

INTRODUCTION

HOW SCIENCE EMBRACED THE RACIALIZATION OF HUMAN POPULATIONS

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This volume of essays grew out of two projects of the Council for Responsible Genetics (CRG) that examined the persistence of the concept of human races within science and the impacts such a concept has had on disparities among people of different geographical ancestries. Both projects were funded by the Ford Foundation. The first project commenced with a series of research papers addressing the effects of expanded forensic DNA databases on “racial” disparities in the criminal justice system and culminated in a national conference held at New York University on June 19–20, 2008, that brought together academics and social justice advocates to discuss “racialized” forensic DNA databases and explore policy solutions.

The second project explored the impacts of modern genetics on reinscribing and objectifying the concept of “race” in science and society. A series of papers were commissioned and subsequent forums were held at the California Endowment’s Oakland Conference Center at Oakland on August 13, 2009, and at the American Museum of Natural History in New York on August 20, 2009. The CRG assembled a multidisciplinary group of scholars and community activists to contribute papers that discussed the history of the concept of “race” and how the new field of genomics informs scientific, medical, and public understanding of “race” in new areas like forensic DNA, racialized medicine, and intelligence testing.

Other papers were contributed to this volume after the conferences were held. It has been the intention of the Council for Responsible Genetics and the editors of this volume to draw attention to myths about “race” and to bring public awareness to the impacts such myths and scientific misunderstandings can have in the pursuit of social equality for all people regardless of the color of their skin, their ethnic identify, or the geographical origin and phenotype of their ancestry.



Historically, the concept of “race” has been steeped in paradox, embraced by ideology, adopted and rejected by science, but nevertheless remains an indisputable part of public discourse. The term “race” is merely a shadow of what it once represented in science. Simply put, race is a scientific myth and a social reality.¹

Rooted in the science of zoology, the concept of “race” was initially introduced as a taxonomic category for classifying the organizational structure of animal species. The organization of living things was classified into broad categories of kingdom, phylum, class, order, family, genus, species, where kingdom is the broadest category. The term “race” in zoology is applied in formal animal taxonomy to variations below the species level. Races are interbreeding groups of animals, all of whom are genetically distinct from the members of other such groups of the same species. However, these groups (races) are geographically isolated from one another, so there are barriers to genetic exchange between groups. In the eighteenth-century scientists began applying the term “race” to human populations.

In *The Descent of Man*, Charles Darwin noted the divergence among naturalists in deciding on the correct number of human races: “Man has been studied more carefully than any other animal, and yet there is the greatest possible diversity amongst capable judges whether he should be classed as a single species or race, or as two (Virey), as three (Jacquinot), as four (Kant), five (Blumenbach), six (Buffon), seven (Hunter), eight (Agassiz), eleven (Pickering), fifteen (Bory St. Vincent), sixteen (Desmoulins), twenty-two (Morton), sixty (Crawfurd), or as sixty-three, according to Burke.”² Yet Darwin, like many scientists of his time, was not ready to discard the idea of race as having scientific legitimacy. He wrote, “this diversity

of judgment does not prove that the races ought not to be ranked as species, but it shews that they graduate into each other, and that it is hardly possible to discover clear distinctive characters between them.”³

The idea that there were fixed, unalterable human morphological or genetic qualities of certain population groups, transmitted from generation to generation, was in disfavor by most scientists in the late nineteenth century. Even the German physical anthropologist Johann Friedrich Blumenbach, who is often credited because of his book *On the Natural Variety of Mankind* as one of the progenitors of racializing the human population, acknowledged that no sharp distinction can be made between people.⁴ He wrote, “No variety of mankind exists, whether of colour, countenance, or stature, etc., so singular as not to be connected with others, of the same kind by such an imperceptible transition that it is very clear that they are all related, or only differ from each other in degree.”⁵

In this volume Michael Yudell provides an historical account of how “race” was embraced by science for over three centuries (see chapter 1). He shows us how a new generation of scientists in the early twentieth century began to apply modern genetics to an understanding of racial classification.

