
Thinking Critically about Race and Genetics

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Setting the Context

The issue of how race and genetics should interrelate goes to the heart of an unfinished discussion about race and racism in both the United States and around the world. The category of race is still powerful and dangerous, especially in scientific work. Addressing this issue is all the more important given the fact that race is still frequently essentialized and treated as biologically real. This tendency continues even as social and natural scientists such as Troy Duster¹ and Charles Mills² largely agree that race is a social construction. Mills sees this racial construction as deeply rooted in the legal and constitutional orders of American society. Race is a modern category invented by white male scientists in the “era of modernity” and instantiated globally in the consciousness, social practices, and institutional interstices of Western European cultures, among countless others worldwide.³ Indeed, the pseudoscience of the period was highly informed by tales of difference brought back by explorers. These stories became part of the early “folk wisdom” the scientists of the day drew upon to develop racial hierarchies to explain the so-called inferiority of those with whom they came into contact. These peoples were ultimately conquered, colonized, enslaved, and drawn into European empires. The conquered people were human beings of color who were physically and culturally different from Europeans. Men such as Johann Blumenbach,⁴ Carolus Linneaus,⁵ and Louis Agassiz⁶ developed racial categories and ranked humanity according to phenotypical differences such as skin color, hair and body type, and facial features during the Enlightenment period. They advanced an idea of immutable differences that was deployed in popular literature as well as in scientific writings of the day.⁷

There is no escaping this history as we enter a period of simultaneously accepting the idea that race is a human invention and retrenchment on the issue of racial justice in the United States.⁸ Importantly, the current retreat from prioritizing racial justice occurs in the context of the continued deep institutionalization of racial practice and understandings in this country. The language of the day is “color-blindness,” meaning that the United States is now a color-blind society,⁹ but the societal reality does not support the assertion that the nation is now color-blind. For example, in the fifty-plus years since the *Brown v. Board of Education* Supreme Court decision that ruled segregated schools were “inherently unequal,” segregation in U.S. schools

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is as intense, or in some places more intense, than before the decision.¹⁰ Meanwhile, the U.S. poverty rate has climbed over the past four years, especially among African-Americans. According to the 2001 census, “poverty remained highest for blacks at 22.7 percent, up slightly from 22.5 percent in 2000.”¹¹ And the National Housing Alliance recently released a report indicating that the occurrence of housing discrimination has increased, documenting deeply rooted housing inequality along racial lines.¹²

Even as such indicators of continued racial inequality for African-Americans emerge, the mapping of the human genome confirms that there is only a minute genetic variation among human beings. We know that racial inequality is socially created and real. But we are left with this conundrum: how do we retain racial categories to track deep social inequalities without causing harm by entrenching inequality that maps along the traditional and suspect categorizations of race? Duster observes: “race as a biologically rooted idea is supposedly in the dustbin of history with no scientific utility, but it keeps raising its ugly head.”¹³ He rightly sounds

When representative spokespersons from the biological sciences say that there is no such thing as race, they mean correctly, that there are no discrete categories that come to a definitive beginning or end, there is nothing mutually exclusive about our current (or past) categories of race, and there is more genetic variation within categories of race than between.¹⁶

The challenge is to seriously address this complex interplay rather than simply encoding folk notions of race into medicine and scientific research. This task is daunting. Moreover, this race issue is not simply an American question, although it is, seemingly, an American obsession; the work of Mahmood Mamdani on the Rwandan genocide makes this quite clear.¹⁷ The impact of colonialism and imperialism has generated deep racializations and deployed the ideology of white supremacy globally. The social construction of the Tutsis, for example, as racially superior, ties into the colonial hierarchy built by Europeans into Rwandan society. Europeans asserted that Tutsis were superior

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the alarm over a series of articles over the last decade that look to genetics to demark population groups that coincide with lay renditions of ethnic and racial phenotypes (that is, skin color, hair type, and other characteristics that have been used to define human beings as distinct races).¹⁴

The stakes have risen in the discussion of race and science because of success in mapping the human genome. New issues around the use of racial categorization have come to the fore. Thus, the purpose of this paper is to problematize race and genetics, focusing on African-Americans. I contend that the relationship of race and genetics should be examined critically and thought about in the context of using racial categories that are socially created but too often are treated as biological “givens.” This tendency must be resisted and vigorously contested. The myth of “races” as biologically real, expressed in racial essentialism, must be addressed head on, especially as we see routinization of the racial and ethnic categories set forth in Office of Management and Budget (OMB) Directive 15: Indian/Alaskan Native, African-American/Black, Asian/Pacific Islander, and White.¹⁵ Turning to Duster again, he opines,

because they were “lighter,” “taller and leaner” – closer physically to the Europeans. The ideology of white supremacy created a racial hierarchy of “superior” Tutsis and “inferior” Hutus. This generated long-standing resentments in the context of a complex political history. While the tragic consequences of genocide by the Hutus against the Tutsis are now well known, this modern world inheritance of white supremacy will not die easily. Even among ethnically similar peoples, the idea that one group is superior to the other can become societally rooted.

