

“Your DNA Is Our History”

Genomics, Anthropology, and the Construction of Whiteness as Property

by Jenny Reardon and Kim TallBear

During the nineteenth century, the American School of Anthropology enfolded Native peoples into their histories, claiming knowledge about and artifacts of these cultures as their rightful inheritance and property. Drawing both on the Genographic Project and the recent struggles between Arizona State University and the Havasupai Tribe over the use of Havasupai DNA, in this essay we describe how similar enfoldments continue today—despite most contemporary human scientists’ explicit rejection of hierarchical ideas of race. We seek to bring greater clarity and visibility to these constitutive links between whiteness, property, and the human sciences in order that the fields of biological anthropology and population genetics might work to move toward their stated commitments to antiracism (a goal, we argue, that the fields’ antiracism impedes). Specifically, we reflect on how these links can inform extralegal strategies to address tensions between U.S. and other indigenous peoples and genome scientists and their facilitators (ethicists, lawyers, and policy makers). We conclude by suggesting changes to scientific education and professional standards that might improve relations between indigenous peoples and those who study them, and we introduce mechanisms for networking between indigenous peoples, scholars, and policy makers concerned with expanding indigenous governance of science and technology.

What I’d like you to think about with the DNA stories we’re telling is that they are that. They are DNA stories. It’s our version as Europeans of how the world was populated, and where we all trace back to. That’s our songline. We use science to tell us about that because we don’t have the sense of direct continuity. Our ancestors didn’t pass down the stories. We’ve lost them, and we have to go out and find them. We use science, which is a European way of looking at the world to do that. You guys don’t need that. (Wells 2003)

In this remarkable excerpt from the PBS film *The Journey of Man: The Story of the Human Species* (Wells 2003),¹ Spencer Wells, population geneticist and leader of the National Geographic Society’s (NGS) Genographic Project, responds to Australian Aboriginal painter Greg Singh. Singh does not accept Wells’s suggestion that his Aboriginal ancestors trace back to Africa, insisting instead on the veracity of Aboriginal origins. Interrupting expectations, Wells does not disagree with

Singh. He does not represent the human sciences as occupying the authoritative realm of truth while relegating indigenous knowledge to the realm of culture and mere belief. Instead of this dominant epistemological hierarchy, Wells attempts to level the playing field. He represents himself as part of a people (“European” people) who, like Singh, are interested in telling stories about their origins. In a further reversal of expectations, it is Wells who is at the disadvantage. As Singh explains to him, “We know our stories. We know about creation. We know we come from here.” It is Wells and the Europeans who are still searching.

However, what at first looks like a new mode of engagement between indigenous peoples and those who wish to study them quickly reverts back to old tropes. After the scene’s end, Wells laments, “This really isn’t going very well. Tradition rarely sits well with cutting-edge science.” Aboriginal songlines may say that humans originated in Australia, but DNA analysis of the blood of Aborigines tells him a different story.² A white Land Rover is seen speeding away on a dirt road. Wells gazes out to sea: “Let’s go see if we can make history.” He is off to India. With his cutting-edge genetics, Wells is literally back in the driver’s seat, headed for new lands and new discoveries of fundamental truths, leaving Singh behind

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1. Wells is also the author of the related book *The Journey of Man: A Genetic Odyssey* (2002).

2. Also see Priscilla Wald’s essay in which she analyzes how population genetics research, including the Genographic Project, deploys “stories” in ways that are inseparable from science (Wald 2006). She discusses the *Journey of Man* film at length.

in the outback of Australia, sitting under a tree by a rock, with his old traditional beliefs.

In this scene, what began as a potentially new mode of understanding genetics—as a storytelling practice—ends by enacting an old story: in the interest of promoting “European” knowledge, moral claims to access indigenous lands and bodies get made. This time such claims are not made on the ground that European culture and practices are superior but on the grounds of justice. You have your stories, we just want ours, Wells says to Singh. In so doing, he presents genetic studies of indigenous DNA as part of what it would take for both indigenous peoples and Europeans to know their origins. In this flip of the usual narrative, it is the indigene who potentially takes away. Singh, for example, can deny his DNA, a resource without which Wells and his European people will lose their past. Through constituting this new injustice, Wells retains the old and familiar position of a European making a moral claim on the natural resources of indigenous peoples.

