

Commentary: Toward an Anthropology of Genetics

Jonathan Marks

The relationship between anthropology and genetics has been highly contested, at least since 1911, when Franz Boas and Charles Davenport both published their paradigmatic works of American science. Boas's book was *The Mind of Primitive Man*, and Davenport's was called *Heredity in Relation to Eugenics*, but both sought to elucidate the primary meaning of human diversity, and they did so in radically different ways—via culture and history, on the one hand, or germplasm and microevolution, on the other hand. The value of knowing about biological heredity and about the distribution of human alleles and genotypes has never been challenged, but over the course of the following century, it became increasingly clear that its meaning is constantly in flux.

For example, does genetic variation explain human cultural variation, or perhaps social stratification, as Charles Davenport thought? In England, the very first textbook of Mendelian genetics concluded not just that the basic principles of heredity were now known but that they explained how “permanent progress is a matter of breeding, rather than of pedagogics . . . the creature is not made but born” (Punnett 1905:60). Comparable biopolitical statements can be found in the modern pseudoscientific literature (Wade 2014). But of course, genetics is about *how* the creature is born; not that its hereditary constitution is its most important or determinative aspect.

Does genetics reveal the basic subdivisions of our species? When geneticists expected such units to be there, they found them (Boyd 1963; Snyder 1926). They abruptly stopped finding them in 1972, after decades of anthropological challenges to earlier assumptions about the basic structure of the human species and to the scientific premise that those natural subdivisions existed (Hulse 1962; Livingstone 1962; Montagu 1942, Thieme 1952; Weiner 1957).

Does genetics show that we are a distinct species from the Neanderthals? A generation ago it did. Now it shows the opposite. It even finds introgression from people called Denisovans, of whom we have scant evidence aside from the

genome of a finger bone—and consequently they are only accessible to the geneticist (Meyer et al. 2012). They are reifications of some sort, although the full extent is not very clear. Thus, we don't even know really whether Denisovans are accessible to the geneticist as photons are accessible to the physicist or as leprechauns are accessible to the Irish.

There are, of course, many other questions one can ask of genetic research. Human population genetics—the application of genetic technologies to problems of understanding human diversity—is thus a valuable site in which to examine the relationship between scientific assumptions and conclusions, particularly when the science itself is highly value laden. Genetics, like biological anthropology, legitimizes a set of origin narratives—our micro- and macroevolutionary ancestries, respectively—and consequently often has had tense relations with folk ideologies that seem to draw legitimacy from the science.

The value ladenness of this science allows us to identify an important popular fallacy—that a primary axis of modern society is science versus nonscience. Yet no one is really “anti-science”; such a person is a product of scientific paranoia. We all make decisions about what science to accept, what science to reject, and what science to ignore. Someone who believes everything said to them in the name of science would be entirely naive, possessing the very opposite of a scientific education. Indeed, the position of being a custodian of what in any other society would be considered a sacred origin narrative—who we are and where we come from—shows the subtlety of the “anti-science” position. After all, biological anthropology is obliged to navigate between the creationists, on the one hand, who don't take evolution seriously enough, and enthusiasts of fads like eugenics in the 1920s or “The Paleo Diet” today, on the other hand, who take evolution too seriously. So, who is worse: the citizen who rejects evolution or the citizen who uses evolution to rationalize a program of genocide? Both are out there and are actively constructing, imposing, and utilizing different meanings on the science; whether or not either of them

accepts the descent with modification of species—and is thus “pro-science”—may be a trivial question.

If this mental exercise shows us that meaning is not inherent in the science but is negotiated with the science—which I think it does—then we may apply the same cultural framework to look at human genetics. What the two articles in this “In Focus” show is that the interesting aspect of the science lies not in the genetic conclusions—indeed, genetic conclusions are tangential to both pieces—but in the interpenetration of culture with the science itself.

In the 1960s, when North American human geneticists targeted Brazil as a research site, they took Brazilians as scientific metaphors for primitive peoples: in Neel’s case, Paleolithic, and in Morton’s case, Neolithic human populations. In modern Brazil (and contemporary North America), genetics is ancestry, presumptively naturalized, but with three notable properties: (1) it is hidden from plain sight and thus only accessible to the geneticist; (2) it is geographically structured without necessarily being regarded as classically racial; and (3) it is not available as a public service but rather as a marketable commodity, yet it bears the cultural authority of science nevertheless.

I read these articles in the context of developing an anthropology of science—and, more specifically, an anthropology of genetics—for the modern age. Some years ago, a landmark analysis called the gene “a cultural icon” (Nelkin and Lindee 1995) with political meanings and uses. In the modern world of genomics (and postgenomics), genes participate in nationalistic and economic ventures of various sorts and are usefully understood as objects of nature/culture (Goodman et al. 2003; Marks 2013).

In some ways, genomics varies culturally (Fullwiley 2011; Taussig 2009), and in other ways, it transcends national and cultural boundaries and is the same everywhere. It isn’t simply that DNA is made up of the same four bases but also that genetics is universally recruited in the formation of identities—both personal (Brodwin 2002; Franklin 2013; Hauskeller 2004; Tutton 2004) and ethnological (Abu el-Haj 2012; Heath et al. 2004; Montoya 2007; Nelson 2008; Parfitt and Egorova 2006; TallBear 2013). This is an intellectual zone that brings biological and sociocultural anthropologists together (as well as scholars in other, cognate fields): the complex relationship between human genetics as an ostensible set of natural facts of heredity and its simultaneous and coextensive existence as a set of cultural facts of kinship.

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NOTE

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