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The Science of Race in Education

Beth A. Durodoye
Department of Counseling, Development, and Higher Education
University of North Texas

Social and medical sciences have historically played a role in many of the racial misconceptions educators have about various ethnic groups. The Western emphasis on scientific empiricism has served to validate questionable hypotheses and theories that contribute to destructive stereotyping. As a result, educators may continue to perpetuate racial discourse based on stereotypical beliefs, rather than facts. This article will address race, racial theory, and racism. By critically analyzing historical information, educators have the opportunity to make more informed judgements regarding the validity of these hypotheses. In so doing, educators take responsibility to contribute more objective information within their disciplines.

The use of numbers to quantify data has given credence and support to a myriad of studies concerning the abilities of various ethnic populations. Western thought contends that the path to new knowledge about a particular subject matter can be best achieved through the rational, linear, and logical processes integral to U.S. culture and within which scientists have been traditionally trained. Social scientists have had the cognitive and numerical power to sanction their ideas, no matter what the hypotheses. It stands to reason then that the results provided by scientists have been considered to be more believable than results garnered by other means. Gould (2000) stated that the social sciences have exuded the illusion of power and control. This illusion, combined with human apathy, has created barriers resulting in the perpetuation of racial discourse based on stereotypical beliefs, rather than facts.

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The scientific path to racial enlightenment has provided both interesting and questionable results with regard to the mental health and intelligence of ethnic groups—particularly as these areas relate to persons of African descent. This article will chronicle the history of scientific racism and manifest how this concept has served to perpetuate many misconceptions assigned to various populations today.

Race

Origins and Traditional Definitions

Race has a multifaceted history. Jones (1997) noted that, before the 1500s, the term was applied to the breeding of domestic plants and animals. From the 1500s to 1800s, race was used to denote cultural distinctions, such as lineage, customs, and religion—concepts that would today be defined as culture. Subsequent to 1800, a shift in thinking occurred in Europe that emphasized scientific methods. The definition for race then changed from cultural to biological based on one’s physical properties. Race has been commonly associated with a biologically based classification system based on the paired criteria of geographic locale and distinct physical characteristics (Diamond, 1994; Jones, 1997). At the same time, race has also been viewed as a sociohistorical construction that shapes one’s thinking about people and their respective group affiliations (Jones, 1997).

Racial Distinctions

Gould (1994) credited an 18th-century scientist as most influential to the way Westerners perceive races. Johann Friedrich Blumenbach (1752–1840), of German
descent, was considered to be “one of the greatest and most honored scientists of the Enlightenment” (p. 65). It was Blumenbach who coined the term *Caucasian* for persons of European descent. It was his racial taxonomy that was most influential to the history and issues of the United States.

Blumenbach’s racial classification system was not wholly original. It was based on the groundbreaking taxonomic work of his mentor, Carolus Linnaeus, a Swedish scientist. Linnaeus proposed a four-race system of Homo sapiens based on geographical location. The races included Americanus, Europaeus, Asiaticus, and Afer (African). These racial varieties were distinguished by “color, humor, and posture” (Gould, 1994, p. 67), which were characteristics based on the taxonomic assumptions of the period.

For the American variety, Linnaeus wrote “rufus, cholericus, rectus” (red, choleric, upright); for the European, “albus, sanguineus, torosus” (white, sanguine, muscular); for the Asian, “luridus, melancholicus, rigidus” (pale yellow, melancholy, stiff); and for the African, “niger, phlegmaticus, laxus” (black, phlegmatic, relaxed). (p. 67)

Linnaeus also labeled each race according to behavior. The American was characterized by habit; custom distinguished the European; belief qualified the Asian; and caprice marked the African. These suggestions hinted at a racist behavioral hierarchy that placed Europeans in the uppermost echelon, followed by Asians and Americans in the middle category, with Africans occupying the lowest realm. Blumenbach adhered to the tenets of Linnaeus’ work in his early career, but later decided to depart from this racial categorization. This pivotal departure signified a racial classification scheme that went from one based on geography to one based on aesthetics.