To date, most biological anthropologists and genome scientists who currently make claims to indigenous DNA miss these deeper histories of relations between Europeans and indigenous peoples. We suggest that this is because these histories are associated with race and racism, and most practitioners of human genetics and anthropology believe they abandoned race as an object of study and racism as a practice. Instead, they argue that their efforts will undermine biological conceptions of race and thus counteract racism. Wells and leaders at the NGS, for example, have sold the Genographic Project partially on the grounds that it will show race has no biological meaning, and thus we are all one people.³ They are not alone in making this claim. It is a common belief among human population geneticists and biological anthropologists who use genetic techniques to study human origins and evolution that if you undercut race as a biological category, you also undercut racism (Human Genome Diversity Project 1993; Reardon 2011).

However, as we demonstrate below, there is no necessary link between antiracism—that is, opposing racial categories—and antiracism.⁴ Specifically, we show how in many instances it is in the name of being against “race” that contemporary scientists continue to make claims to control Native

peoples and own their resources. Indeed, as Wells implicitly argues in the *Journey of Man*, indigenous peoples should give their DNA in order to support Europeans’ new civilizing project: the cosmopolitan antiracist world promised by genomics.⁵ While in the nineteenth century, Europeans sought to tame American wildernesses and the “savages” that inhabited them—a so-called civilizing project now generally viewed as racist—in the twenty-first century, self-proclaimed Europeans continue to make a claim to indigenous peoples and their resources, only this time they do so in the name of the civilizing project of antiracism.

In short, while biological anthropologists and geneticists commonly state desires to build an antiracist future, often they do so on conceptual and material terrains that leave intact old links between whiteness and property. Wells, for example, argues for access to “nature” (in the form of human DNA) in order that he might transform it into something of value and use: knowledge about human evolution. This enacts old understandings of Native peoples, nature, and subjectivity that position Native peoples as having no similar ability or desire to transform nature (in this case, their own natures) into value. They thus lack subjectivity, becoming mere repositories of DNA. These understandings and performances reflect a very old order of things in which whiteness figures as a rational civilizing project that creates symbolic and material value of use to all humanity. As a formation that brings good things to all, whiteness itself becomes a thing of value that should be developed and defended—in this case, Wells argues for the right to study Europeans.⁶

Below, we describe the deeper histories of these relations between whiteness, property, and the human sciences. In particular, we show how the American School of Anthropology enfolded Native peoples into their histories and claimed knowledge about and artifacts of these cultures as their rightful inheritance. Drawing both on the Genographic Project and the recent struggles between Arizona State University (ASU) and the Havasupai Tribe over the use of Havasupai DNA, we then describe how similar enfoldments continue today despite most contemporary human scientists’ explicit rejection of hierarchical ideas of race.

We seek to bring greater clarity and visibility to these constitutive links between whiteness, property, and the human sciences in order that the fields of biological anthropology

3. See, e.g., *National Geographic*, “Geographic and IBM Launch Landmark Project to Map How Humankind Populated the Planet,” press release, April 13, 2005 (<http://www-03.ibm.com/press/us/en/pressrelease/7611.wss> [accessed February 15, 2012]). Also see Rediff interview with Spencer Wells (<http://www.rediff.com/news/2002/nov/27inter.htm> [accessed February 15, 2012]).

4. Our research findings resonate with David Theo Goldberg’s recent observation that “antiracism, it turns out for the most part, is whiteness by another name, by other means, with recruitment of people of color to act as public spokespersons for the cause. . . . Antiracism is about decategorization, a gesture necessarily by the racially dominant towards those they racially suppress. Antiracism, by contrast . . . seeks to remove the condition not indirectly through the removal of the category in the name of which the repression is enacted. Rather, it seeks to remove the structure of the condition itself” (Goldberg 2009:22).

