

BOOK REVIEW ARTICLE**Breaking New Ground**

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**Who We Are and How We Got Here:
Ancient DNA and the New Science of the Human Past**

David Reich

335pp. Pantheon Books, New York, 2018

Essentially beginning with Watsonian and Pavlovian behaviorism, which claimed that environment was far more influential than genetics in shaping human behavior, the work of sociologist Emile Durkheim in France, and anthropologist Franz Boas in America, resulted in a strong egalitarian and anti-genetic bias in the social sciences.

Franz Boas's radical outlook and political activism is rigorously documented.¹ The scion of a German Jewish revolutionary family whose members had participated in two of the major nineteenth century revolutionary movements in Europe, Boas had earned a doctoral degree in Germany, based on a competent study of Inuit society on Canada's Baffin Island, before migrating to the United States in 1887. He obtained a position on the faculty of Columbia University in New York and eventually founded the first university department in America to bear the name "Anthropology."

In the ensuing years, Boas trained and awarded Ph.D.s in anthropology to a number of students, most notably A. L. Kroeber, Ruth Benedict, Edward Sapir, Margaret Mead, and Melville Herskovits, all of whom, holding the first ever Doctorates in Anthropology, spread out to become heads of new departments of Anthropology in major universities around America, each duly dedicated to spreading Boas's anti-hereditarian beliefs.

With the spread of similarly cherished environmentalist doctrine in sociology, egalitarianism soon became dominant in both fields throughout the English speaking world. While vigorous genetic research con-

¹ Gelya Frank, "Jews, Multiculturalism, and Boasian Anthropology," *American Anthropologist*, December 1997, volume 99, number 4: 731-745.

tinued in continental Europe, egalitarianism prevailed after World War II in both the political and academic spheres of influence. It shaped, for example, the politically biased framework of the 1949 UNESCO *Statement on Race*, whose author, Ashley Montagu, was a graduate student of Boas at Columbia University.

Indeed, it is only in the last few decades that expanding research in medicine has led to advances in genetics, and eventually to the recognition of the dominant role of genes in shaping human behavior. This has been furthered by geneticists at Germany's Max Planck Institute and Harvard University, who have extracted DNA from human and proto-human fossil remains dating back some 400,000 years.

David Reich's *Who We Are and How We Got Here* explores the microcosm of ancient DNA and what it reveals: The human genome "contains within it the history of our species." Reich and his colleagues have been able to pinpoint with precise accuracy genetic ancestral differences—for example, the percentage of European and West African ancestry—from an individual's DNA. Simply put, human mental and physical differences are grounded in genetics, going back through evolutionary selection to the earliest formation of human populations. The newfound ability to analyze ancient DNA has eviscerated more than a few assumptions about human origins; it also reveals how the academic egalitarians were abysmally wrong, and how genetic factors define the physical and mental capacities. While his overall outlook is egalitarian as a political ideal, Reich above all remains steadfast as a dedicated scientist, condemning the extreme egalitarianism of activist academics such as Montagu and Richard Lewontin.

In his devotion to genetic research, Professor Reich converted his laboratory at Harvard Medical School into a virtual "factory" for the study of not just DNA but also of ancient human and proto-human DNA. The vigor and scope of his mission has led to his work being characterized as a call to arms, a Manhattan Project for the study of DNA. The ground-breaking work he and his colleagues have undertaken has vastly increased our understanding of the migration of populations. His book brings the fruits of scientific research out of the laboratory to the general reader. Indeed, it is a boon to the popular understanding of science, an engaging exposé of the latest research in genetics for the intellectually curious.

Kudos to Dr. Reich for producing such an insightful and comprehensive treatment of this entirely new and groundbreaking scientific

frontier. It is a shot heard round the world: reverberations of this volume are still unfolding. Nothing is more apt about the book than its title, *Who We Are and How We Got Here*. To fully understand the profound, perhaps epochal significance of this work, it is helpful to examine “where we are and how we got here” in the study of human differences.

Similar and Different

To a degree, all people are alike. The Bantu, Navaho, Iceland-er, Hmong, Portuguese and Chinese share a common species, *Homo sapiens*. Nonetheless the bands, tribes, clans, castes, ethnicities, races, nations, cultures and civilizations that comprise our species subtly, substantially and decisively differentiate mankind. Thus all people are different. Human differences inspire us to creativity, cooperation, conflict, and accommodation. They are the driving force of history.

