Opinion

How Not To Talk About Race And Genetics

Race has long been a potent way of defining differences between human beings. But science and the categories it constructs do not operate in a political vacuum.

By BuzzFeed Opinion
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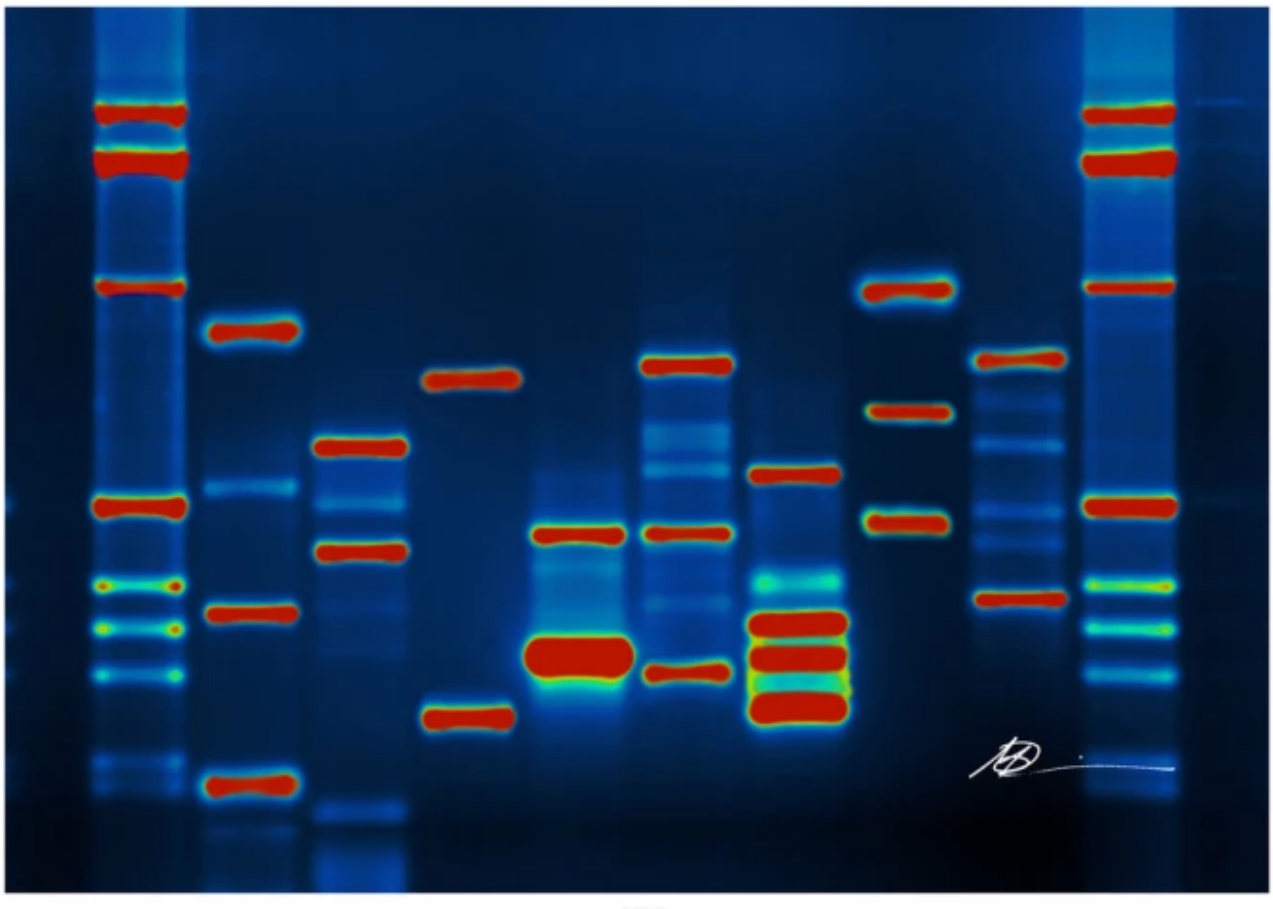

Micah Baldwin / Via Flickr: micahb37

This open letter was produced by a group of 67 scientists and researchers. The full list of signatories can be found below.

In his newly published book *Who We Are and How We Got Here*, geneticist David Reich engages with the complex and often fraught intersections of genetics with our understandings of human differences — most prominently, race.

He admirably challenges misrepresentations about race and genetics made by the likes of former New York Times science writer Nicholas Wade and Nobel Laureate James Watson. As an eminent scientist, Reich clearly has experience with the genetics side of this relationship. But his skillfulness with ancient and contemporary DNA should not be confused with a mastery of the cultural, political, and biological meanings of human groups.

As a group of 67 scholars from disciplines ranging across the natural sciences, medical and population health sciences, social sciences, law, and humanities, we would like to make it clear that Reich's understanding of "race" — most recently in a Times column warning that "it is simply no longer possible to ignore average genetic differences among 'races'" — is seriously flawed.

For centuries, race has been used as potent category to determine how differences between human beings should and should not matter. But science and the categories it constructs do not operate in a political vacuum. Population groupings become meaningful to scientists in large part because of their social and political salience — including, importantly, their power to produce and enforce hierarchies of race, sex, and class.

Reich frames his argument by positing a straw man in the form of a purported orthodoxy that claims that "the average genetic differences among people grouped according to today's racial terms are so trivial when it comes to any meaningful biological traits that those differences can be ignored." That orthodoxy, he says, "denies the possibility of substantial biological differences among human

populations" and is "anxious about any research into genetic differences among populations."