5. In making the film, Wells explicitly sought to generate support for efforts to collect DNA from indigenous peoples in order to conduct human population genetics research. Wells would go on to lead one such effort, the NGS’s Genographic Project.

6. Of course, the antiracist Wells does not understand the category “European” to be a racial category but rather a geographic one. Yet such a distinction would be lost on many, including human population geneticists. For example, Leslie Clarence Dunn, known as one of the fathers of human population genetics, is cited as arguing that geographic isolation “is the great race maker” (UNESCO 1952:33). These strong links between race and geography highlight the thin lines between antiracism and racialism and begin to suggest why antiracism rarely serves as an effective instrument of antiracism.

and population genetics might work to move toward their stated commitments to antiracism (a goal, we argue, that the fields' antiracism impedes). Specifically, we reflect on how these links can inform extralegal strategies to address tensions between U.S. and other indigenous peoples and genome scientists and their facilitators (ethicists, lawyers, and policy makers). We conclude by suggesting changes to scientific education and professional standards that might improve relations between indigenous peoples and those who study them, and we introduce mechanisms for networking between indigenous peoples, scholars, and policy makers concerned with expanding indigenous governance of science and technology.

Whiteness, Property, and Genomic Science

Whiteness as property has carried and produced a heavy legacy. It is a ghost that has haunted the political and legal domains in which claims for justice have been inadequately addressed for far too long. (Harris 1993:1791)

Connections between whiteness and property have long been recognized as central to the constitution of the American nation and its legal system. Racial theories central to the construction of the United States positioned whites as rational agents capable of intervening in and transforming nature into productive property, thus justifying the taking of Native lands (Harris 1993). In political documents, doctrines, and scientific papers, settlers from Europe represented Native peoples as existing either outside of or at an earlier point in civilization and thus lacking the moral qualities needed to advance civilization through transforming raw natural resources into things of value for humans (Declaration of Independence, 1776; Dippie 1982; Morgan 1909 [1877], 1965 [1881]). The right to constitute "modern" or "European" (to use Wells's descriptor) natural and moral orders found support in these racial ideologies that construed Native peoples as incapable of developing the modern industrial state and its productive citizen, the property-owning individual.

Thus, property and race developed close and strong links in the American context. Indeed, as Cheryl Harris argues in her groundbreaking 1993 *Harvard Law Review* article, "Whiteness as Property" (Harris 1993), whiteness and property became so strongly linked that whiteness in effect became a form of property. If whites alone could construct and possess property, then whiteness itself became a valuable thing. Indeed, Harris describes it as a "treasured property" that accords those who own it rights and privileges that the American legal system defends (Harris 1993:1713). Not surprisingly, these rights and privileges include the right to control the legal meaning of group identity, including the identities of others (e.g., blacks and Native Americans) whose racialization and subordination as "other" is necessary to solidify the exclusive parameters of whiteness. If whiteness and the property and privileges that it encloses are to be effectively defended, its

owners must also claim the right to define the others who are not white and who therefore should not access its privileges.

While in recent decades scholars have made evident these connections between whiteness and property as they play out in American law, much less is known about the relations between whiteness, property, and technoscience. Yet as technoscience, particularly the biotechnosciences, continue to rise in importance in societal development strategies, its relations to race and property will only increase in importance. We live in times where for many, the relevant "civilizing" project that shapes their lives is the development of the "knowledge society" in which knowledge is a primary source of wealth.⁷ Thus, we suggest that if we are to understand contemporary relations between race and property and their role in constituting contemporary political orders and subjectivities, then sites of knowledge production must come into our critical view.

