his own environment...the covariance" can be "regarded as part of the total heritability of the trait" \textit{(Boost, 39)}.\"
If one wishes to estimate what the heritability of the trait would be under artificial conditions in which there is absolutely no freedom for variation in individuals' utilization of their environment, then the covariance term should be included on the side of the environment" (Boost, 39).

'Specifically, he draws upon the survey of Erlenmeyer-Kimling, L., and Jarvik, L.F. "based on 52 independent studies of the correlations of relatives for tested intellectual abilities, involving over 30,000 correlational pairings from 8 countries in 4 continents obtained over a period of more than two generations" (Boost, 48). The survey, "Genetics and intelligence: a review," appeared in Science, 1963, Vol. 142, pp. 1477-1479.

Arthur R. Jensen, "Race and the Genetics of Intelligence: A Reply to Lewontin," in N.J. Block and Gerald Dworkin, eds., The IQ Controversy: Critical Readings (New York: Pantheon Books, 1976), p. 103. Elsewhere he declares, "I have been falsely accused of claiming that high heritability of IQ inevitably means that the mean differences in IQ between social class groups and racial groups must be due to genetic factors. I have never made this incorrect inference. What I have said is this: While it is true, indeed axiomatic that heritability within groups cannot establish heritability between group means, high within group heritability increases the a priori likelihood that between groups heritability is greater than zero" (ED, 408, Jensen's emphases).

If "the Negro-white IQ difference is attributable entirely to non-genetic factors, there must exist some as yet unmeasured aspect of the environment, for no one has yet identified or measured any set of environmental conditions on which the Negro and white populations differ, on the average, by" as much as 15 IQ points (EGD,166-167).

Herrnstein agrees: "Such qualities as temperament, personality; appearance, perhaps even physical strength or endurance, may enter into our strivings for achievement and are to various degrees inherited" (IQM, 212).

Reportedly it was the Coleman Report that led Jensen to publish his landmark article declaring that heredity made it impos-

For example, Jensen writes that among the inadequate explanations of IQ test score differences between blacks and whites are those "which are virtually untestable empirically." *Straight Talk About Mental Tests* (New York: The Free Press, 1981), p. 215. Nonetheless, Jensen accords such factors greater respect elsewhere, when he argues that such virtually untestable factors as motivation are correlated "with those mental abilities requiring the most education for their full development." *Educational Differences*, p. 388. My point is there may be a dynamic cause and effect relationship between intangible aspects of character and the development of intelligence that is not captured by the statistical notion of correlation.


""Unknowns in the IQ Equation," in *The IQ Controversy*, p. 123.

See supra footnote 3.

[I]nsofar as group differences such as class or race differences have genetic components, these must necessarily be correlated with environmental differences; and we can make no extrapolation of our estimates of within-group heritabilities to between-group differences, for we may not extrapolate from within-to between-population genetic variances." "Limitations to Genetic Comparisons of Populations," in Block & Dworkin, *The IQ Controversy, pp.* 142-143.


Layzer is a professor in the Department of Astronomy at Harvard University.


I am indebted to Dr. Robert Licht for articulating this distinction so forcefully that it helped immensely in thinking about race and IQ.


"[T]he search for a personal identity among survival-oriented subjects... involved... making a choice. This choice often involved not only rejecting imposed definitions from the wider society but also surrendering attachments to those patterns within their own group which stifled hope and limited the development of pride and self-esteem and, thus, detracted from the establishment of a personal identity. These choices represented the subjects' incorporation of the idea of autonomous functioning, and they were inspired by the subjects' achievement in the past and their goals for the future. Insofar as these choices reflected the subjects' desire for self-realization and independence of action, they represented a combination of factors which embodies the assertion of dignity and the
establishment of personal identity" (Chesnaisg, 185).

"... [I]n such neighborhoods the chances are overwhelming that children will seldom interact on a sustained basis with people who are employed or with families that have a steady breadwinner. The net effect is that joblessness, as away of life, takes on a different social meaning; ....The development of cognitive, linguistic, and other educational and job-related skills necessary for the world of work in the mainstream economy is thereby adversely affected. In such neighborhoods, therefore, the teachers become frustrated and do not teach and children do not learn. A vicious cycle is perpetuated through the family, through the community, and through the schools." The Truly Disadvantaged: The Inner City, The Underclass, and Public Policy (Chicago: The University of Chicago Press, 1987), p. 57.

45 Convinced that "an unjust and deleterious environment damages one's capacities as well as one's opportunities" (RIQJ, 211), Flynn cites studies showing that "the majority of black children classified as mentally retarded suffer from no genetic barrier to abstract thought. Rather they may suffer from an environmental handicap, that is, the ghetto environment places strong emphasis on immediate gratification, present experience, and dealing with concrete problems, with little emphasis on abstractions, non-verbal symbols, and problem-solving for its own sake" (RIQJ, 206).