Blumenbach contended that Homo sapiens hailed from one region and eventually spread to other parts of the world. The origin of humanity was believed to be the surrounding area of the Caucasus Mountains of Russia. This race of people was also believed to be closest to the physical ideal of humankind. Hence his creation of the term *Caucasian* to represent the epitome of the European race.

Racial differences were thought to be the result of living in various geographical locations. Any divergence from the original form of humanity was considered to be a “degeneration” (Gould, 1994, p. 68). To this end, the Caucasian race degenerated along two lines. The most degenerate form of humanity on one side was Asian, while on the other was African. Native Americans represented the intermediary race between Europeans and Asians. Blumenbach invented a fifth race, Malays (e.g., Polynesians, Melanisians, and Australian Aborigines), to balance his five-race equation, thereby producing “the conventional hierarchy of implied worth that has fostered so much grief ever since” (p. 69). Guthrie (1998) informed that this classification, along with many that followed Linnaeus’ era, consistently placed Black persons lowest on the human hierarchy.

**Scientific Racism**

Thomas and Sillen (1972) referred to scientific racism as a rationale for White supremacy. Chase (1977) stated that scientific racism centered on the idea “that everything about a persons condition in life—from his socioeconomic status and his educational achievement to his life span and the quality of his health is immutably preformed in the genes he inherits from his parents at the moment of conception” (pp. 5–6). Thomas and Sillen (1972) noted that scientific racism rested on two common themes—psychological pathology and intellectual inferiority.

**Psychological Deficiency**

Ethnic minority differences have traditionally been framed as deficiencies in racial discourse (Sue & Sue, 2003). This was the case with historical literature linked to pathology. Thomas and Sillen (1972) catalogued mid 19th-century and early 20th-century research that yielded an array of psychological conclusions, examples of which may be found in the following:

1. Runaway behavior, exhibited by both cats and Blacks (Guthrie, 1998), was psychiatrically diagnosed as Drapetomania. Simple dissatisfaction with the conditions of enslavement garnered a Dysaesthesia Aethiopica diagnosis.

2. G. Stanley Hall, renowned psychologist, first president of the American Psychological Association, and “Father” of child psychology, asserted that Africans, Indians, and Chinese belonged to “adolescent races” in a stage of immature development.

**Intellectual Inferiority**

Intelligence has been fluidly conceptualized as a multidimensional entity that envelopes one’s hierarchical abilities (Sternberg, 1996). Ideas surrounding intelligence and genetics have received a thorough review in racial literature. It is no wonder these topics were considered the major weapons of the scientific racism arsenal (Chase, 1977; Thomas & Sillen, 1972). Principal
works of the late 19th and early 20th centuries spoke to the inherent intellectual inferiority of Blacks and other low-ranked races, as compared to the inherent superiority of White intelligence.

Perceived as cognitively backward, stigmatized races could in no way compete with a White race endowed "with a high development of the ethical and esthetic faculties and great reasoning powers" (Thomas & Sillen, 1972, p. 5).

The first standardized human intelligence test was published in 1905 (Lemann, 1999; Walsh & Betz, 2001). French psychologists Alfred Binet and Theophile Simon were commissioned by the French Ministry of Education to develop an instrument that could identify special needs children (Walsh & Betz, 2001). The Binet–Simon intelligence test emphasized one’s capacity for good judgement and reasoning. Binet advocated that the children identified by this assessment instrument be helped through special education programming and be treated as worthwhile human beings (Lemann, 1999; Walsh & Betz, 2001).

Lewis Terman, the distinguished psychologist from Stanford, was the first to adapt the Binet–Simon intelligence test to U.S. standards. His views on the use of the revised Stanford–Binet varied significantly from that of its originators. Terman believed in the use of the intelligence test scores to sort students by level in the educational system. This was thought to correspond to one’s socioeconomic status in adulthood (Lemann, 1999). As applied to ethnic minority populations, Terman stated that his IQ testing of Spanish Indian, Mexican, and Negro families revealed low levels of intelligence, most likely due to race. He pronounced the children of these families to be uneducable (Thomas & Sillen, 1972). The testing atmosphere of the time was so frenzied that Horace Mann Bond, an African American professor critical of the biased process, was prompted to write, "ever since the ‘measurement of minds’ became a popular field in which to pursue investigations, the testing of Negro children has easily ranked as a major indoor sport among psychologists” (Bond, 1927, p. 257).