As a hub for the production of knowledge and conceptions of race in contemporary societies, the life sciences and the genome sciences in particular promise a particularly important vista. We suggest that the often surreal interactions provoked by biological anthropologists and population geneticists attempting to gain access to Native American DNA might provide an exemplary case. In recent decades, Native American DNA has emerged as a new natural resource that Native peoples possess but that the modern subject—the self-identified European—has the desire and ability to develop into knowledge that is of value and use to all humans. As we already noted, while many biological anthropologists and human population geneticists may formally reject "race" as a legitimate scientific object, they continue to value studying and understanding whiteness (e.g., Wells's quest for European origins) and believe that a study of "redness" is a constitutive part of this project.⁸

How did this happen? How did anthropologists and later human geneticists come to understand Native cultures and then biologies as part of the proper inheritance of whites and thus that which scientists had the right to control and study? In what ways have these understandings been challenged? In what ways do they persist? Through an examination of both historical and contemporary cases, these are the questions that we seek to answer.

Constructing "Red" as the Inheritance of Whites

Legal concepts of property and anthropological concepts of human evolution may appear to have lived entirely separate

7. As the science and legal studies scholar Sheila Jasanoff explains, "knowledge has become the primary wealth of nations, displacing natural resources, and knowledgeable individuals constitute possibly the most important form of capital" (Jasanoff 2005:4).

8. Although that is not to say that all reject the reality of race. Some genetic ancestry and health disparities research is certainly racist in its study of genetic aspects of race while also aiming to be antiracist. See n. 30 for an example.

intellectual lives. However, they are joined by a common concern: inheritance. As Yael Ben-zvi (2007) notes in her important contribution to critical race theory and the history of anthropology, “In both the biological and economic sense, inheritance connects individuals or generations within particular groups so that biological and material properties are transferred from the deceased to the living members of the same group” (“Where Did Red Go?”; Ben-zvi 2007:213). Thus, the law and the human sciences confront the same fundamental question: what constitutes “members of the same group” for the purpose of understanding the transfer of properties? In law, one must determine who is a group member in order to determine who inherits (material) property. In the human sciences, the order of cause and effect is reversed. Who inherits (biological) property determines who is a group member.

As historians of science and critical race theorists document, both American law and science have historically drawn on race to order human beings into groups (Foner 1999; Harris 1993). Scholars commonly focus on the racial line between black and white that is crucial for understanding the operation of race and power in the United States. But it begs an important question: what is the place of other racialized groups in this black/white picture? In particular, why are Native Americans sorely neglected in the majority of analyses of race and power in the United States? Ben-zvi provides a revealing answer: this elision is the result of dominant nineteenth-century anthropological theories that turned Native Americans into the “vanishing ancestors of their presumably white heirs” (Ben-zvi 2007:213).

Analyzing the central works of Lewis Henry Morgan—perhaps the most influential American anthropologist of his time—Ben-zvi demonstrates that anthropological theories of cultural evolutionism positioned Native Americans in a period of human evolution that preceded and made room for whites. For Morgan, “human progress” proceeded through different “ethnic periods”: savagery, barbarism, and civilization.⁹ To understand this “progress,” he argued passionately for the need to study the “aborigines” who represent these periods and relevant subperiods.¹⁰ As Morgan explains in his last work, *Houses and House-Life of the American Aborigines*,

The progress of mankind from their primitive condition to civilization has been marked and eventful. Each great stage of progress is connected, more or less directly, with some important invention or discovery which materially influenced human progress, and inaugurated an improved condition. For these reasons the period of savagery has been divided into three subperiods, and that of barbarism also into three; the latter of which are chiefly important in their

9. For Morgan’s explanation of his theory of “ethnic periods,” see Morgan (1909 [1877]:3–18).

10. In particular, Morgan felt that the study of American aborigines, or “American Indians,” should “command as well as deserve the respect of the American people” (Morgan 1965 [1881]:254).

relation to Indian tribes. The Older Period of barbarism, which commences with the introduction of the art of pottery, and the Middle Period, which commences with the use of adobe brick in the construction of houses, and with the cultivation of maize and plants by irrigation, mark two very different and very dissimilar conditions of life. The larger portion of the Indian tribes fall within one or the other of these periods. (Morgan 1965 [1881]:xxv–xxvi)

Not only do “Indian tribes fall within one or the other of these periods,” Morgan argued that “in no other part of the earth were these two conditions of human progress [the Older Period and Middle Period] so well represented as by American Indian tribes” (Morgan 1965 [1881]:xxiv). Morgan believed that “knowledge of the culture and state of arts of life in these two periods was indispensable to understanding human progress” (Morgan 1965 [1881]:xxiv–xxv). Therefore, the human sciences could not progress without a study of the American Indian (Morgan 1965 [1881]:xxiv–xxv). Through such study, he argued, “we may recover some portion of the lost history of our own race” (Morgan 1965 [1881]:xxv).