While the concept of “race” became redefined through population genetics, some scientists were preparing to exorcise it from science. In 1942 Ashley Montagu published *Man’s Most Dangerous Myth: The Fallacy of Race*.⁶ Expressing what he asserted was the consensus among scientists, Montagu wrote: “Most authorities of the present entertain no doubts as to the meaninglessness of the older anthropological conception of ‘race.’ They do not consider that any of the existing concepts of ‘race’ correspond to any reality whatever.”⁷

Nearly sixty years later, Michael Omi reaffirmed the consensus: “Biologists, geneticists, and physical anthropologists among others, long ago reached a common understanding that race is not a ‘scientific’ concept rooted in discernable biological differences.”⁸ By the end of the twentieth century, race had been defined in the Unabridged Random House Dictionary as “an arbitrary classification of modern humans, sometimes, esp. formerly, based on any or a combination of various physical characteristics, as skin color, facial form, or eye shape.”⁹ Thus, “race” is a social construction. This is reflected in the words of Lisa Gannett, “The races biologists once claimed to have discovered in nature were, in actuality, the illegitimate offspring of an invented classification scheme they had

imposed on nature.”¹⁰ In view of the consensus within science on “race,” Keita and Kittles ask, “Why do the concepts of biological race and racial categories continue to exist and be utilized?”¹¹ This question leads us to a number of paradoxical elements, confusions, and public myths associated with how race continues to be used in science and the role it plays in social policy and popular culture.

It is not unusual for people to sort one another into group categories by external characteristics including ethnicity, language, skin color, and morphological features. These popular sorting mechanisms neglect genetic similarities as well as many nonobservable genetic differences. In the early 1970s scientists began studying how different population groups varied genetically. It became evident in the early 1970s, through a path-breaking study by Richard Lewontin, that there was more genetic diversity within a population group (e.g., West Africans) than between two groups (West Africans and Europeans).¹² The genes for blood types do not divide up by geographical region, and genetic risks (disease polymorphisms) do not sort out according to the nineteenth-century meaning of race.¹³ Keita and Kittles note, “‘Race’ is a legitimate taxonomic concept for chimpanzees but does not apply to humans (at this time).”¹⁴

Another source of paradox can be found in how “race” is currently used in the social sciences. In many areas of social science research, “race” is a variable. These include studies in income disparity, disease incidence, intelligence, and crime statistics to name a few. But since there are no biological or genetic markers for “race,” it is operationally defined by self-identification. People sort themselves out as part of a survey according to which “race” they self-identify. But how a person self-identifies with a socially constructed idea of “race” depends on social and cultural norms. The same person may self-identify with one “race” in one country and another “race” in another country. Or a person may change his or her self-identification when the options before them have changed.

It must be understood and is rarely mentioned that research based on self-identification as the criteria for “race” correlates the independent variable (those who self-identify) with the dependent variable (e.g., bias in finding rental housing, poverty, illness). The social construction of “race” and its operational definition as “self-identity” means that resulting outcomes of the research will also be built on this social construction and not grounded in objective biological and social realities. And when

the social definitions change, the significance of the research outcome will as well. Research results that use “race” defined by “self-identification” should be interpreted as “those who self-identify as race X compared to those who self-identify as race Y are more than twice as likely to be discriminated in housing.”

For the 2010 United States Census, there were fourteen main categories of race offered in the questionnaire including a category of “some other race.” Under “Other Asian” respondents are prompted to choose from among Laotian, Thai, Pakistani, Cambodian, or others. Someone of mixed race will undoubtedly feel inclined to choose from among the given categories.

This brings us into a second paradox. The term race as used in most contemporary societies is defined by certain discrete categories, currently fourteen “races” in the United States Census. Any physical trait or combination of traits that might be used in making such a classification or self-identification are continuous variables, representing centuries of genetic exchange (admixture) among populations. From a logical and mathematical standpoint, continuous variables cannot be mapped onto discrete variables. It makes as much nonsense to say that a light-skinned individual who has African ancestry is classified as “Black, African American, or Negro” as it would be to say that a dark-skinned person with any Northern European Ancestry is “White.” On this point Stephen J. Gould wrote, “You cannot map a continuous distribution if all specimens must first be allocated to discrete subdivisions.”¹⁵

So if it is scientifically unsound to conflate all of human genetic diversity into a few distinct racial types, why is it still done? One answer is that for some people in some contexts this sorting process serves some function, whether just or unjust. In the nineteenth century racial types were idealizations or constructs of a population group. Ingold writes: “Every race was thought to represent a type in the strict sense; that is to say, for each race there was supposed to correspond an essential form of the human being—Caucasoid, Mongoloid, Negro, and so on—to which every living individual represented a more or less close approximation.”¹⁶ People of mixed heritage, strictly speaking, didn’t fit into the classification scheme. Today, multiracial individuals simply choose to associate themselves with a particular “racial group identity,” from among choices that are imposed upon them, even if they are a poor approximation to the ideal type.

