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Lessons from History

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Anthropological genetics is an oddly liminal field—not quite anthropology, yet not quite genetics either. Anthropologists are trained to be attuned to the people they work with; without the goodwill of its objects, the profession cannot exist—but one does not have to secure the goodwill of the fruit fly, *Drosophila melanogaster*, to study its DNA haplotypes in depth. Geneticists, however, are more prestigious and better funded—and what scientist doesn't aspire to that?

Part of this liminal status of anthropological genetics can be seen in its reluctance to confront the long-standing historical relationships between anthropology and genetics. There are two reasons for this. First, a principal role for genetics in anthropology has been as a naturalistic alternative explanation for social inequalities, associated with reactionary conservative politics and anti-democratic discourses—in reference to a timeline that unites the otherwise disparate sciences of the eugenicists, the psychometricians, the segregationists, the sociobiologists, and the evolutionary psychologists. Second, even when genetics has not been tethered to pseudoexplanations of cultural phenomena, it has a surprisingly bad track record.

Let me expand on the first historical point. In a newly published textbook for the field, Michael Crawford takes minimal notice of the interplay between anthropology and genetics, simply to note that "unfortunately, until the 1950s, there were few anthropologists with adequate training in human genetics."[1] There was, however, a good reason for this: human genetics began in America as a scientistic alternative to the non-racist anthropology Franz Boas was struggling to develop.

Human genetics effectively began in America with Charles Davenport, who ran not only the genetics laboratory at Cold Spring Harbor (which is still there and highly reputable today), but the Eugenics Record Office as well (which is not). In 1911, when Boas established the separation of race and culture in *The Mind of Primitive Man*, Davenport wrote his own influential synthesis, called *Heredity in Relation to Eugenics*. Here he explained similar phenomena in a radically different

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way—in terms of the global distribution of imaginary alleles for "feeblemindedness." In fact, Davenport and his closest proto-Nazi allies (the paleontologist Henry Fairfield Osborn and the amateur naturalist Madison Grant) waged a long-standing battle against Boas and his allies for political and economic power in American social science.[2]

Davenport's work was publicly ridiculed before World War I even by British eugenicists, but that did not affect his power or stature in the American scientific community.[3] It was only in the late 1930s—after the Nazis were basing their university courses in eugenics on Madison Grant's work[4]—that the Carnegie Foundation shut down the Eugenics Record Office. Even so, when Davenport died in 1944, he was president of the American Association of Physical Anthropologists.

It's hard to imagine how the field of anthropological genetics could have missed him! They could do well to acknowledge him now, because the same brand-new textbook of anthropological genetics concludes with a favorable citation of the infamous modern racist psychologists Arthur Jensen and Philippe Rushton, assuring us that "groups differ in intelligence" and "certainly do not have equal potentials."[5]

If that is indeed anthropological genetics, it is no wonder that the field might be held in widespread suspicion, if not in outright disrepute. Maybe it's just me, but I cannot imagine voluntarily participating in a study conceived by geneticists who ultimately aim to demonstrate my innate mental inferiority to them.

Of course, one could in principle dissociate the application of genetic data in a genetic-determinist behavioral framework from a more politically benign program of human taxonomy and prehistory. But this practice has a long history as well, and again, not a particularly glorious one.

This brings us to the second historical point, the track record of genetics in reconstructing prehistory.

Global differences in the distribution of blood types had been observed by studies of soldiers in World War I, and in 1922 the young anthropologist Carleton Coon pioneered the retrieval of blood from the field as an anthropological object of study in its own right. Coon drew blood from "his people," the Rif in Morocco, to ascertain whether their racial affinities were less ambiguous from their blood types than from their head types. Indeed, over the next few decades the application of genetic data in physical anthropology principally involved the discovery of discrepancies between anatomically based racial classifications and genetically based racial classifications, and the subsequent alignment of authorities on either side of the determination of affinities. This dispute arose in the pages of *Man* in the 1930s, *Science* in the 1940s, and the *American Journal of Physical Anthropology* in the 1950s.[6] Indeed, genetic data were not even recognized as undermining the concept of race until the 1970s. And even today, there is ambivalence in the human population genetics community about the relationship between genetics and race.[7]

The point is that for such a fundamental and classical question as the basic structure of the human species, geneticists identified races when races were

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assumed to be there, identified the *absence* of races when they were assumed *not* to be there, and now send out mixed messages about it. If the highest-tech genomic data tell us both that there *are* races, and that there *aren't* races[8]—then it seems as though we must entertain some basic epistemological questions about the reliability of anthropological inferences to be drawn from this class of data. The problem in this case is actually a simple one: Race is a biocultural entity, the result of an active negotiation between natural patterns of variation and cultural perceptions of otherness. It consequently lies beyond the domain of genetics, although few geneticists are prepared to acknowledge or confront that fact.[9]

Ultimately, then, although some of the historical narratives derived from interpreting genetic data are doubtless true, and might otherwise be invisible, it is difficult to know just which ones those are. In some cases, the history of human populations is reduced and oversimplified to merely the divergence and bifurcation of populations, an act which effectively precludes deriving any robust inferences about human history. In other cases, the patterns are exceedingly subtle, or may even be statistical reifications.[10] Where they can be checked against the archaeological or anthropological record, the inferred genetical histories can be strikingly discordant[11]—just as it was with the crudest genetic data a century ago.