To illustrate, Morgan describes American Indian family structures as open and inclusive, ready to admit new members (i.e., whites, but not blacks, who were out of place in Morgan’s evolutionary paradigm; Ben-zvi 2007:217). The adobe bricks that make up Indian homes are similar in shape and material to those in American homes, but without the finished, polished nature of American bricks. In these representations, white people did not violently colonize Native peoples. Instead, whites represented a more evolved form of the same people: Americans. Indeed, Morgan went further. He believed that American Indians represented all of “mankind” in an early stage of evolution. Writing in perhaps his most influential work, *Ancient Society*, he argues

Since mankind were one in origin, their career has been essentially one, running in different but uniform channels upon all continents, and very similarly in all tribes and nations of mankind down to the same status of advancement. It follows that the history and experience of the American Indian tribe represent, more or less nearly, the history of our own remote ancestors when in corresponding conditions. Forming a part of the human record, their institutions, arts, inventions and practical experience possess a high and special value reaching far beyond the Indian race itself. (Morgan 1909 [1877]:vii)

Morgan therefore urged Americans to enter “this great field and gather its abundant harvest” before the American Indian cultures “perish[ed],” lost to “the influence of American civilization” (1909 [1877]:vii).¹¹ Pace Spencer Wells, Morgan made many of Wells’s same riveting claims 130 years earlier.

11. Also see Bieder (1986) for an account of Morgan’s contributions and his study of American Indians prompted by a sense of urgency that the Indian would inevitably disappear, erasing not only Indian history but the history of the rest of mankind.

The Genographic Project and the Persistence of Nineteenth-Century Anthropological Imaginaries

Although Morgan's theories of cultural evolutionism fell from anthropological favor long ago, the idea that Native Americans and others (i.e., "Africans") represent an earlier period in human evolution and thus can help modern humans understand themselves persists in contemporary anthropological imaginaries. Today such imaginaries manifest themselves not through the study of the building blocks of homes but through the analysis of what many human scientists consider the building blocks of bodies: DNA. Genetic evolutionism has eclipsed Morgan's cultural evolutionism. A rich contemporary example of this can be found in the NGS's Genographic Project.

This self-described "landmark DNA quest to decipher our distant past" seeks to collect the DNA "of very special people living today" in order to tell the story of "the human journey" (Wells 2007:45). Genographic Project organizers have tried very hard to steer this project clear of accusations of racism and have instead presented it as an initiative that unites humans (Reardon 2009; TallBear 2007). However, careful inspection of the "our" of "our distant past" and the "very special people" who hold the secrets to this past reveals a parsing of human beings into evolutionary stages not so different from Morgan's theories of cultural evolutionism.

Let us begin with the "very special people" that the Genographic Project seeks to sample. Who are these people? Spencer Wells, human population geneticist and leader of the Project, provides the following answer.

Ideally, they would be living in the same place as their ancestors did centuries ago. They should have been relatively isolated from immigration from surrounding groups who have moved into the region recently. They also should retain some of their ancestors' ways of life, be it language, marriage patterns, or other cultural attributes. In other words, what we want are *indigenous* people. (Wells 2007:45; italics in original)

Both Morgan's aborigines and Wells's indigenous people represent similar things: "our" ancestors; human beings from whom "we" can learn important lessons about ourselves. In both cases, the "we" that constitutes the knowing subject is differentiated from the objects of study. In Morgan's case, the "we" are made up of members of "modern" society, and their objects of study are "aborigines." Wells tries very hard to avoid this hierarchical language and the racist legacies it invokes. Yet implicit, indeed explicit, in the Genographic Project is the notion that some people—namely, what the project leaders call "indigenous people"—live in "remote" places, closer to the origins of humanity. Wells does not use the now-loaded language of "savage" or "barbarous," but he does describe indigenous people as having genomes that are simpler to decipher and that leave a "clearer trail" (Wells 2007:4). This makes them different from those whose genomes evolved after

what Wells describes as "the mobility revolution" (Wells 2007: 48). It is these latter individuals—individuals whose genomes became more complicated over the course of human evolution—whose secrets are locked up in the more clear genomes of indigenous peoples. It is the journey of these individuals that the Genographic Project and genetic scientists more broadly seek to document.