Strange it is that our bloods,
of colour, weight and heat, pour'd all together,
Would quite confound distinction, yet stand off
In differences so mighty.
—*All's Well that Ends Well*, act 2, sc. 3

Wherefore the differences within our species? The vast array of human physical, cognitive and behavioral traits are a fact of life. Children resemble their parents. This is inborn, leading us to conclude that human differences are biological in origin. Through the millennia ideas of inborn traits (and therefore biological inheritance) were taken for granted in virtually all societies. No laboratory was necessary to determine “like father like son.” Yet there was no *clinical* proof. That has changed, thanks to the valuable research of the many scientists who preceded Dr. Reich and colleagues. It has been a long time coming.

In the mid-1800s a young Augustinian friar preoccupied himself with experiments breeding green and yellow peas. Gregor Mendel's work launched a revolution: he inadvertently discovered the science of genetics. A few years later, Swiss chemist Friedrich Miescher identified nuclein inside the nuclei of human white blood cells. Nuclein became known as “nucleic acid, and later as “deoxyribonucleic acid,” or “DNA.”

Guided by genetics, the study of human differences and the races of man began in earnest. Perhaps the high point was in the period following World War I. As Western Civilization was reeling from the effects of war, revolution, epidemics, and instability, a leading scholar concluded:

The revolutionary unrest which to-day afflicts the entire

The Journal of Social, Political and Economic Studies

world goes far deeper than is generally supposed. Its root cause is not Russian Bolshevik propaganda, nor the late war, nor the French Revolution, but a process of racial impoverishment, which destroyed the great civilizations of the past and which threatens to destroy our own.

—T. Lothrop Stoddard, March 20, 1922, Preface to
The Revolt Against Civilization

Today these are fighting words, surely to arouse the ire of cognoscenti at Dr. Stoddard's alma mater, Harvard University (and elsewhere). In 1922 they were seen as groundbreaking—a considered assessment of the world situation by a preeminent American scholar, an individual who, among other things, predicted “Japan's rise as a major power; a war between Japan and the U.S.; a second war in Europe; the overthrowing of European colonial empires in Africa and Asia ... and the rise of extremist Islamism...” (*Wikipedia* on Stoddard)

Much ink has been spilled over what Dr. Stoddard meant by “racial impoverishment.” After the Second World War, “racial science” was largely discarded, though the study of DNA quietly progressed. As previously mentioned, the American scientific community led the way in embracing egalitarianism, which Reich refers to as the “orthodoxy.” Nurture was portrayed as decidedly more determinative than Nature.

In the aftermath of World War II, Neo-Marxist scholars quickly seized the moral high ground and decreed that we are all the “same,” promoting an ideal reminiscent of the “New Soviet Man” under Communism. Myriad human differences were portrayed as merely skin deep and overwhelmingly attributable to environmental and cultural factors rather than biology. In 1942, Ashley Montagu published *Man's Most Dangerous Myth: The Fallacy of Race* and rocketed to international preeminence as a foremost authority on the subject. Montagu's conclusions were reminiscent of the pseudo-scientific ideas of agronomist Trofim Lysenko, whose ideas were advanced in the Soviet Union from the 1920s. Lysenko even rejected the concept of the gene as well as natural selection and promoted Lamarckian ideas about the heritability of acquired characteristics. (Carl Degler's *In Search of Human Nature* explores the critical impact that Darwinian evolution had in tilting the scales back toward nature.)

While Lysenko's denial of evolutionary genetics is now thoroughly discredited, contemporary denial of the realities of race influences the Western scientific community. This is also evident in the popular press:

The April 2018 issue of *National Geographic*, titled “The Race Issue,” proclaimed, “While science tells us that there is no such thing as race, society uses racial distinctions to divide us.”

It was the seminal work of Luca Cavalli-Sforza that inspired Dr. Reich. Cavalli-Sforza combined demography with the newly discovered ability to analyze blood groups. He authored *The History and Geography of Human Genes*. This led to the study of connections between blood groups and migration patterns, a new horizon in scientific research. While these were truly sensational developments, their future significance would exceed expectations. Dr. Reich’s work reports on how the study of ancient DNA is changing the study of genetics.

