

## **A SHORT HISTORY OF THE RACE CONCEPT**

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At the dawn of the 21<sup>st</sup> century, the idea of race—the belief that the peoples of the world can be organized into biologically distinctive groups, each with their own physical, social, and intellectual characteristics—is understood by most natural and social scientists to be an unsound concept. The way scientists think about race today, after all, is different than it was in the wake of the Civil Rights Movement when some promoted black genetic inferiority as an argument against egalitarian social and economic policy, and certainly different than one or two centuries ago as scientific justifications for slavery and later Jim Crow were articulated. In other words, race, its scientific meaning seemingly drawn from the visual and genetic cues of human diversity, is an idea with a measurable past, identifiable present, and uncertain future. These changes are influenced by a range of variables including geography, politics, culture, science, and economics.

Today, despite the growing consensus among scientists that race is not, in fact, a useful classificatory tool,<sup>1</sup> an understanding of human difference and diversity remains a hallmark of contemporary scientific practice, and thus presents a seeming contradiction—how can one study human difference without talking about race? On the one hand, beginning in the 1930s, advances in population genetics and evolutionary biology led many to conclude that the race concept was not a particularly useful or accurate marker of biological difference. By the 1970s, many prominent biologists, including the geneticists Richard Lewontin and L. Luca Cavalli-Sforza, came to see the race concept as a deeply flawed way to organize human genetic diversity that is inseparable from the social prejudices about human difference that spawned the concept in the 18<sup>th</sup> century and have accompanied its meaning since.<sup>2</sup> Historians and social scientists believe that race is socially constructed, meaning that the biological meaning of race has been constrained by the social context in which racial research has taken place.

On the other hand, because studying genetic differences can improve our understanding of human evolution, disease, and development, the relationship between genetics and human diversity remains an ongoing area of scientific inquiry. The challenge has been to develop a new scientific terminology and methodology that finds meaning in the study of human difference without recapitulating outmoded and racist notions often associated with the concept of race itself. Some scientists have developed novel ways to measure difference between various human populations, including using ancestry, ethnicity, and population as replacements or surrogates for race. Others, however, remain steadfast in their belief that technological and methodological improvements now allow an examination of racial difference with increasing precision that is disconnected from any social prejudices.

This briefing paper will describe the role that scientific thought has played, from the late 18<sup>th</sup> through the 20<sup>th</sup> century, in developing a language to measure the meaning of human difference in the form of race, and will also describe how over the course of the 20<sup>th</sup> century, most scientists came to reject this concept. Finally, this paper concludes with a brief examination of the current state of racial thinking in biology.

## Pre-20<sup>th</sup> Century Conceptions of Race

Ever since Thomas Jefferson wrote in the Declaration of Independence “that all men are created equal,” America has struggled with the chasm between this Jeffersonian ideal and the realities of the American experience. Jefferson himself was the author of some of America’s earliest ideas about race and science. In 1787, little more than a decade after he had penned the Declaration, Jefferson suggested in his work on the natural history of Virginia, *Notes on the State of Virginia*, that the difference between the races “is fixed in nature,” and hypothesized that blacks were “originally a distinct race.”<sup>3</sup> The contradiction between the Declaration and *Notes* may be understood, however, by Jefferson’s view of humanity itself. If blacks were of a separate creation, and set apart from the definition of “all men,” then the equality set out in the Declaration did not apply to all.

Notwithstanding Jefferson’s prominent voice on this issue (notably filled with contradictions<sup>4</sup>), Americans, and before them, their European counterparts had long considered the nature of human difference. Historian Frank Snowden, looking at black-white contact before the sixth century A.D. found that although there is an “association of blackness with ill omens, demons, the devil, and sin, there is in the extant record no stereotyped image of Ethiopians as the personification of demons or the devil.”<sup>5</sup> In ancient Greece and Rome “the major divisions between people were more clearly understood as being between the civic and the barbarous,” between the political citizen and those outside of the *polis*, and not between bloodlines or skin color.<sup>6</sup> Most scholars now accept the viewpoint that in the ancient world “no concept truly equivalent to that of ‘race’ can be detected in the thought of the Greeks, Romans, and early Christians.”<sup>7</sup> Rooting human variation in blood or in kinship was a relatively new way to categorize humans. The idea gained strength towards the end of the Middle Ages as anti-Jewish feelings, which were rooted in an antagonism towards Jewish religious beliefs, began to evolve into anti-Semitism. These blood kinship beliefs rationalized anti-Jewish hatred instead as the hatred of a people. For example, Marranos, Spanish Jews who had been baptized, were considered, by virtue of their ancestry, a threat to Christendom because they could not prove purity of blood to the Inquisition.<sup>8</sup>