Of what value can racial categories, which are recognized as unscientific, arbitrary, socially constructed ideal types, have? If the dominant culture sorts and discriminates against people associated with one of these “ideal types,” then this is of importance to social scientists and policy makers. Science can play a role in seeking to understand why this sorting and the consequences that derive from it takes place. But drawing generalizable conclusions in psychology, education, or medicine from these ideal types is baseless. The concept of race is a vestigial cultural artifact that persists in people’s minds and public policies. The American Association of Physical Anthropology issued a consensus statement on race in 1996 that dismisses the idea of an average “racial type”:

Generally, the traits used to characterize a population are either independently inherited or show only varying degrees of association with one another within each population. Therefore the combination of these traits in an individual very commonly deviates from the average combination in the population. This fact renders untenable the idea of discrete races made up chiefly of typical representatives. . . . On every continent there are diverse populations that differ in language, economy and culture. There is no national, religious, linguistic or cultural group or economic class that constitutes a race.¹⁷

Given the preponderance of the science disavowing the classification of humans into races, how has this influenced scientific textbooks. Ann Morning studied how the concept of race was treated in biology textbooks over a period of fifty years, from 1952 to 2002. The results of her investigation were reported in the *American Journal of Sociology*. Morning found that “race appears to be returning, not disappearing, as a topic of biological instruction” and that “the textbooks’ conceptual framing of race has changed markedly over the period from a model based on phenotype to one grounded on genotype.”¹⁸

The reinscription of race into science is in large measure a consequence of the use of genetics in ascertaining the ancestry of individuals. This involves the development of genetic markers called Ancestry Informative Markers (AIMs): “An individual’s African ancestry is inferred from genetic similarity along a few dozen genetic markers . . . derived from a few dozen cell lines from Central-West Africa, carefully chosen

to be maximally different from a comparable sample of East Asians and Northern Europeans.”¹⁹ Jonathan Marks observes, “While this is not race in any previously familiar sense of the term it is readily conflated with such notions, whether ingeniously or not.”²⁰

The essays in this volume explore both historical and contemporary views of race and genetics. After the introduction, which discusses the vestigial remains of race in science, its undeniable socially constructed reality, and the paradoxes it leaves us, the book is divided into six sections with two essays per section. In part 1, “Science and Race,” Michael Yudell provides a short history of the race concept covering the eighteenth to the twentieth century. Yudell shows us how science, ideology, and policy become intertwined over the concept of race. Robert Pollack provides a geneticist’s view of the idea of race in the context of natural selection and human evolution.

In the part titled “Forensic DNA Databases, Race, and the Criminal Justice System” Michael Risher discusses US DNA databanks that contain the forensic DNA profiles of individuals of interest to local, state, and federal criminal justice systems. He examines the problem of racial disparities resulting from policies on obtaining DNA profiles. Helen Wallace contributes a parallel analysis of racial disparities in forensic DNA databanks in the United Kingdom, where children ten years old and over may have their DNA placed on a national database.

In part 3, “Ancestry Testing,” Troy Duster and Duana Fullwiley each contribute essays that examine the assumptions behind the current methods of tracing the percentage ancestry of individuals to a few major regions of the world. The industry that has developed around “finding your ancestry” has reinscribed race into a scientific vernacular.

Jonathan Kahn and Joseph L. Graves each contribute essays in part 4, “Racialized Medicine,” where they discuss the assumptions behind the decision by the US Food and Drug Administration to approve a cardiac drug (BiDil) specifically for people of African American ancestry. Kahn discusses how BiDil was developed and approved for use by a single “racial” group. Graves examines the fallacies of racialized medicine and how an evolutionary approach to medicine can contribute toward the elimination of health disparities.