Massive resources have been devoted to creating a “level playing field” of equal opportunity in Western societies. Yet scientists understand that equality of condition and equality of outcome are mutually exclusive. However, most remedial measures addressing “inequality” are based on a belief that society’s inequities are a product of environmental causation. This thinking has peacefully coexisted with the study of DNA for decades, a tenuous status quo where geneticists and others are scrupulously careful to not transgress egalitarian political correctness. No one should inadvertently telegraph “racist” on a curriculum vitae! While the egalitarian consensus is increasingly challenged, Reich’s book has breached the dam. Undoubtedly the pendulum is swinging from the nurture to the nature side of things.

Reich himself offers perhaps the best thumbnail appraisal of his book: It is “exploding stereotypes, undercutting prejudice, and highlighting the connections among peoples not previously known to be related.” While hardly immodest, his assertion is indeed correct.

Scientific Revolution

The very title gives it away: *Who We Are and How We Got Here: Ancient DNA and the New Science of the Human Past*. The abiding theme of Reich’s book can be summarized in the author’s own words:

Ancient DNA has allowed us to peer deeper into time, and forced us to question our understanding of the past....

DNA has emerged as central to the new synthesis of genetics, archaeology and linguistics that is now replacing outdated theories.

...whether we like it or not, there is no stopping the genome

revolution. The results that it is producing are making it impossible to maintain the orthodoxy established over the last half century, as they are revealing hard evidence of substantial differences across populations.

Reich's work thoroughly examines the impact and potential ramifications of this "new science." It reports on the scientific revolution in which Reich is a key participant. The study of ancient DNA is contributing mightily to the study of linguistics, anthropology and archaeology, yielding critical new insight into human history.

It could also temper the rigid egalitarian ethos governing how society addresses manifold social challenges. Yet that may be a bridge too far. Western societies have made formidable investments — emotional, political and financial measures — to address environmental causation.

Reich guides the reader on his personal journey of discovery. It began in the early 2000s, when he was tasked with a conducting a novel investigation of 40,000-year-old Neanderthal bones unearthed in Croatia. The mission: determine if evidence exists that humans interbred with Neanderthals. Not so long ago such a notion would have elicited guffaws from dubious clinicians. Yet surprisingly, the answer was yes.

Ancient DNA researchers such as Dr. Reich are the proverbial children in a candy store: so much to be analyzed, and comparatively few resources to investigate. Yet Dr. Reich's journey has not been without controversy. Guilt-ridden German scholars pulled out of one study as early research findings were, to them, reminiscent of Nazi race theories. Reich understands this reaction, and labors to establish that he is quite sensitive to the potential political ramifications of his research.

Who We Are and How We Got Here examines the impact of migration, hybridization and differentiation in forming nations, cultures and communities, revealing the genetic history of the peoples of Europe, East Asia, the Indian subcontinent, Africa and the Americas. Ancient DNA confirms the migration from Europe to the Indian subcontinent four thousand years ago, corroborating legends of the *Rig Veda*.

The ever-changing genetic fault lines of humanity are markedly different from what they were 10,000 years ago. Thus Reich waxes eloquent on much of what humanity has in common. It is widely known that we have been breeding and blending through the millennia. However the more interesting story of humanity's incredible journey, differentiation—how we've sorted ourselves out—merits more emphasis.

The whole of his work leaves us with the impression that Dr. Reich is in agreement with that, though he is keenly aware that any scholarly treatment of the importance of DNA and genetics should be carefully worded. More than a few aspiring scientists have suffered profound professional detriment from running afoul of political correctness on the subject. This brings us to the author's admonition preceding Part Three: "... the data will disprove many commonly held assumptions. The implications of this complexity for society, and for the need to rethink who we are, is the theme of part III of this book"

Indeed. Part Three is aptly entitled: "The Disruptive Genome."

Disruptive

This concluding section is where Dr. Reich deftly preserves his prospects for a Nobel Prize. Among a series of quite interesting anecdotes pertaining to racial admixture in the New World, the following story of a 2006 study stands out: In an extensive sampling of African American men suffering from cancer of the prostate, it was "found that in one region of the genome, they had about 2.8 percent more African ancestry than the average in the rest of their genomes." This genetic anomaly conclusively explained the higher rate of the disease among African Americans than among European Americans. Subsequently the author was "angrily" attacked by an anthropologist who asserted that studying "West African" or "European" DNA to point to biological differences was "flirting with racism."