Beginning in the eighteenth century, at the height of the Age of Enlightenment in Europe, these ideas were applied to explaining the diversity of humankind, driven in part by the experiences with new peoples during colonial exploration, the need to rationalize the inferiority of certain peoples as slavery took hold in European colonies, and the development of a new science to assess and explain diversity in *all* species. While the term race existed before the 18<sup>th</sup> century, mostly to describe domesticated animals, it was introduced into the sciences by the French naturalist Louis LeClerc, Comte de Buffon in 1749. Buffon saw clearly demarcated distinctions between the human races that were caused by varying climates. Buffon’s climatological theory of difference was infused with notions of European superiority. To Buffon, the natural state of humanity was derived from the European, a people he believed “produced the most handsome and beautiful men” and represented the “genuine color of mankind.”

The Swedish botanist and naturalist Carolus Linnaeus also made lasting contributions to the race concept at this time. Linnaeus's "natural system," which became the basis for the classification of all species, divided humanity into four groups: *Americanus*, *Asiaticus*, *Africanus*, and *Europeaeus*. To these groups he ascribed typological, or physical and behavioral characteristics. *Americanus* were "reddish, choleric, and erect; hair black... wide nostrils... obstinate, merry, free... regulated by customs." *Asiaticus* were "melancholy, stiff; hair black, dark eyes... severe, haughty, avaricious... ruled by opinions." *Africanus* were "black, phlegmatic... hair black, frizzled... nose flat; lips tumid; women without shame, they lactate profusely; crafty, indolent, negligent... governed by caprice." Finally, *Europeaeus* were "white, sanguine, muscular... eyes blue, gentle... inventive... governed by laws."<sup>9</sup> Towards the end of the 18<sup>th</sup> century, German scientist Johann Blumenbach constructed a racial classification that built upon Linnaeus's work and proposed five racial types: Caucasian, Mongolian, Ethiopian, American, and Malay. Blumenbach's addition posited the Caucasian as the ideal, or mean race, and on either side of that mean were racial extremes; the Mongolian and Ethiopian on one side and the American and Malay on the other. Both divergences from the Caucasian ideal were considered inferior.<sup>10</sup>

If racial science is science employed for the purpose of degrading a people both intellectually and physically, then beginning in the 19<sup>th</sup> century, American scientists played an increasingly active role in its development, all the while shaping the race concept. Scientists like Samuel Morton, Josiah Nott, and George Gliddon offered a variety of explanations for the nature of white racial superiority meant to address the nature of physical and intellectual differences between races, the "natural" positions of racial groups in American society, and the capacity for citizenship of non-whites. At the core of this work, known as the American School of Anthropology, was the theory of polygeny—the belief that a hierarchy of human races had separate creations. Samuel Morton's experiments on cranial capacity and intelligence sought to demonstrate this theory. Morton collected hundreds of skulls from around the globe, measured their volume, and concluded that the Caucasian and Mongolian races had the highest cranial capacity and thus the highest levels of intelligence, while Africans had the lowest cranial capacity and thus the lowest levels of intelligence. This work became the basis for more than a century of work studying intelligence and race. More than a century after Morton's death, the evolutionary biologist Stephen Jay Gould, using Morton's same experimental material and methods, could not replicate the earlier findings. Gould concluded that Morton's subjective ideas about race difference influenced his methods and conclusions, leading to the omission of contradictory data and to the conscious or unconscious stuffing or under-filling of certain skulls to match his pre-ordained conclusions.<sup>11</sup> Indeed, the case of Samuel Morton illustrates how social conceptions of human difference shape the science of race.