The eugenics movement. The fledgling IQ-testing movement coincided with the eugenics movement, “which held that intelligence was mostly inherited and that people deficient in it should be discouraged from reproducing” (Lemann, 1999, p. 115). The eugenics movement gained popularity at the turn of the 20th century, with the participation of increasing numbers of social scientists. Ideas pertaining to the improvement of genetic qualities were not considered new and harked back to the Greek philosophies of Plato and Aristotle (Guthrie, 1998; Montagu, 1974; Walsh & Betz, 2001). During the late 18th and early 19th centuries, Thomas Malthus, a political economist in Britain, proposed the restriction of poor and unfit populations for the betterment of world economic opportunities (Chase, 1977; Guthrie, 1998). This ideology maintained that only strong and intellectually superior humans would survive conflicts with other humans, or with the environment (Guthrie, 1998).

Sir Francis Galton, cousin to Charles Darwin of “survival of the fittest” evolutionary fame, has been credited with introducing the term eugenics and ushering in modern ideas regarding the concept (Eaton, 1997; Guthrie, 1998). Galton’s eugenic ideas concerned the improvement of genetic characteristics through “agencies under social control” (Eaton, 1997, p. 655). Within this area was his keen interest in the inheritance of human intelligence. Galton has been acknowledged as the first to lend scientific attention to the notion of human intelligence (Eaton, 1997; Walsh & Betz, 2001). His beliefs in this area included selective reproduction over generations that would lead to the betterment of racial stock (Guthrie, 1998). Galton helped found the Eugenics Society of Great Britain in 1908 (Eaton, 1997; Guthrie, 1998). This organization was instrumental in connecting eugenicists domestically and abroad.

The American Eugenics Society was created in 1926 (Eaton, 1997; Guthrie, 1998). In the United States particularly, core beliefs involved genetic deficiencies of social and racial groups (Eaton, 1997). The theoretical underpinnings of eugenics were interpreted as “superior reproduces superior, inferior reproduces inferior, and the criminal reproduces the criminal” (Guthrie, 1998, p. 96). Membership consisted of White professionals who counted among them large numbers of university professors, administrators, and researchers (Guthrie, 1998). It was through academicians that many U.S. colleges and universities became unwittingly associated with eugenic ideology. Educational psychology, especially, was aligned with tenets of the movement because of a mutual focus on learning and intelligence (Guthrie, 1998). These early psychological investigations into intelligence changed the concept from one based on philosophy and intuitiveness to one based on measurement (Walsh & Betz, 2001). Misinformation concerning the abilities and disabilities of ethnic populations was nurtured in these learning communities. Sensational ideas about individuals and groups and their learning capacities received widespread publicity partly because of the teaching, writing, and publishing activities of high profile social science faculty.

Lewontin, Rose, and Kamin (1984) stated that “the clearest evidence, by far, for the genetic determination of IQ was the massive lifes’ work of the late Sir Cyril Burt” (p. 101). Burt has been touted by many as the “Father” of educational psychology; was knighted by the British
Monarchy (the first psychologist to be so honored); and was presented an illustrious award by the American Psychological Association (Lewontin et al., 1984; Sue & Sue, 2003). Burt’s distinguished career also included one of the most notorious dupes in the scientific world.