This misrepresents the many scientists and scholars who have demonstrated the scientific flaws of considering "race" a biological category. Their robust body of scholarship recognizes the existence of geographically based genetic variation in our species, but shows that such variation is not consistent with biological definitions of race. Nor does that variation map precisely onto ever changing socially defined racial groups.

Reich critically misunderstands and misrepresents concerns that are central to recent critiques of how biomedical researchers — including Reich — use categories of "race" and "population."

For example, sickle cell anemia is a meaningful biological trait. In the US it is commonly (and mistakenly) identified as a "black" disease. In fact, while it does have a high prevalence in populations of people with West and Central African ancestry, it also has a high prevalence in populations from much of the Arabian Peninsula, and parts of the Mediterranean and India. This is because the genetic variant that causes sickle cell is more prevalent in people descended from parts of the world with a high incidence of malaria. "Race" has nothing to do with it. Thus, it is simply wrong to say that the higher prevalence of sickle cell trait in West African populations means that the racial category "black" is somehow genetic.

The same thing goes for the people descended from West African populations whom Reich examined in his work on prostate cancer. These people may have a higher frequency of a version of a particular gene that is linked to a higher risk of prostate cancer. But lots of people not from West Africa also have this same gene. We don't call these other people a "race" or say their "race" is relevant to their condition. Finding a high prevalence of a particular genetic variant in a group does not make that group a "race."

Human beings are 99.5% genetically identical. Of course, because the human genome has 3 billion base pairs, that means any given individual may differ from another at 15 million loci (.5% of 3 billion). Given random variation, you could genotype all Red Sox fans and all Yankees fans and find that one group has a statistically significant higher frequency of a number of particular genetic variants than the other group — perhaps even the same sort of variation that Reich found for the prostate cancer–related genes he studied. This does not mean that Red Sox fans and Yankees fans are genetically distinct races (though many might try to tell you they are).

In short, there is a difference between finding genetic differences between individuals and *constructing* genetic differences across groups by making conscious choices about which types of group matter for your purposes. These sorts of groups do not exist "in nature." They are made by human choice. This is not to say that such groups have no biological attributes in common. Rather, it is to say that the *meaning and significance* of the groups is produced through social interventions.

In support of his argument for the biological relevance of race, Reich also writes about genetic differences between Northern and Southern Europeans. Again, this should not be an argument for the biological reality of race. Of course, we could go back to the early 20th century when many believed that the "industrious" Northern Teutons were a race distinct from the "slothful" Southern Europeans. Such thinking informed the creation of racially restrictive immigration laws in 1924, but we think even Reich would not consider this sort of thinking useful today.

Instead, we need to recognize that meaningful patterns of genetic and biological variation exist in our species *that are not racial*.

Reich's claim that we need to prepare for genetic evidence of racial differences in behavior or health ignores the trajectory of modern

genetics. For several decades billions of dollars have been spent trying to find such differences. The result has been a preponderance of negative findings despite intrepid efforts to collect DNA data on millions of individuals in the hope of finding even the tiniest signals of difference.

To challenge Reich's claims is not, as he would have it, to stick our heads in the sand. It is to develop a more sophisticated approach to the problem of human group categorization in the biomedical sciences.

Precisely because the problems of race are complex, scientists need to engage these issues with greater care and sophistication. Geneticists should work in collaboration with their social science and humanities colleagues to make certain that their biomedical discoveries make a positive difference in health care, including the care of those studied.

This is not to say that geneticists such as Reich should never use categories in their research; indeed, their work would be largely impossible without them. However, they must be careful to understand the social and historical legacies that shape the formation of these categories, and constrain their utility.

Even "male" and "female," which Reich invokes as obviously biologically meaningful, has important limitations. While these categories help us to know and care for many human beings, they hinder our capacity to know and care for the millions of human beings born into this world not clearly "sexed.' Further, overemphasizing the importance of the X and Y chromosomes in determining sex prevent us from seeing the other parts of the genome involved in sex.

While focusing on groups with a high incidence of a particular condition may help researchers identify genetic variants that might correlate to the condition, it must also be understood that all genetic

contributions to physical traits, including disease, are always influenced by environmental factors.

For example, an ancestral gene may not have ever contributed to disease risk in its former environment, but now does when individuals carrying it are differentially exposed to harmful environments. This raises the question of whether it is more efficacious to remove the environmental insult or alter the individual's physiology by medical intervention (or both).

Making claims about the existence of biological races won't help answer questions about health, like how the health of racialized groups is harmed by racial discrimination — how it increases the risk of disease, the risk of exposure to environmental toxins, or the risk of inadequate and inappropriate health care.

This doesn't mean that genetic variation is unimportant; it is, but it does not follow racial lines. History has taught us the many ways that studies of human genetic variation can be misunderstood and misinterpreted: if sampling practices and historical contexts are not considered; if little attention is given to how genes, environments, and social conditions interact; and if we ignore the ways that sociocultural categories and practices shape the genetic patterns themselves.

As scholars who engage with social and scientific research, we urge scientists to speak out when science is used inappropriately to make claims about human differences. The public should not cede the power to define race to scientists who themselves are not trained to understand the social contexts that shape the formation of this fraught category. Instead, we encourage geneticists to collaborate with their colleagues in the social sciences, humanities, and public health to consider more carefully how best to use racial categories in scientific research. Together, we can conduct research that will influence human lives positively.

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