### **Early 20<sup>th</sup> Century Ideas About Race**

At the dawn of the 20<sup>th</sup> century, explanations for racial difference based on measurable and observable physical traits such as cranial capacity and skin color gave way to a whole new way of thinking about the subject. Race instead came to be understood as a reflection of unseen differences that the scientists of the time attributed to the recently discovered factors of heredity, also known as genes. Genetics quickly came to provide the formative language of modern racism as ideas about racial differences became rooted in biology. This geneticization of race--the idea

that racial differences in appearance and complex social behaviors can be understood as genetic distinctions between so-called racial groups—was shaped, in large part, by the eugenics movement. For the first two decades of the new century, many geneticists considered themselves eugenicists. Eugenics, according to Francis Galton, the founder of the movement, promised to give “the more suitable races or strains of blood a better chance of prevailing over the less suitable.”<sup>12</sup> This could be done either through positive eugenics—certain groups were encouraged to breed with one another – or negative eugenics—in which certain groups or individuals would be denied the right to reproduce, either through sterilization, as was the case in the United States, or through genocide, as was the case in Nazi Germany. Under the guise of this biological banner, eugenic racial science exerted a diverse influence: becoming a powerful ideological force in Nazi Germany, influencing the creation of eugenic sterilization laws in the United States that resulted in at least 30,000 sterilizations, stoking racial hatred in early 20th century America, and becoming a scientific buttress of 20<sup>th</sup> century American racial ideology.<sup>13</sup>

During the first three decades of the 20<sup>th</sup> century, eugenicists and many geneticists fiercely advocated “the belief that human races differed hereditarily by important mental as well as physical traits, and that crosses between widely different races were biologically harmful.” American eugenicists dedicated considerable resources to the study of black-white differences during the first three decades of the 20<sup>th</sup> century, and sought to apply these ideas to the public sphere. Well-respected geneticists wrote openly that “miscegenation can only lead to unhappiness under present social conditions and must, we believe, under any social conditions be biologically wrong.”<sup>14</sup> In his seminal work on race and intelligence, *Race Crossing in Jamaica* (1929), Charles Davenport, a Harvard trained biologist and the titular head of the American eugenics movements from the outset of the 20<sup>th</sup> century until the 1930s, wrote “we are driven to the conclusion that there is a constitutional, hereditary, genetical basis for the difference between the two races [whites and blacks] in mental tests. We have to conclude that there are racial differences in mental capacity.”<sup>15</sup> In their influential text *Applied Eugenics* (1933), eugenicists Paul Popenoe and Roswell Hill Johnson, who endorsed segregation as a “social adaptation,” wrote “that the Negro race differs greatly from the white race, mentally as well as physically, and that in many respects it may be said to be inferior when tested by the requirements of modern civilization and progress.” Moreover, they suggested “negroes, both children and adults, have been found markedly inferior to white in vital capacity... Differences in temperament and emotional reaction also exist, and may be more important than the purely intellectual differences.”<sup>16</sup> It must be stated that the genetic claims of racial difference advocated by eugenicists—from differences in intelligence to disease rates to musicality—have all been shown to be false.

Eugenic propagandists gave race an unalterable permanence; neither education, nor change in environment or climate, nor the eradication of racism itself could alter the fate of non-whites. In the United States, the impact of eugenics on matters of human difference was felt widely. In Virginia, as head of the State’s Bureau of Vital Statistics, eugenicist and white supremacist Walter Plecker helped to shape the State’s segregation policies. For example, Plecker helped push Virginia’s anti-miscegenation Racial Integrity Act of 1924, and used that law to expose individuals he believed were passing as white in an attempt to stop what he feared to be the mongrelization of the races.<sup>17</sup>

African-American intellectuals were prominent among those who responded to the growing chorus of scientific racist thinking at this time. In 1909 Kelly Miller, the Dean of Howard University, argued against scientific racism, writing that “since civilization is not an attribute of the color of skin, or curl of hair, or curve of lip, there is no necessity for changing such physical peculiarities...”<sup>18</sup> The most determined critic of the biological race concept was W.E.B. Du Bois, a founder of the NAACP and editor of its magazine *The Crisis*. Du Bois challenged the biological race concept at a time when science was being exploited in the service of racist ideas and practices. Du Bois was the first to synthesize a growing anthropologic literature that argued that race was not, in fact, a useful scientific category, and showed, instead, that race was socially constructed. For example, Du Bois believed race an ineffective measurement given that “the human species so shade and mingle with each other that... it is impossible to draw a color line between black and other races.”<sup>19</sup>