A convenient way to study the nature versus nurture debate on IQ has been with the use of identical twins reared apart (Gould, 2000). Burt’s IQ study, of a supposed 53 separated identical twins, was the largest such study ever reported (Lewontin et al., 1984). A thorough critique of his work by both admirers and detractors points out that Burt molded his research to fit his belief that intelligence was genetically determined (Lewontin et al., 1984). Lewontin et al. (1984) elaborated on Burt’s hoax stating that Burt guessed the IQs of his subjects’ relatives and claimed them as scientific truth; reported IQ correlations identical to the third decimal from different data sets—a mathematical impossibility; fabricated two research associates and published under these names; and did no research during the last three decades of his life, when most of the separated twins had supposedly been studied. The authors declared Burt did not provide answers to the inquiries of the how, when, or where of his data collection.

Contemporary Racial Viewpoints

As a biological concept, race has been discredited of scientific merit (Diamond, 1994; Guthrie, 1998; Jones, 1997). The arbitrary nature this concept can be seen in anthropological racial designations that range from 3 to more than 100 (Parrillo, 2000). Other anthropologists, such as Ashley Montagu, advocate the avoidance of racial designations (Montagu, 1970, 1974). Jones (1997) stated the we are all members of a single human race. The three U.S. Census racial categories used in 1860 have now expanded to 30 in the 2000 census (Campos-Flores, Smith, Breslau, Samuels, & Clemetson, 2000).

Diamond (1994) has taken racial categorization one step further. He stated that, just as people have been traditionally divided by geography and physical attributes, so too can they be categorized by resistance, genes, digestion, and fingerprints. Race by resistance can be illustrated by the presence or lack of the sickle-cell gene, which confers resistance to malaria. This would mean that Greeks, Thai, and Yemenites, among other groups, would represent one race, with the presence of the antimalarial gene, whereas Norwegians and other Black African groups would represent a race minus this gene. Race by genetic distinctiveness would place the Khoisan people hailing from southern Africa in one race, other Black African groups in another race, and the Norwegians, Navajo, Japanese, and the remainder of the people in the world in a single race. Race by digestion would involve the lactase enzyme carried into the adult years. Northern and Central Europeans, Arabians, and the Fulani of West Africa would represent a lactase-positive race. Lactase-negative races would consist of the majority of other African Blacks, East Asians, American Indians, Southern Europeans, and Australian Aborigines. Lastly, fingerprint types could be used to divide humans. A “loops” race would be represented by the majority of Europeans, Black Africans, and East Asians. “Whorls” would consist of Mongolians and Aboriginal Australians. The Khoisan people of southern Africa, along with some central Europeans, would comprise a race of “arches.”

The ambiguous meaning of race has fueled a debate involving the continued use of the term. Jones (1997) astutely observed that “we use the word race everyday with the assumption that we know what we are talking about” (p. 341). Nieto (2000) stated that race denies the individual experience, language, and ethnic background of groups. To exemplify her point, she noted that African Americans and Haitians are considered Black. Both groups share a cultural heritage and have experienced oppression living in the United States. Color, however, belies the uniqueness of each group. Nieto (2000) then, advocated use of the term only when color was the prominent issue.

The editors of the journal Race Traitor take an opposing stance. In their opinion, White race is a social construction and as such, should be abolished (Race Traitor, 1996–2001). As new abolitionists, they contend “that people were not favored socially because they were white, rather they were defined as ‘white’ because they were favored socially” (“Abolish the white race—by any means necessary,” 1993). The privileges bestowed to the White race are problematic in that justice and human rights are denied to those who are not members. This system becomes dismantled if enough persons see through the farce of conformity that maintains white privilege. When this occurs, the way will be paved for the definition of a new whiteness.

These arguments run the gamut of the terminology spectrum. It is interesting to note that the divergent orientations contain similarities. First, so-called race and its attending conceptual baggage remain entrenched in society’s psyche. Second, active cognitive steps are necessary to affect the manner in which individuals and society feel, think, and ultimately act on the idea of race. Whether the word is used or not, underlying attitudes and behaviors remain and must be challenged and attacked. Lastly, both orientations illustrate the educator’s responsibility to use racial rhetoric in a clear and concise manner.