Given the historical and contemporary context, I approach the “new genetics” uneasily. How do we use “race” in the context of new information, for example, about so-called designer drugs that work “better” on some “races” than others? This is surely treacherous ground. I have no illusions that scientific racism is dead. I am also quite clear that this racism has had devastating psychological and social consequences for the peoples of the world – especially people of the African diaspora, and African-Americans in particular. Indeed, for over four hundred years in American society, the deep and profound racialized othering of those of African descent has been a reality. It is constitutive of the American social order. But the idea of almost ex-

clusively viewing African-Americans as the racialized other must be seriously interrogated. This has become an especially critical set of questions in view of haplotype mapping.

The New Genetic Landscape and the Old Language of Race

Mapping the human genome allows us to measure differences at the molecular level. This occurs by identifying individual sites of genomic variation known as single nucleotide polymorphisms (SNPs).¹⁸ These variations can indicate susceptibility to certain diseases as well as patterns of drug metabolism and response. As Laura Helmuth has pointed out, SNPs travel across generations in blocks as large as 10,000-50,000 nucleotide bases each.¹⁹ These blocks are called haplotypes. Haplotype mapping is a classification system that shows the haplotype blocks and the SNPs that define them. Genetic researchers then do not have to go through the entire human genome to identify SNPs associated with particular conditions. Large pieces of genetic information can be organized in a usable form through haplotype mapping, significantly advancing the process of identifying polymorphisms that correlate with particular diseases, as well as pharmacogenomic work devising medicines geared to individual genotypes.²⁰

However, there is a clear danger that in this process, new biological categories may be linked to ancestral descent populations and existing socially constructed categories of race and ethnicity. Haplotype mapping thus presents the temptation to treat populations as genetically distinct, biologically defined racial groups. Unfortunately this is already happening. As noted in the work of Joseph Graves, racialized ideas of biology are returning.²¹ This revival represents slippage rather than a new understanding of the complex interplay of biology and the social. No doubt this slippage is to some extent facilitated by the fact that some health differences coincide with commonly used racial/ethnic categories.

This slippage is evident in pharmacogenomics. Pharmaceutical companies and other private corporations are now in the business of pursuing profit using genetic research. There is a tendency to use existing categories of race in pharmacogenomics; witness the attention given to what is called “a large excess of single-band phenotypes for blacks at D17S79.”²² This focus on frequency of alleles is an attempt to measure, as Duster notes, “the frequency of genetic variation at a particular spot in the DNA in each population.”²³ This sug-

gests what is at stake: targeted drugs that are to be marketed to specific groups for profit. This mixture of pursuit of profit and science never bodes well for African-Americans.²⁴ We do know that the profit potential is enormous. Kevin Boon asserts, “New technology and resources resulting from the Human Genome Project will have a major impact on industry worldwide. Some visionaries predict that these new technologies and DNA-based products will result in sales exceeding \$45 billion by the year 2009.”²⁵ Duster goes on to articu-

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late what is at issue: “Pharmaceutical companies have begun to develop and pharmacogenomics has begun to develop around the delivery of pharmaceuticals to population specific groups. The new pharmacogenomics asserts unequivocally that there are racial differences in the way different races respond to certain drugs.”²⁶ This pharmacogenomic use of the idea that races respond differently to certain drugs is especially troublesome in view of the reversion to biology to explain African-American inequality.

Recent Academic Discourses and the New “Old” Eugenics

Just over a decade ago, in 1994, the book, *The Bell Curve*, was released.²⁷ Although the book was castigated as bad research by scientists in the National Academy of Sciences and other institutions, its authors, Richard Herrnstein and Charles Murray, seemed most concerned with shaping public policy according to their “finding” that some groups were intellectually inferior to other groups. Murray, in an earlier work called *Losing Ground*, had proposed the dismantling of welfare for America’s poorest families.²⁸ That book, like *The Bell Curve*, paid close attention to African-Americans. *The Bell Curve* represents late 20th century thinking about the genetic inferiority of some groups. It shows how persistent the idea of the genetic inferiority of African-Americans, poor people, and women is in this country. This persistence makes the uninterrogated use of race in the new genetics potentially treacherous.