### **Mid-20<sup>th</sup> Century Ideas About Race**

Beginning in the 1930s, an increasing number of geneticists, anthropologists, and social scientists began moving away from typological and eugenic descriptions of human difference to view races through the lens of population genetics and evolutionary biology. This approach rejected a eugenic notion of fixed genetic differences between so-called racial groups, and instead understood human races as dynamic populations distinguished by variations of the frequency of genes between populations. By rooting the meaning of race in genetic variation it became more difficult (though still possible) to argue that one race or another had particular traits specifically associated with it, or that one individual was typical of a race. Furthermore, the four or five racial groups identified by 18<sup>th</sup> and 19<sup>th</sup> century scientists, now varied depending upon the genes and traits examined by geneticists. Theodosios Dobzhansky, the evolutionary biologist whose work between the 1930s and 1970s had a tremendous influence on the way that scientists thought about race, concluded that the number of human races was variable depending upon what traits were being examined. In fact, the concept of race in the context of population genetics and evolutionary biology is simply a tool for making genetic “diversity intelligible and manageable” in scientific study.<sup>20</sup> In other words, while human differences are real, the way we choose to organize those differences is a methodological decision and not one that reflects an underlying evolutionary hierarchy or the conservation of racialized traits through the admixture of populations. This new approach was brought about by new findings in genetics that demonstrated genetic variation was much more common within species than once thought, and by the development of what is known as the evolutionary synthesis in biology, a union of population genetics, experimental genetics, and natural history that rejected eugenic notions of difference between and among species. Finally, changes in the concept of race were influenced by a growing cadre of scientists who were generally more liberal on matters of race than had been their predecessors.

From the 1930s through the 1950s, books by the biologists Dobzhansky and L.C. Dunn, by the anthropologists Ruth Benedict and Ashley Montagu, by the political scientist and later Nobel laureate Ralph Bunche, and by the historian Jacques Barzun popularized the idea that race was not the immutable constant once proclaimed so by science. Advances in genetics, particularly the discovery of the structure of the double helix in 1953, confirmed the complexity of human heredity and continued to undercut the simplistic theories of eugenicists and other

racial scientists who advanced the idea of a fixed racial taxonomy. Yet, despite the best intentions by scientists like Dobzhansky and Dunn to reconceptualize the concept of race for modern biology, evidence suggests that these geneticists and their scientific allies ultimately helped to preserve the concept of race in science, and hence for use by both scientific and non-scientific racists—its methodological utility to evolutionary biologists and population geneticists would quickly be exploited and manipulated by racists (scientists and non-scientist alike). Dobzhansky understood and feared this possibility. He acknowledged the imprecise nature of the race concept and worried that a genetic race concept could also begin to “serve as a racial standard with which individuals and groups of individuals can be compared” in the same way that a typological concept of race could.<sup>21</sup> But for him and other population geneticists and evolutionary biologists at mid-century, the concept of race was a methodological tool by which to measure genetic difference within species, not a way to understand the physical and intellectual differences between peoples with varying skin color.

The impact of this new way of thinking about race quickly made its way beyond scientific circles. For example, in 1944 *An American Dilemma: The Negro Problem and Modern Democracy*, by the Swedish economist Gunnar Myrdal, sought to recast America’s racial problems as a moral conflict between the egalitarian impulses of America’s democratic creed and its racist practices. Myrdal rejected the idea of white over black in an unchangeable biological hierarchy of races; his conclusion was influenced by changes in the biological race concept. Several chapters of *An American Dilemma* examined then-contemporary discoveries in genetics that led to the rejection of typological and eugenic notions of race in favor of race as “quantitative notions of the relative frequency of common ancestry and differentiating traits.” Myrdal acknowledged “the great variability of traits among individuals in every population group... and the considerable amount of overlapping between all existing groups.” Finally, Myrdal believed through genetics “the fundamental unity and similarity of mankind... is becoming scientifically established.”<sup>22</sup>