In part 5, “Intelligence and Race,” Pilar Ossorio critically examines hereditarian theories of intelligence and discusses the implications of the

view that IQ testing by “race” tells us anything about how innate intelligence is distributed among population groups. Sternberg, Grigorenko, Kidd, and Stemler provide a comprehensive review and analysis of the scientific literature on intelligence, race, and genetics. They explore and evaluate claims made about the alleged relationships between race and intelligence through the lens of genetics.

Finally, part 6, “Contemporary Culture, Race, and Genetics” contains contributions by Patricia Williams on cultural views about race and by Osagie K. Obasogie, who introduces the idea of racial impact assessments. Williams explores how the concept of race has been incorporated into personal narratives of identity. Obasogie examines the consequences of an intractable racialization of society and its impact on minority populations. His concept of racial impact assessments seeks to address the disparities that arise from socially constructed ideas of race. In the conclusion, Kathleen Sloan discusses the educational responsibility of science to advance social justice in a world where race retains a powerful social meaning, albeit one that varies significantly across cultures.

NOTES

1. In answering the question of why “race” retains such force in society, Adolph Reed writes, “The short answer is that race is a social reality.” Adolph Reed, “Making Sense of Race, I: The Ideology of Race, the Biology of Human Variation, and the Problem of Medical and Public Health Research,” *Journal of Race and Policy* 1 (2005):11–42, at 13.
2. Charles Darwin, *The Descent of Man* (New York: The Modern Library), 536. John Joseph Virey (1774–1847); Honoré Jacquinot (1815–1887); Immanuel Kant (1724–1804); Johann Friedrich Blumenbach (1752–1840); Georges-Louis Leclerc, *Compte de Buffon* (1707–1788); John Hunter (1728–1793); Louis Agassiz (1807–1873); Charles Pickering (1805–1878); Jean Baptiste Bory de Saint Vincent (1778–1846); Charles Robert Alexandre des Moulins (1798–1875); Samuel George Morton (1799–1859); John Crawfurd (1783–1868); Edmund Burke (1729–1797).
3. Darwin, *The Descent of Man*, 536.
4. Johann F. Blumenbach, *On the Variety of Mankind*, trans. T. Bendyshe (London: Anthropological Society, 1865).
5. Ashley Montagu, *Man's Most Dangerous Myth: The Fallacy of Race* (New York: World Publishing Co., 1964), 41. Originally published in 1942 by Columbia University Press.
6. *Ibid.*
7. *Ibid.*, 130.

8. Michale Omi, "The Changing Meaning of Race," in *America Becoming: Racial Trends and Their Consequences*, ed. Neil J. Smelser, William J. Wilson, and Faith Mitchell (Washington, DC: National Academy Press, 2001), 243
9. Random House Unabridged Dictionary, 1993.
10. Lisa Gannett, "The Biological Reification of Race," *British Journal of the Philosophy of Science* 55 (2004): 323–75, at 323.
11. S. O. Y. Keita and Rick A. Kittles, "The Persistence of Racial Thinking and the Myth of Racial Divergence," *American Anthropologist* 99 (1997): 534–44, at 511.
12. Richard C. Lewontin, "The Apportionment of Human Diversity," *Evolutionary Biology* 6 (1972): 381–98.
13. Jonathan Marks, "Race: Past, Present, and Future," in *Revisiting Race in a Genomic Age*, ed. Barbara A. Koenig, Sandra Soo-Jin Lee, and Sara S. Richardson (New Brunswick, NJ: Rutgers University Press, 2008), 21–38, at 34
14. S. O. Y. Keita, R. A. Kittles, C. D. M. Royal et al, "Conceptualizing Human Variation," *Nature Genetics* 36 (2004): S17–S20, at S19.
15. Stephen J. Gould, "Why We Should Never Name Race," in *Ever Since Darwin* (New York: Norton, 1977), 235.
16. Tim Ingold, "When Biology Goes Underground: Genes and the Spectre of Race," *Genomics, Society and Policy* 4 (2008): 23–37, at 25.
17. American Association of Physical Anthropology, "AAPA Statement on Biological Aspects of Race," *American Journal of Anthropology* 101 (1996): 569–70, at 570.
18. Ann Morning, "Reconstructing Race in Science and Society: Biology Textbooks, 1952–2002," *American Journal of Sociology* 114 (2008): S100–S137, at S119.
19. Marks, "Race," 25.
20. Ibid.