The debates and discussions surrounding race demonstrate evidence that there are more differences within
groups than there are between groups of people (Gould, 1994; Hoffman, 1994; Lewontin et al., 1984; Shreve, 1994). Along these same lines is data from the Human Genome Project. The goals of this international research effort are to map human genes and sequence their billions of DNA subunits (Human Genome Project Information, 2002). Investigations indicate that the DNA of human beings is 99.9% the same (Human Genome Project Information, 2002). Hoffman (1994) mathematically calculated genetic information as follows:

On average there’s .2 percent difference in genetic material between any two random chosen people on Earth. Of that diversity, 85 percent will be found within any local group of people—say, between you and your neighbor. More than half (9 percent) of the remaining 15 percent will be represented by differences between ethnic and linguistic groups within a given race (for example, between Italians and French). Only 6 percent represents differences between races (for example, between Europeans and Asians). And remember—that’s 6 percent of .2 percent. In other words, race accounts for only a minuscule .012 percent difference in our genetic material. (p. 4)

Despite overwhelming evidence from the academic sector pointing out that race is not a biological absolute, the larger society has continued to label human groups in a way that bears deep-felt social consequences (Jones, 1997; Parrillo, 2000). “Rightly or wrongly, race has a social meaning that people cannot or will not easily give up” (Jones, 1997, p. 347).

The New Scientific Racism

In 1956, physicist William Shockley was awarded the Nobel Prize as one of the inventors of the transistor; he has subsequently been named as one of the top 100 great minds of the 20th century (Moore, 1999). In 1963, with no background in the fields of genetics or psychology, Shockley began his research on intelligence (Guthrie, 1998; Moore, 1999). His “dysgenics” theory reflected his concern about the decline of “superior elements” due to increased survival and reproduction rates of “inferior strains” (Shockley, 1965, p. 70). He believed African Americans to be less intelligent than Whites, stated that remedial education efforts and welfare programs were useless, and advocated voluntary sterilization for pay for individuals with low IQs (Guthrie, 1998; Moore, 1999; Shockley, 1965).

The Head Start program and other compensatory education efforts arrived during the late 1960s and early 1970s. So to did the work of educational psychologist Arthur Jensen, who took a confrontational stance toward this public policy issue (Guthrie, 1998; Herrnstein & Murray, 1994). In 1969, the University of California-Berkeley professor wrote the controversial article “How Much Can We Boost IQ and Scholastic Achievement,” which was published in the Harvard Educational Review (Gould, 2000). In it, he argued for the reevaluation of programs that emphasized educational enrichment for children whom he believed could not be pushed to learn beyond their limited genetic potential.

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The publication of The Bell Curve: Intelligence and Class Structure in American Life (Herrnstein & Murray, 1994) created yet another opportunity to reconstitute the genetic deficiency theory. The authors aligned themselves with a classical model of viewing intelligence (i.e., identification of the core components of intelligence)—a model, they believed, espoused the ideas of Jensen and Galton. They discounted sociocultural factors in favor of speaking to the fixed state of intelligence, particularly as exhibited by ethnic minorities and other oppressed populations. Herrnstein and Murray (1994) went on to make suggestions as to how populations with low cognitive abilities could best fit in broader U.S. society, given their limited capacities.

More recently, a list of academicians who continue to espouse controversial racist views has been put forth by the Journal of Blacks in Higher Education (“A rogue’s gallery of academic racialists: Racism hiding behind a Ph.D.” n.d.). Several of the scientists cited assert that the major races are differentiated through genetic patterns. J. Philippe Rushton, a psychologist at the University of Northern Ontario, states that, relative to Whites and Asians, Blacks are distinguished by a lesser intelligence, greater amounts of violence and aggression, and increased amounts of sex hormones (Rushton, 1996). Michael Levin, a professor of philosophy at the City College of New York, places racial variation literature within a philosophical framework in his 1997 book Why Race Matters: Race Differences and What they Mean. Levin states that “Whites are on average better people than blacks” (p. 10). He believes that biological
deficits in the Black population manifest as limitations in intelligence, crime, and sexual activity.