It is significant to note that Myrdal’s text is cited in the 1954 landmark U.S. Supreme Court decision *Brown v. the Board of Education*, which unanimously struck down legalized segregation in public education. *Brown* did not comment directly on the nature of race or on the alleged superiority or inferiority of racial groups, yet, by identifying segregation’s harmful impact on black children’s psyches and the wrongness of causing these children “a feeling of inferiority,” the Court implicitly acknowledged that thinking about races as inferior and superior was erroneous. Although not cited in the *Brown* ruling, it is hard to imagine that the publication of two United Nations Educational, Scientific, and Cultural Organization (UNESCO) “Statements on Race” in 1950 and 1951, both of which sought to place the race concept squarely in the context of population genetics and evolutionary biology, did not also have some impact on the thinking of the Court. The First Statement argued that “from the biological standpoint, the species *Homo sapiens* is made up of a number of populations, each one of which differs from the others in the frequency of one or more genes,” and that “for all practical social purposes “race” is not so much a biological phenomenon as a social myth.” Although the First Statement, chaired by Ashley Montagu, called for abandoning the concept of race in favor of ethnicity, the Second Statement held fast to the validity of the population genetics-based race concept as discussed above. Montagu, however, was not deterred, and spent much of the rest of his career fighting against the use of race in scientific thought, believing that its use was not scientifically

appropriate because it was a “trigger word... utter it and a whole series of emotionally conditioned responses follow.”<sup>23</sup>

Even as biological and anthropological thought embraced the new genetic-based race concept, many scientists held-fast to obsolete notions of race, suggesting that even widely accepted and validated science could not be an antidote to the racism of many in the field and beyond. R.A. Fisher, one of the founders of population genetics, asserted in 1951, for example, that “available scientific knowledge provides a firm basis for believing that groups of mankind differ in their innate capacity for intellectual and emotional development.”<sup>24</sup> Writing in 1961, Carlton Coon, recently elected as President of the American Association of Physical Anthropologists, resuscitated the 19<sup>th</sup> century scientific racism of Samuel Morton, arguing in his book *The Origin of Races* that the five races of humanity had separately evolved into *Homo sapiens*. Coon’s confidant and cousin was the notorious mid-20<sup>th</sup> century racist Carlton Putnum, whose racist tract *Race and Reason* drew heavily on the ideas in *The Origin of Races*.<sup>25</sup>

That these arguments about the nature of race and racial difference were occurring during the years of America’s Civil Rights Movement help illustrate the relationship between science and society. Dobzhansky and other biologists remade the race concept because they believed it methodologically important to their work and because they wanted to jettison from scientific thought and practice the racism inherent in typological and eugenic ideas about race. Even as science debated the meaning of race in biology, the abhorrent effects of American racism were in plain view. The same week that UNESCO published its “Second Statement on Race” a mob of three thousand whites prevented an African-American U.S. Army veteran from moving into an apartment in a formerly all white apartment building in Cicero, Illinois.<sup>26</sup>

### **Late-20<sup>th</sup> Century Ideas About Race**

By the 1960s and 1970s, geneticists were able to reveal with increasing sophistication and precision the shortcomings of the concept of race in biology. In 1972, the geneticist Richard Lewontin, who had been a student of Dobzhansky’s at Columbia in the 1950s and was considered a leader in his field, published a study showing that human populations were even more genetically diverse than once thought. Lewontin, using molecular genetic techniques in gel electrophoresis he himself had pioneered in the mid-1960s, found that most genetic variation (85.4%) was “contained within” racial groups or “between populations within a race” (8.3%), whereas only 6.3% of “human variation was accounted for by racial classification.” Based on these findings, Lewontin concluded that race had “virtually no genetic... significance.” After all, if more genetic diversity occurred within so-called racial groups than between them, then what exactly would race be measuring if it were meant to organize populations based on genetic difference? Lewontin concluded that the “use of racial categories must take its justifications from some other source than biology. The remarkable feature of human evolution and history has been the very small degree of divergence between geographical populations as compared with the genetic variation among individuals.”<sup>27</sup>