The Bell Curve offered scientific racism, reminding us how deeply rooted is the notion of biological inferiority that treats socially constructed races as biologically real. The book was a thinly veiled assault on the social

safety net that benefited poor women and the social policies that opened doors to African-Americans in previously closed venues such as white elite universities. For African-Americans it reaffirmed the linchpin of racial othering: black stupidity and white genetic superiority (although Herrnstein and Murray conceded that white superiority was mediated by class). The authors' policy recommendations included stopping spending for welfare, job programs, Head Start, and so on, while eliminating race-based affirmative action. They also revived old eugenics arguments by saying that some fertility should not be supported. And if young unmarried women do get pregnant, no welfare or other support should be provided to them.

Sadly, the belief that race is genetically determined and whites are superior is not dead. A recent article by Michael Rienzi supports the biological idea of race.²⁹ Note that the name "Michael Rienzi" is not real; his article, "Race is a Myth? The Left Distorts Science for Political Purposes," states that "Michael Rienzi is the pseudonym of a biological scientist living in the Northeast." Unwilling to reveal his identity, Rienzi offers a diatribe against what he calls the "social constructionist lie." The existence of "Rienzi" and his ideas represent the danger posed by those who treat race as biologically real using socially constructed categories, advancing the ideology of white supremacy.

Rienzi's article viciously critiques the PBS video, "Race: The Power of an Illusion," which takes a social constructionist view of race. He asserts that "a genetic test that does reveal ancestry and genetic relatedness (and therefore race) is readily available to any high school class, and indeed is accessible on the web." He tells us that the test "determines the proportion of ancestry that is Indo-European (Caucasian), African (sub-Saharan African; *i.e.*, Negro), Native American (Amerindian), or East Asian (Mongoloid/Oriental/Pacific Islander)." Of this test, he says, "It's produced by a company that specializes in identifying criminal suspects for law enforcement through DNA samples."³⁰ Rienzi thus argues against the idea of race as a social construction:

Against this view, there are first of all the obvious physical differences between human population groups that everyone recognizes. There is also genetic evidence that can be used independently of traditional methods to classify different human populations into racial groups that are virtually identical to those based on the allegedly "superficial" traits studied by traditional physical anthropology.³¹

The danger of this polemic articulated by an anonymous biological scientist from the Northeastern United States is too chilling to contemplate. This scientific racism exemplifies the all too real danger of the reemergence of racialized biology. Indeed, Professor Glayde Whitney writes in the same issue: "We live in confused times. As science increasingly proves the fallacy of the egalitarian myth, politicians and scientists who know better keep feeding the public absurd and wrong banalities to the effect that races do not exist (see cover story)."³²

We can be sure that racist science is not dead. It connects to a longer history of race, biology, and genetics. Inez Reid's historical discussion of biological racism and Western discourses on intelligence points to early 20th century arguments about black genetic inferiority.³³ For example, she notes that in 1906 a Dr. Bean argued:

...due to a deficiency of gray matter and connecting fibers in the negro brain, especially in the frontal lobes, a deficiency that is hereditary and can be altered only in intermarriage, we are forced to conclude that it is useless to try to elevate the negro by education or otherwise, except in the direction of his natural endowments.³⁴

Of course, by the 1960s Arthur Jensen,³⁵ Richard Herrnstein,³⁶ and William Shockley³⁷ were making full-fledged biological arguments about so-called "black intellectual inferiority."

Resistances

Given asserted links between race and genetics, it is essential to resist slipping back into racial essentialism. Three avenues of resistance are key. We need to invert the pernicious practice of othering by insisting on defining the lived experience of African-Americans through those who live that experience. We need to pursue accountability and create training that includes a new curriculum involving interdisciplinarity on the issues of race and genetics. Finally, we need to create dialogue between the community and scientists.

A. Inversion of Othering

The issues surrounding genetic mapping and race beg for a public conversation beyond the scientific community. Given the dismal history of eugenics, forced sterilization of African-American women,³⁸ and the Tuskegee syphilis experiment,³⁹ 21st century efforts to utilize science for "the social good" should not go unscrutinized. Other than attention given to using DNA to trace possible African ancestry, the black community in the United States has yet to fully weigh in on

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the consequences of the resurgence of biological racial thinking. Given persistent racial inequality in education, in the economy, and in the growing number of incarcerated men and women of color, the time for the conversation is now.

African-American communities need to give careful consideration to the emerging dynamics of race and the new genetics. They need to oppose and invert the practice of othering – that is, treating African-Americans as the “other” whose place in society and whose reality is defined by those who are not African-American. Instead, African-American communities facing issues of genetics and race need to assert that only those who live the experience of being African-American can define it. Community-based insight into the relationship of race and genetics is needed.