In order to make this imaginary work, the Genographic Project organizers define "indigenous people" in a very particular way. As Wells explains in the passage above, "indigenous people" are "relatively isolated from immigration from surrounding groups." Although technically the Genographic Project does allow for self-identified indigenous populations to come forward and ask to be included in the study (Genographic Project 2005:12; TallBear 2007; Zhadanov et al. 2010), standard practice is that scientifically interesting populations must conform to long-standing criteria of genetic distinctiveness conventionally associated with geographic isolation.¹² To ensure that an indigenous person conforms to this criterion, organizers specify that "the participant will need to have grandparents who were members of the population in question." This, they explain, will minimize admixture and "assure that the genetic lineages we find are as representative of the ancient history of the population as possible" (Genographic Project 2005:12).¹³

12. A tribe from Massachusetts, the Seaconke Wampanoag, did come forward of their own accord to participate in the project at the very moment when the Genographic Project was encountering trouble recruiting U.S. indigenes. The Genographic Project thus received positive press for collaborating with a Native American tribe (TallBear 2007). The Genographic Project's scientists and tribal historians coauthored a scientific article published in the *American Journal of Physical Anthropology* detailing the results of sampling (Zhadanov et al. 2010). Interestingly, this article is unlikely to contribute to scientific understandings of ancient migrations to the Americas. The Seaconke Wampanoag who were sampled largely trace to European and African populations. Indeed they were shown to have no "maternal Native American lineages" and only one "Native American" paternal haplotype in an individual with known Cherokee male ancestry (Zhadanov et al. 2010:586). Instead, the article is notable for its insightful treatment of nongenetic Wampanoag history and the fact that it was coauthored by Genographic Project scientists and Wampanoag tribal members.

13. How many grandparents must be a member of the population is not further specified. However, the ideal in genetic studies of human evolution is to sample individuals with four grandparents from the same population. In Luca Cavalli-Sforza et al.'s *History and Geography of Human Genes*, aboriginal populations with "25% or more admixture" are excluded (Cavalli-Sforza, Menozzi, and Piazza 1994:24). Smaller-scale studies are even stricter, ranging from 0% alleged admixture in individuals (four endogenous grandparents; Lorenz and Smith 1994; Torroni et al. 1993b) to population admixture rates of $\leq 5\%$ (Callegari-Jacques et al. 1993; Neel 1978; Torroni et al. 1992), 8.7% (Torroni et al. 1992), and 12% (Torroni et al. 1993a). "Admixture" is calculated according to the presence in populations of haplotypes or genetic lineages that are tied to non-American geographies. Two respectable anthropological genetics texts (Crawford 1998; Relethford 2003) also completely miss discussing how populations or individuals are chosen/constituted as "American Indian" (or "Eskaleut," "Nadene," or "Amerind") for sampling. Other key articles about Native American migrations also skip discussions of criteria

These acts of construction rarely gain recognition. Genetic scientists such as Spencer Wells and Luca Cavalli-Sforza, for example, do not believe that they play any role in constructing “indigenous people”; instead, they believe that “indigenous people” and their genomes exist as real phenomena in the world that they simply sample and study. This belief, we argue, is the product of an anthropological imaginary that dates back to at least the late nineteenth century—one that posits indigenous peoples as distinct from modern humans and as representatives of an earlier stage of human evolution.

