

Superior pinpoints racism in science: Naive scientists plus strategic racists

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Science has had issues with racism from its very beginning. At best, many of the early scientists had ideas that typified the racist societies of their times. At worst, they actively participated in providing justification for that racism, a habit that reached its peak in the eugenics movement of the first half of last century. But World War II made the end point of eugenics painfully obvious, causing mainstream science to re-evaluate and reject many of its racist ideas.

But as racists have become increasingly public in the early years of this century, they've once again turned to science for support—and found some scientists ready to provide it. How in the world did this happen?

Angela Saini's new book *Superior* provides not one but multiple answers to that question. They range from tracking how a rich segregationist helped keep race-focused biology on life support to a view into how naive scientists are still accepting society's ideas on race despite their lack of a biological basis. The book makes for a compelling read, but it's an especially important caution for the science-inclined, who can benefit from being forced to step back and re-examine

their assumptions on race and where they came from.

Keeping the faith

Saini is well placed to tackle this subject. She's a well established science journalist, and her earlier book, *Inferior*, tread similar ground by examining how society's assumptions about women had pervaded medicine and biology. And, as a non-white English person who can trace her ancestry to one of the country's former colonies, she has personal experience with some of the consequences of racist attitudes. The book is primarily a mix of history and a look at the current state of affairs, but Saini's personal experiences and reflections are rarely far from the surface.

The book starts with a look at the racism of the European societies that helped develop modern science, and the author traces that to its ultimate rejection in the wake of the Holocaust. Nazi Germany may have taken the ideas of eugenics to an extreme, but eugenics wasn't just an outgrowth of mainstream science—it *was* mainstream science, a fact that's harder to discern because many present-day institutions have sought to distance themselves from their pasts.

Saini describes how biologists and behavioral scientists engaged in extensive self-examination after the Holocaust and came to recognize that most of the "research" that paved the way for eugenics was simply terrible. Rife with bias, loaded with unjustified assumptions, and failing to even provide a consistent definition of race, the work absorbed the beliefs of society at large and found ways to provide them a scientific veneer that fell apart with the slightest critical examination. To give just one example, researchers measured skull sizes without either considering whether that value correlated with anything, or considering influences like childhood nutrition and health.

The mainstream scientific community appropriately rejected the

work and largely left the field behind. But, as Saini documents, there were a number of researchers outside the mainstream who were just as committed to their work in the wake of this rejection as they were before. Normally, that's a recipe for career death as funding and publishing opportunities dry up. But in this case, a wealthy segregationist stepped in, creating a foundation that kept funding researchers committed to race science and a journal (*Mankind Quarterly*) that would publish their work.

Saini talks to one of the journal's current editors, who comes across as naively mystified that science has passed him by, and that scientists no longer see the world as he still does.

But, as the book progresses, it becomes clear that he's less out of the mainstream than he thinks. In talking to younger grad students, Saini finds that they're still adopting assumptions about race that originate from society at large. When asked about it, she finds that they have no idea how to define race biologically, but persist in the conviction that it's real.

Race and modern genetics

But if it's not real, why are there so many heredity tests offering to tell us where we're from? *Superior* tackles those, too. They're based on thousands of sites scattered through the genome where people often differ from the "average" human. No single site is diagnostic; I'm of European ancestry, yet the ways I differ from average are just as likely to be found in populations native to Borneo or Bolivia. Rather than a few all-or-nothing differences, genetic indications of origin are statistical. Some differences are more likely to be inherited together in some populations. Other sites may be found in 60 percent of one population, but only 30 percent of another. Differences among populations only become apparent if you look at enough places in the genome.

And even then, it's statistical, and your assigned ancestry will vary based on the statistical model and whether you happen to be an outlier. One genetic testing service correctly pegged me as a mixture of Northern and Central European. Another that promised to be more specific highlighted a map of Europe in a way that nearly surrounded (but excluded) the countries my ancestors actually came from, and incorrectly pegged me as over 70 percent English.

Of course, as Saini notes, the present state of population genetics is a temporary snapshot of a lot of complicated and ongoing population histories. The development of agriculture upended populations throughout Europe and Asia, and it did so again separately in Africa. Multiple populations ended up in England in prehistory, and we know of Germanic, French, and Scandinavian populations that mixed in within the historic period. As the Roman empire fell apart, the Vandals started out in Central Europe, moved across Europe to Spain, and then migrated into Africa. The migrations among Native Americans are so complicated that we're struggling to understand them even with modern genetics.

(Even if the populations remained the same, the biases vary. In the US, anti-immigration fervor once focused on Southern Europeans, until groups like the Italians were later incorporated into the "white" portion of society.)

Attempting to define a specific "race" within that turbulent past is a questionable proposition. But the racist proposition is that not only are racial genetic distinctions real, but that they *matter*, making differences that are far more significant than appearance.

But not only are most of these genetic differences shared among populations, their individual impact is minuscule. Even collectively, for traits ranging from height to educational achievement, the impact of all known differences tends to be in the neighborhood of 10 percent. For more dramatic impacts,

you're left with difference that affects the sorts of things that have truly dominated human survival: diet and disease. And here, key things like lactose tolerance and malarial resistance have appeared independently in multiple populations.

What if it's real?

It's easy to understand why the idea of significant racial differences has a persistent appeal despite the lack of underlying biology. Tribalism seems to be a deeply ingrained feature of human societies, and appearance is an easy way to identify someone of your own tribe. Countless societies have been convinced of their own superiority over the centuries, and they assumed that there was something biological behind that. Saini spends some time talking with race scientists in India, who are just as committed to racist ideas as their US and European counterparts; they're just far less interested in white superiority.

None of this is to say that we couldn't eventually find some significant biological differences among populations, even if those populations don't line up very well with the traditional conceptions of race. Saini also talks to geneticist David Reich who warns that we need to be prepared to accept a finding of that sort should it occur.

But for now, biology's grounded in the present, where results of the sort haven't been reported. And the cautions that drive the consensus that formed in the wake of World War II still apply. Our biases remain deep-seated and still drive our science; it was less than a decade ago that many were still convinced there was scientific support for the idea that boys were inherently better at math, before results started identifying the social influences that drove test performance. And the damage that those biases can do when supposedly backed by the finality of science is still incredibly real.

Superior is a vital reminder of those dangers and of how science and scientists aren't always sitting passively on society's sidelines. And it plays an essential function by illuminating how "scientific" racism managed to persist through science's attempt to purge some of its own worst behavior.

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