As if that were not problematic enough, modern anthropological genetics takes place in a newly emerging free-market era of patented genes, patented cell lines, and recreational genetic services. The bioethical issues enmeshing these, particularly when they involve indigenous peoples, are largely unresolved, and the failure to grapple with them successfully largely explains the undoing of the Human Genome Diversity Project in the 1990s.[12]

The traditional relationships between geneticists and indigenous peoples involved relying on the good will of the investigator, who could say anything to convince people to violate their taboos and give genetic specimens (most especially including promises of health benefits), which then became the scientist's property *in perpetuo*, and the specimens would then become commodities to be bartered between laboratories.[13] It is specifically this situation that is presently being called into question.[14] As *Time* magazine glibly related, in promoting the HGDP,

> On one occasion, when Cavalli-Sforza was taking blood from schoolchildren in a rural region of the Central African Republic, he was confronted by an angry farmer brandishing an ax. Recalls the scientist, "I remember him saying, 'If you take the blood of the children, I'll take yours.' He was worried that we might want to do some magic with the blood."[15]

To me, the Genographic Project is a bit creepy, for this simple reason.

Faced with the need to wrestle with bioethical, cross-cultural, and political issues in the era of voluntary informed consent and genetic entrepreneurship in order to secure federal funding, the Human Genome Diversity Project simply gave

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up and ceased to exist. Shortly thereafter, the Genographic Project appeared, with much the same goals as the HGDP, but with *private* funding. That seems almost like a deliberate end-run around those issues, hardly an encouraging situation.

We are consequently obliged now to rely on the good faith of the Genographic Project, and they have made a public gesture of going through the institutional review board (IRB) of the University of Pennsylvania, where one of their researchers, Tad Schurr, is an anthropological geneticist. Even that move backfired, however, as the *New York Times* explained:

> When Dr. Schurr was finally invited to a handful of villages in Alaska, he eagerly accepted. But by the time he reached South Naknek, a tiny native village on the Alaska Peninsula, to report his analysis of the DNA he had taken on an earlier mission, the Alaska review board had complained to his university supervisors.
>
> The consent form all volunteers must sign, the Alaska board said, should contain greater detail about the risks, including the fact that the DNA would be stored in a database linked to tribal information.[16]

Since then, the Genographic Project has been desperately trying to retain possession of genetic samples they probably should not have collected in the first place. Finally, the same *New York Times* article related that

> results have surprised some of the Alaskans who gave him their DNA. In South Naknek, Lorianne Rawson, 42, found out her DNA contradicted what she had always believed. She was not descended from the Aleuts, her test results suggested, but from their onetime enemies, the Yup'ik Eskimos.
>
> The link to the Yup'iks, Ms. Rawson said, only made her more curious. "We want them to do more research," she added, offering Dr. Schurr more relatives to be tested.[17]

This piques my own curiosity as well, since I know enough genetics to know that there is no test that can distinguish between the members of any particular group and their neighboring enemies. DNA can no more distinguish an Aleut from a Yup'ik than it can tell an Israeli from a Palestinian, a Shia from a Sunni, or a North Korean from a South Korean. Those kinds of differences are constituted independently of the structure of the gene pool. How, then, did this Alaskan woman come to think otherwise?

There are obviously many anthropological geneticists of good will, much nonracist science to be done, and many valid scientific inferences to be drawn. But we don't need more anecdotes of angry axe-wielding Africans, or Native Alaskans with newly reified and ambiguous ethnic identities, to see that the traditional relationships between the scientists and their objects must be, and indeed are being, actively renegotiated. We don't need the HGDP to reappear, this time with the ethical opacity that accompanies corporate sponsorship. What we need is the field of anthropological genetics to confront its past, reimagine its present, and invent its future.

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ENDNOTES

1. Crawford, "Foundations of Anthropological Genetics," 7.
2. Chase, *The Legacy of Malthus*; Kevles, *In the Name of Eugenics*; Barkan, *The Retreat of Scientific Racism*; Kühl, *The Nazi Connection*; Black, *War Against the Weak*.
3. Spencer and Paul, "The Failure of a Scientific Critique."
4. "Reich Opens Race Study: Halle University Course Said to be Based on American Models." *New York Times*, August 2 (1933), 6.
5. Harpending, "Anthropological Genetics: Present and Future," 464.
6. Marks, "The Legacy of Serological Studies."
7. See Koenig et al., *Revisiting Race in a Genomic Age*.
8. For data that seem to provide evidence that there are races, see Risch et al., "Categorization of Humans in Biomedical Research"; Sarich and Miele, *Race: The Reality of Human Differences*. For data that provide evidence that there aren't races, see Serre and Pääbo, "Evidence for Gradients of Human Genetic Diversity"; Madrigal and Barbujani, "Partitioning of Genetic Variation."
9. See Graves, *The Race Myth*.
10. For examples of these various historical narratives, see Wald, "Blood and Stories"; Moore, "Putting Anthropology Back Together Again"; Templeton, "Human Races."
11. MacEachern, "Genes, Tribes, and African History."
12. Pálsson, *Anthropology and the New Genetics*.
13. Anderson, "The Possession of Kuru."
14. See Marks and Harry, "Counterpoint: Blood-Money."
15. Subramanian, "The Story in Our Genes," 54.
16. Harmon, Amy. "DNA gatherers hit a snag: The tribes don't trust them. *New York Times*, December 10 (2006), 1.
17. Harmon, "DNA gatherers hit a snag."

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