46 Psychologist Lee Willerman renders this thought radically: "Since race represents a social class in America, unfortunately, those who are identified as blacks are relegated to a social situation that by its nature forces them into an inferior position.... Thus the lower social class finds difficulty in producing individuals that can reach high achievement levels, since they carry their badge of identification, like the scarlet letter A, always with them. It is impossible to test IQ in the newborn. By the time the child reaches the age at which he can be tested reliably, he has already absorbed imprints of cultural inferiority. The black child is taught from birth that he has no chance, he has no opportunity. He is taught that such things as haste only works for the white man, and therefore the black should slow down. It is not possible, therefore, to equate blacks and whites on the basis
of income or educational background. The black child is basically taught to see things, hear things, and say nothing. He is taught that successful competition will be met by physical damage, embarrassment, failure of recognition, or ridicule. Therefore timed examinations are meaningless for most ghetto children and indeed after 6 or 7 years of age the child is so deeply imbued with the concept of the hopelessness of the situation that the vast majority could not care less about intellectual pursuits." From "A Comment on IQ: Methodological and Other Issues," in Sandra Scarr, ed., *Race, Social Class, and Individual Differences in IQ* (Hillsdale, NJ: Lawrence Erlbaum Associates Publishers, 1981), pp. 213, 214. Willerman is a Professor of Psychology at the University of Texas, Austin.


According to Jencks, Arthur Jensen is an exemplar of the "conventional method" of establishing heritability. "If an individual's genotype affects his environment, for whatever rational or irrational reason, and if this in turn affects his cognitive development, conventional methods of establishing heritability automatically attribute the entire effect to genes and none to environment" *Ibid.,* pp. 66-67 (Emphasis supplied).

"Genotype" is the genetic constitution of an individual, fixed when the "parental sperm and ovum unite," and is to be contrasted with the "phenotype," the actual trait, such as IQ, which is a combination of genetic and environmental factors. In Jensen's words, phenotype is the "result of the organism's internal genetic mechanisms established at conception and all the physical and social influences that impinge on the organism throughout the course of its development" *(Boost, 17).*

"There seems, for example, to be an association between the amount a mother talks to her child and the child's subsequent verbal skills. If talking to the child is interesting and pleasant, most mothers will talk more than if the child is inarticulate. If the child's verbal responses to its mother are affected by its genes, as seems likely, then
the mother's dealing with the child will also end up being determined partly by the child's genes. This cycle is likely to be repeated at school. The child who starts off with a small genetic advantage may learn quickly, receive encouragement, and learn more" (Jencks, 67). "Small genetic differences may therefore end up producing big environmental differences and hence big differences in test scores" (Jencks, 68).

No matter whether one assumes a theoretical maximum of .50 relationship between the genotypes of parents and children, or as little as .25, the amount of the total variance attributable to the correlation between environment and heredity, that is, to covariance, is substantial and never less than .19" (Jencks, 281). What the persistent .19 covariance measure that Jencks extracts from the data reveals is the influence of parents and society-encouraging and nurturing the intellectual development of the younger generation, particularly the most promising.

Consequently, his analysis of variance for IQ test scores yields a much lower heritability figure than Jensen's. Jenck's best estimate of the amount of variance in IQ to attribute to heredity is 45 percent, to environment, 35 percent, and to covariance, 20 percent (Jencks, 66, 315).


..." (Jencks, p. 738.)


The results from this study indicate that the ethnicity of the rearing environment, not just socioeconomic status and maternal education level, exerts a significant influence on children's styles of responding to standardized intelligence tests and their test achievement. The effects of the ethnic rearing environment appear to be mediated, in part, by mothers through their...

57 R. Hess and V. Shipman, "have produced some of the most provocative forays into early mother-child interactions among black families. Discussing 'cultural deprivation,' they argue that the behavior leading to social, educational, and economic poverty is learned early in childhood and that the central feature is a lack of cognitive meaning in the mother-child interaction. They hypothesize that the lower-class home constricts the number and variety of alternative notions and thoughts that promote cognitive development....they suggest that parental language crucially shapes the development of cognitive processes and that the language of the lower-class home is inadequate in this respect by middle-class standards." Lee Willerman, *The Psychology of Individual and Group Differences* (San Francisco: W.H. Freeman and Company, 1979), p. 462, referring to R. Hess and V. Shipman, "Early experience and the socialization of cognitive modes in children," in *Child Development, Vol. 36* (1965), pp. 869-886.

58 Herrnstein, for example, criticizes the rejection of a genetic explanation of the higher black arrest, conviction, and imprisonment rates in favor of discrimination and socio-economic deprivation. "There is, for instance, evidence showing that tested intelligence and other individual psychological traits are among the primary predictors of criminal behavior." "Still an American Dilemma," *op.cit.*, p. 14. Herrnstein discounts the impact of bad conditions on the motivation of youngsters to abide by the law.