At the end of the 20<sup>th</sup> century, the geneticist L. Luca Cavalli-Sforza confirmed Lewontin’s findings using contemporary DNA techniques. His results showed that there was no significant genetic discontinuity between any so-called races in our species that would justify the

use of racial classification in humans. Cavalli-Sforza believed that these results and the results of other studies implied that population genetics and evolutionary biology had satisfactorily shown that the “subdivision of the human population into a small number of clearly distinct, racial or continental, groups... is not supported by the present analysis of DNA.” Given that studies had now confirmed Lewontin’s results for almost three decades, Cavalli-Sforza believed that “the burden of proof is now on the supporters of a biological basis for human racial classification.”<sup>28</sup>

Yet even as it became increasingly clear that the race concept was not a useful classificatory tool, several high profile scientists, none of whom were geneticists, continued to make claims that race was, in fact, a legitimate biological concept, and that those who argued against race had political, not scientific agendas. Generally, it was from these findings that the public became aware of the ongoing debates about the nature of race in science. For example, in 1969 the educational psychologist Arthur Jensen, a professor at the University of California, Berkeley, argued that intelligence, or IQ, had high genetic heritability, and that therefore redress for racial discrepancies in IQ through education was useless.<sup>29</sup> A few years earlier the Nobel Prize winning physicist William Shockley, a professor at Stanford University and co-inventor of the transistor, made similar claims, calling for the National Academies of Science to investigate the genetic aspects of what he called our nation’s “slum problem.”<sup>30</sup> The attempt by men like Jensen and Shockley to employ the biological race concept demonstrates that no matter how hard biologists like Dobzhansky, Montagu, and Lewontin tried to either narrowly define race in the context of biology or abandon it altogether, and that despite the stated shift away from typology to populationist thinking, race could and would be used for typological, racist, and non-scientific ends.

Rather than debate the biological nature of race, in the 1970s some scientists instead began to debate the biological nature of racism. Sociobiology, as developed by the entomologist E.O. Wilson, claimed racism, xenophobia, and ethnocentrism to be biological traits. Sociobiology offered theories on why, in an evolutionary and genetic way, populations of peoples hated, feared, and distrusted one another. So while the biological race concept was largely ignored by sociobiological theory, the social meanings of race became a focus of this research through the study of racism. In the wake of the social transformation brought about by the Civil Rights Movement, the 1970s witnessed a backlash against the struggle for equality in the United States. A sociobiological theory of racism and its popularization seemed well-suited to these times. As Henry Louis Gates has argued, sociobiology, in a sense, “naturalized racism” by providing a genetic basis for it.<sup>31</sup>

### **Conclusion: The Race Concept in the 21<sup>st</sup> Century**

At a June 2000 Rose Garden ceremony, President Bill Clinton, flanked by genome sequencers Francis Collins and Craig Venter, announced the completion of a draft sequence of the human genome, the complete sequence of human DNA. Collins, head of the National Human Genome Research Institute, and Venter, then President of Celera Genomics, offered their genomic data to the world that is enhancing our understanding of human biology, and, in turn, will help public health and medical professionals prevent, treat, and cure disease.

On that day Venter and Collins emphasized that their work confirmed that human genetic diversity cannot be captured by the concept of race, and also showed that all humans have genome sequences that are 99.9% identical. At the White House celebration Venter said “the concept of race has no genetic or scientific basis.”<sup>32</sup> A year later, Collins wrote “those who wish to draw precise racial boundaries around certain groups will not be able to use science as a legitimate justification.”<sup>33</sup> Yet, since the White House announcement there has been an increase in claims that race is a biologically meaningful classification. Genetic epidemiologist Neil Risch believes that “identifying genetic differences between races and ethnic groups... is scientifically appropriate.” Risch claims that race is essential to help determine “differences in treatment response or disease prevalence between racial/ethnic groups” and strongly supports the “search for candidate genes that contribute both to disease susceptibility and treatment response, both within and across racial/ethnic groups.”<sup>34</sup> Even Collins himself suggested in 2005 that we now need to study how genetic variation and disease risk are correlated with “self-identified race, and how we can use that correlation to reduce the risk of people getting sick.”<sup>35</sup> And this is the very paradox of the genomic era when it comes to race; with renewed precision scientists are able to show that race does not accurately capture human genetic diversity, yet, at the same time, others claim that it is a useful proxy to best capture human genetic diversity, a proxy that is especially useful in biomedical settings.