Though Edward M. Miller’s academic background is not in the social sciences, he states that his knowledge of behavior genetics and attending literature includes evidence that Black poverty is primarily attributed to low intelligence (Miller, 1996). Miller, a research professor of economics and finance at the University of New Orleans, believes that it is the sophisticated reader familiar with scientific methods and analytical skills who can objectively review of his research on genetics and racial differences.

Richard Lynn, the director of the Ulster Institute for Social Research in Corraine, Northern Ireland, lends an evolutionary perspective to his cross-national studies. He concludes that Sub-Saharan Africans are less intelligent than Blacks in the United States (Lynn, 2002). He attributes the higher IQs of Black Americans to Caucasian genes and better living conditions. Lynn theorizes that natural selection is the reason that Sub-Saharan Africans evidence the least intelligence in worldwide comparisons. He believes that migration from Africa to Eurasia, over thousands of years, required the intelligence and ability to survive harsh climates. This is evidenced by the need at the time to hunt for food, build shelter, and make clothes and weapons. These abilities necessitated a higher intelligence, especially among Asians; however, enhanced levels of intelligence and ability were not required of Black populations living in more hospitable terrain (Lynn, 2002).

Sue and Sue (2003) discussed the difficulties that arise when addressing interracial intelligence literature. They surmised questions concerning the topic as both complex and emotional. The difficulty in clarifying this question is compounded by many factors. Besides the difficulty in defining “race,” there exist questionable assumptions regarding whether research on the intelligence of Whites can be generalized to other groups, whether middle-class and lower-class ethnic minorities grow up in similar environments to middle- and lower-class Whites, and whether test instruments are valid for both minority and White subjects. More important, we should recognize that the average values of different populations tell us nothing about any one individual. Heritability is a function of the population, not a trait. Ethnic groups all have individuals in the full range of intelligence, and to think of any racial group in terms of a single stereotype goes against all we know about the mechanics of heredity. (p. 55)

**Challenge to Educators**

Educational consumers have been repeatedly presented with tainted information under the guise of academic rigor. It is easier to discern the ridiculous theories that have been touted. More difficult to discern are the more subtle, but no less inflammatory, research and rhetoric that have been slickly packaged to assuage ethnic concerns. This traditional scientific discourse has indeed influenced the manner in which society presently views ethnic groups and their academic achievements. Though the passage of time appears to have qualitatively impacted the nature of stereotypical beliefs, biased views and behaviors against ethnic groups persist because traditional stereotypes continue to dictate the cognitions and perceptions of individuals in their everyday interactions with others. Ultimately, this engenders a large potential for bias in numerous settings (Bobo, 2000).

Dealing with human beings is an inexact science. It is the responsibility of today’s educators, regardless of their ethnic backgrounds, to choose how they will go about learning new or different information that is constructive to their interactions with a multicultural student body. This endeavor may require both a personal and professional inventory of attitudes and behaviors that encompass awareness, knowledge, and skill processes (Durodoye, 1998):

1. **Awareness.** It is essential that educators develop an awareness of their own cultural heritages and acknowledge how their cultural and ethnic biases may affect students and others from culturally diverse groups.

2. **Knowledge.** Educators must gain knowledge concerning the worldview of ethnic groups different from themselves. General cultural characteristics of individuals within this population should be viewed on a cultural continuum. One must remember that people who share a common ethnicity are not all the same.

3. **Skills.** Educators should review their curricula and methods and examine ethical issues as they relate to cross-cultural educational objectives. Working against the tenets of scientific racism in the educational setting may require advocacy skills on behalf of students. This might involve the promotion of systemic changes, as the core of many problems do not rest within the student, but with the outside environment.

Educators are challenged to stay mindful of the history of the science of race in the United States and beyond and its impact on students and others. By critically analyzing information, educators have the opportunity to make more informed judgments regarding the validity of racially based hypotheses. This leads to a stance of responsibility and accountability in the distribution of accurate data within and outside of one’s discipline. It is only then that educators can teach toward illumination, rather than miseducation.
References