"Intelligence differences between social classes (within racial groups) are the one type of subpopulation difference in which a substantial genetic component is really no longer in dispute among geneticists, psychologists, and sociologists who have studied the research evidence on this topic....The substantial correlation, aver-
aging between 0.40 and 0.60 in various studies between indices of SES [socio-economic status] and phenotypic [observed or measured] intelligence is one of the most consistent and firmly established findings in psychological research" (*EGD*, 151, author's emphasis.) See also Herrnstein: "The correlation between I.Q. and social class (usually defined in terms of occupation, income, and patterns of personal association) is undeniably, substantial, and worth noting" (*IQM*, 115).


"*Ibid.*

64« .[I]t seems most likely that those traits of personality and temperament which complement and reinforce the development of intellectual skills requiring persistent application, practice, freedom from emotional distraction, and resistance to mental fatigue and to boredom in the absence of physical activity should become genetically assorted and segregated, and thereby correlated, with those mental abilities requiring the most education for their full development—those abilities most highly valued in a technological culture. Thus ability and personality traits will tend to work together in determining individuals' overall capability in the society" (*ED*, 388).

65 Insisting on their insight that there was a "culture of poverty," educators conducting "deprivation research," criticized the attempt of compensatory education to make disadvantaged children "into little replicas of middle children." Diane Ravitch, *The Troubled Crusade: American Education, 1945-1980* (New York: Basic Books, Inc., 1983), p. 155. Instead, they advocated teaching methods which "acknowledged" lower-class children's "non-verbal modes of communication" *Ibid.* Diane Ravitch strongly implies that deprivation research weakened compensatory education. To suggest that "verbal skills are 'middle-class' and to complain that the emphasis on teaching of verbal skills is unfair to those who lack them, is to propose that the school cease to function as a school" pp. 154, 157.

He described how black powers of mind and body had "been strangely wasted, dispersed, or forgotten," because the culture at the time was ambivalent about the role of the best: "The shadow of a mighty Negro past flits through the tale of Ethiopia the Shadowy and of Egypt the Sphinx. Throughout history, the powers of single black men flash here and there like falling stars, and die sometimes before the world has rightly gauged their brightness. Here in America, in the few days since Emancipation, the black man's turning hither and thither in hesitant and doubtful striving has often made his very strength to lose effectiveness, to seem the absence of power, like weakness. And yet it is not weakness, it is the contradiction of double aims....By the poverty and ignorance of his people, the Negro minister and doctor was tempted toward quackery and demagogy; and by the criticism of the other world, toward ideals that made him ashamed of his lowly tasks. The would-be black savant was confronted by the paradox that the knowledge his people needed was a twice-told tale to his white neighbors, while the knowledge which would teach the white world was Greek to his own flesh and blood. The innate love of harmony and beauty that set the ruder souls of his people a-dancing and a-singing raised but confusion and doubt in the soul of the black artist; for the beauty revealed to him was the soul-beauty of a race which his larger audience despised, and he could not articulate the message of another people. This waste of double aims, this seeking to satisfy two unreconciled ideals, has wrought sad havoc with the courage and faith and deeds of ten thousand people,-has sent them often wooing false gods and invoking false means of salvation, and at times has even seemed about to make them ashamed of themselves." The Souls of Black Folk (New York, NY: Library of America, 1986), pp. 365-366. This book was first published in 1903.

"The modern genetic view of man calls for a revolution in our thinking, in our whole orientation. It demands on everyone's part an even more drastic reorientation of thinking than was required by other historical revolutions of thought, such as the Copernican, Darwinian, and Einsteinian revolutions....The educational task that is called for is awesome..." (EGD, 7).
He continues: People are apparently ignorant of the genetic facts of random segregation and recombination of genes, or of the fundamental principle that the properties of an individual depend upon the state in which he finds himself and not upon the state from which he is derived, or the fact that social classes and races are discrete systems of classification imposed upon what in nature are not at all discrete but rather continuous gene pools which vary statistically. This mistaken typological thinking proclaims 'like begets like' but ignores the other half of genetic fact—that like also begets unlike', due to segregation and recombination of genes in the creation of every individual" (EGD, 7-8).

His conception of mind as an apparatus for consolidating "learning into organized structures" which permit the retrieval of things learned, "broad generalization, and transfer to the solution of new problems and to the facilitation of new learning" (EGD, 354) says nothing of the that for the sake of which people use their minds. There is no account of what motivates a person to retrieve things learned, to generalize, to apply lessons from the past to the solution of new problems, to engage in new learning, or to organize learning into certain structures and not others. It is as if these activities occur automatically. In short, there is no place for a specifically human nature in Jensen's conception.

"The social class differential in birthrate appears to be much greater in the Negro than in the white population. That is, the educationally and occupationally least able Negroes have a higher reproductive rate than their white counterparts, and the most able segment, the middle class, of the Negro population have a lower reproductive rate than their white counterparts. If social-class intelligence differences within the Negro population have a genetic component, as in the white population, this condition could both create and widen genetic intelligence differences between Negroes and whites. The social and educational implications of this trend, if it exists and persists, are enormous. The problem obviously deserves thorough investigation by social scientists and geneticists and should not be ignored or superficially dismissed because of well-meaning wishful thinking" (GE, 331).