The upsurge of claims that race is, in fact, a useful taxonomic concept for humans seems to be driven by several factors. First, genomic technology has enhanced our ability to examine the 0.1% of nucleic acids in the human genome that, on average, vary between individuals. Some scientists are relying on the race concept to make sense of the genetic variation in this small sliver of our genomes. Second, the history of the biological race concept suggests that race is deeply embedded in scientific thought. This history continues to shape scientific thinking about human difference. Finally, the critical task of understanding and reducing known disparities in health—including disparities in disease including heart disease, cancers, and diabetes—has researchers looking at all possible explanations, including genetic ones, for disparities in health outcomes. Fueled by programs including the National Institutes of Health “Healthy People 2010” and CDC’s “Racial and Ethnic Approaches to Community Health,” the search for the underlying causes of these disparities is a national healthcare priority. The renewed focus on race and genetics suggests, however, that an analysis of the complex relationship between individuals, populations, the environment, and health may be surrendered to a racial worldview.

It would be silly to think that science will somehow extricate us from a racial quagmire. Despite advances in scientific thinking on race--racism and the belief in races persist. Racism is too complicated to be eradicated by science alone. Nonetheless, scientists do have much to offer to the debate over the nature of race and racial classification, and we would all be the better for listening to what they are saying. Geneticists Kelly Owens and Mary-Claire King recognize this, writing that: “Of course, prejudice does not require a rational basis, let alone an evolutionary one, but the myth of major genetic differences across “races” is nonetheless worth dismissing with genetic evidence.”<sup>36</sup>

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<sup>1</sup> See, for example, P.C. Ng, Q. Zhao, S. Levy, R.L. Strausberg, and J.C. Venter, "Individual Genomes Instead of Race for Personalized Medicine," *Clinical Pharmacology and Therapeutics*. 84(September 2008) pp.306-309; Svante Paabo, "The Mosaic That Is Our Genome." *Nature* 421 (2003): 409-12; Marcus Feldman, Richard Lewontin, and Mary-Claire King. "Race: A Genetic Melting-Pot." *Nature* 424 (2003): 374; Alan Goodman, "Why Genes Don't Count (For Racial Differences in Health) *American Journal of Public Health*. 90(2000) pp.1699-1672.

<sup>2</sup> Histories of the race concept include: Bruce R. Dain, *A Hideous Monster Of The Mind: American Race Theory In The Early Republic*. (Cambridge, Mass.: Harvard University Press, 2002); Audrey Smedley, *Race In North America: Origin And Evolution Of A Worldview*. (Boulder, Colo.: Westview Press, 1999); William Stanton, *The Leopard's Spots: Scientific Attitudes Toward Race In America, 1815-59*. (Chicago: University Of Chicago Press, 1960); Nancy Stepan, *The Idea Of Race In Science: Great Britain, 1800-1960*. (Hamden, Conn.: Archon Books, 1982); Elazar Barkan, *Retreat Of Scientific Racism: Changing Concepts Of Race In Britain And The United States Between The World Wars*. (New York: Cambridge University Press, 1992); Stephen Jay Gould, *The Mismeasure Of Man*. (New York: Norton, 1996).

<sup>3</sup> Thomas Jefferson, *Notes on the State of Virginia* (Chapel Hill: University of North Carolina Press, 1955) pp.138-140, 143.

<sup>4</sup> Recent DNA evidence suggests, for example, that Jefferson's relationship with his slave Sally Hemmings produced at least one child. See E.A. Foster et al. "Jefferson Fathered Slave's Last Child," *Nature*. 396(1998) pp.27-28; Eric S. Lander and Joseph J. Ellis, "Founding Father," *Nature*. 396(1998) pp.13-14.

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<sup>6</sup> Ivan Hannaford, *Race: The History of an Idea in the West* (Washington, D.C.: Woodrow Wilson Center Press, 1996) pp.14, 17-60.

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