Scientists have decried the bad science of *The Bell Curve* and distortions offered by Reinzi and Whitney. Indeed, the reaction to *The Bell Curve* was immediate. Many of the voices were African-American scholars, articulating critique in an old tradition of speaking out and struggling against racist othering. Robert Newby of Central Michigan University edited a special issue of the journal *American Behavioral Scientist* on *The Bell Curve* drawing upon the insights of a number of black scholars.⁴⁰ Nonetheless, the everyday community of African-Americans was largely left out of this response. This is unfortunate; critique from the bottom up is important.

African-Americans’ refusal to be defined from without, despite highly determinative structural inequalities and the power of an enterprise such as science, may be the key to making progress on the complicated issues surrounding race and genetics. Yet succeeding in this resistance is challenging. Science gives little credence to lay definitions of community and group self-definition. However, advancing the agency of groups to self-determine is key. Conceiving of black people – men and women – as historical and material subjects⁴¹ who are best positioned to define the realities they face is essential to opening a fuller discussion of the use of race in scientific research.

It is important, too, for the scientific community to respond. For example, in 2004 the Nature Publishing Group articulated the following position in *Nature Reviews*, an important counterweight to the distorted claims of individuals such as “Reizi”:

The population definitions that we commonly use today, and to which scientists often attribute genetic findings, are the same ones that have been the primary basis for establishing and maintaining socio-economic and other disparities for centuries. The ways in which we define populations can have significant implications for how we interpret the scientific meaning of genetic findings. Investment in genomic infrastructure such as the international HapMap Project and prospective cohorts will soon generate large amounts of data that will allow complex quantitative analyses of human variation across the genome. However, the sophistication of these analyses might be blunted if scientists continue to rely without criticisms, on pre-existing, selective and historically encumbered population definitions.⁴²

By theorizing both from the bottom up (through the everyday lives of African-American women and men), and from the top down by analyzing social structure through the eyes of scientists,⁴³ we can identify some of the complexities that characterize the interaction of biology and social construction.

B. Accountability and Training

The issue of accountability is key to this critical discussion of race and genetics. We need accountability at multiple levels, including in law, journals, and society. But accountability within the scientific community is critical. Scientific activism on the issues of racism, race, and genetics is urgently needed. The emergence of new knowledge from the Human Genome Project highlights the responsibility necessary to fight against social inequalities for population groups that have been racialized, with dire consequences. There is no way to resolve questions about the relationship of race and genetics without confronting social injustice.

Training for scientists, physicians, public health practitioners, etc. and curriculum should be revised as well. This revision should be more than just a course in the ethics of science – a full curriculum on the meaning and history of race should be integrated into training, preferably involving a series of courses. We need to incorporate into the curriculum more complicated understandings of race and racism, and their implications for medical and scientific practice. We should consider a series of curriculum transformation workshops for science and medical faculty, as well as public

health practitioners and community health providers. Summer institutes could help professors think critically about methodology, law, and the burning issues surrounding race and the new genetics.

Finally, we need to advance interdisciplinarity in scholarship and fertilization across fields. We need to challenge traditional disdain for the so-called “soft” social sciences even as they challenge folk notions and stereotypes about race. The so-called “hard” sciences need to share in these social science discussions. The creation of new research communities combining the work of multiple fields is key to moving forward.

C. Community and Scientific Dialogue

In closing, the groups most affected should have a voice. This means creating spaces for community and scientific dialogues. Such dialogue should address the deep and thorny issue of who controls science. We need to discuss the hard question of who is being served by the new genetic breakthroughs. Who benefits and who pays the heavy cost for advances and well as for scientific error? Issues of class and access, as well as commodification and the search for profit should all be key concerns. To engage in a critical discussion of race and genetics, we need to bear in mind a point made in a piece featured in the *Black Scholar* and published in a collection by the Science for the People Collective:

Uses of scientific knowledge cannot be separated from society in which those uses occur. The myth of pure science, of science as a detached, ivory tower, has been exposed. Science is enmeshed in the prevailing social ideologies. The choice of what subjects to investigate, which experiments to undertake, what methods to employ, which results to emphasize as important, to whom to report results, how to use result, etc. all these and countless other decisions made by scientific investigators are colored by ideology.⁴⁴

So we must keep this critical question on the table: Science for whom? A great deal of care must be taken to ensure that socially constructed categories of race and ethnicity are deployed carefully and soundly. We must be diligent in tracking how sociopolitical categories become biologized. This biologizing can happen subtly and seamlessly. It is especially possible in periods of social retrenchment when some seek to lay blame for social inequalities. Certainly community voices and actions should be given respect and deep consideration in the dialogue that needs to occur, given the complicated issues surrounding race and genetics. Those most hurt by racial othering – in the past and now – should be

front and center in the conversations about haplotype mapping and the new genetics of the 21st century.

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