On another occasion a "legal ethicist" suggested that it would be much better for him to refer to "African-American" and "European" descended populations as "cluster A" and "cluster B," thus purging them of any racial connotation. Race is never far from the surface in the study of genetics. Indeed, Reich studiously avoids mention of "race." This is de rigueur for an egalitarian. It is also a prudent strategy to prevent and protect scholars from politically motivated attacks.

Race, today's foremost four-letter word, is the elephant in the room in the study of genetics. A key tenet of the reigning political orthodoxy is that race is a "social construct," something imprecisely defined by even its proponents. This is in stark contrast to Benjamin Disraeli's pronouncement that "All is race" and that "No man will treat with indifference the principle of Race, for it is the key to history." While DNA studies have yet to contradict Disraeli's assertion, dismissing the very concept of race is the nimble way to avoid it.

To his credit, Dr. Reich takes the scientific orthodoxy to task. He acknowledges that it was bequeathed to us by Ashley Montagu's *Man's Most Dangerous Myth: The Fallacy of Race*, as well as anthropologist Richard Lewontin's belief that "...Human racial classification is of no social value and is positively destructive of social and human relations..." Reich realizes that dogma rooted in Montagu and Lewontin's orthodoxy has inhibited scientific inquiry. As the study of genetics slowly emerges from the fog of political correctness, a scientist of Dr. Reich's caliber just mentioning this taboo makes *Who We Are and How we Got Here* significant. As he writes,

But this consensus view of many anthropologists and geneticists has morphed, seemingly without question, into an orthodoxy that the biological differences among human populations are so modest that they should in practice be ignored — and moreover, because the issues are so fraught, the study of biological differences among populations should be avoided if at all possible.... (p. 250).

No reasonable person suspects Dr. Reich, descended from Ashkenazi Jews, of having a political agenda. Yet he is well aware that his own work could well be distorted as being on that "...slippery slope to... pseudoscientific arguments about biological differences..."

So he launches a preemptive defense:

It is now undeniable that there are nontrivial average genetic differences across populations in multiple traits, and the race vocabulary is too ill-defined and too loaded with historical baggage to be helpful...the current debate...is mired in an argument between two indefensible positions. On one side there are beliefs about the nature of the differences which are grounded in bigotry... On the other side there is the idea that any biological differences in populations are so modest that as a matter of social policy they can be ignored and papered over. It is time to move on from this paralyzing false dichotomy and to figure out what the genome is actually telling us (bottom p. 253).

Here Reich is wisely tacking down the middle, striving mightily to steer clear of the "paralyzing false dichotomy," further stating "I have deep sympathy for the concern that genetic discoveries about differences in populations may be misused to justify racism." Indeed. Many scientific

scholars have learned the hard way not to tread on the toes of egalitarian orthodoxy. Reich knows this: "In the last couple of decades, most population geneticists have sought to avoid contradicting the orthodoxy."

While challenging the orthodoxy, Reich all the same preserves his credibility with the politically correct. He recalls an encounter with James Watson at Cold Spring Harbor, denigrating the Nobel Prize winning scientist who did so much for that distinguished institution as its president for thirty-five years: "...as an eighty-two year old man, his intellectual rigor was gone, and what remained was a willingness to vent his gut impressions without subjecting them to any of the testing that characterized his scientific work on DNA." Reich should be severely chastised for this gratuitous insult to a preeminent senior scientist who has been ceaselessly pilloried for expressing the opinion that differences in intelligence among individuals and groups have a genetic basis. Perhaps Dr. Reich's politically correct condemnation of Watson is designed to deflect criticism of his own work. The Cold Springs Harbor incident recounted by Reich is just more evidence that the spirit of free scientific inquiry has its limits.

On the very last page he states: "... the findings from ancient DNA leave little solace for racist or nationalistic interpretation." Perhaps the words "Marxist" and "egalitarian" could have been most appropriately included in that statement. Equally certain is the political correctness in omitting them. Stir not the hornet's nest of scientific orthodoxy!

All the same, Dr. Reich is at the forefront of a revolution of discovery that will hopefully help liberate science from politically correct orthodoxy. As with numerous other scholarly pioneers, the specter of ridicule, ostracism or discredit in the popular press is never far away. So while deftly playing to the orthodoxy in public appearances, it is to his tremendous credit that he called it out in the first place. Dr. Reich certainly adheres to the spirit of discovery and open inquiry in science, to which his book is an able testament.