It is this same imaginary that leads human population geneticists to assume their right to study indigenous DNA. If indigenous people represent modern humans at an earlier point in evolution, then indigenous DNA is part of modern humans’ inheritance and, thus, property. This implies the further right to study that DNA. Specifically, the nineteenth-century imaginaries that animate contemporary human population genetics make it possible to imagine indigenous DNA as constitutive elements of contemporary “white” bodies and thus part of the property that those who can claim a white identity rightfully control.¹⁴ Because concepts of whiteness tie closely to ideas of modernity and rationality (Dua, Razack, and Warner 2005; Goldberg 1993; Kempf 2002; Puar 2001; Said 1979 [1978]) and then to science (Goonatilake 1998; Harding 2008; Subramaniam 2001), genetic scientists not typically considered “white” who work on projects such as the Genographic Project can partake of the privileges and power that whiteness in collusion with rationality offers up. They too can claim property rights in indigenous DNA.¹⁵

ASU versus Havasupai: Our Interests Are in Your Interest

We argue that this right to study indigenous DNA for purposes not sanctioned by indigenous peoples is clearly at issue in the recent legal dispute between the Havasupai and ASU over the use of Havasupai DNA samples. This case has been widely represented as a matter of deceitful scientists who failed to inform their research subjects about use of their samples

used to determine who constitutes “the Pima” or “the Papago” (e.g., Wallace and Torroni 1992) or “Native Americans” (Santos et al. 1999) for sampling purposes. Those who rely on data sets from older studies are especially vague in discussing their inclusion criteria for samples (e.g., Torroni et al. 1992, 1993a, 1993b). It would appear that the authors believe that group boundaries and sampling decisions are self-evident.

14. Moreover, as genetic concepts of indigeneity become normative and accepted as those that signify the truly “indigenous,” different—and often more inclusive—biological and social criteria used by indigenous peoples themselves are abstracted from view. As a result, the idea of indigenous governance and citizenship is implicitly challenged (TallBear 2013).

15. This is one of many examples in which the phenomenon of whiteness does not map easily onto “white people.” Thus, as George Lipsitz points out, “opposing whiteness is not the same thing as opposing white people” (Lipsitz 2006:viii).

(e.g., Bommersbach 2008; Shaffer 2004).¹⁶ While certainly an egregious case of failed informed consent, we contend that the problems are at once less tractable and more fundamental. The deeper structural problem is the relations between whiteness and property this case enacts—specifically, the way in which Native peoples once again become folded into the long-standing goals of “Europeans” to transform nature into useful products and to create knowledge that will be of use and benefit to all people.

At issue in this case—in which both the tribe and 52 individual members of the Havasupai Tribe sued ASU for \$50 and \$25 million, respectively, for misuse of their blood samples—is whether ASU researchers distributed DNA samples collected from members of the Havasupai Tribe in the early 1990s in a manner that violated the tribe’s informed consent rights.¹⁷ What is notable for our analysis is not that population geneticists distributed Havasupai DNA to non-ASU researchers without informed consent but that once this was pointed out, researchers still adamantly defended their right to engage in this practice.¹⁸ Most of the researchers involved justified the distribution of samples for research that did not directly relate to diabetes—the research the Havasupai explicitly approved—on the grounds that it advanced science.¹⁹ As Therese Markow, the researcher who originally collected the Havasupai DNA, explained to the independent investigators hired by ASU and the Havasupai, “Knowledge is power, and the more one knows, the better off one is from a research perspective” (Hart and Sobraske 2003:87).

Markow has described the Havasupai project as a broad one of “medical/genetics” within which the most pressing problems of Havasupai would be investigated: diabetes and schizophrenia (Dalton 2004:500; Hart and Sobraske 2003:83). She has also argued that her understanding of the research purpose broadly was to study Havasupai “behavioral and medical disorders,” and that is what they were consented for (despite missing documentation and graduate student claims

16. Also see Hart and Sobraske (2003), the lengthy investigative report commissioned by ASU, which presents an ultimately critical picture of scientists involved in the case. Dalton (2004) paints a less damning picture.

17. *Tilousi et al. v. Arizona State University et al.*, CV 2004-0115 (Ariz. Superior Ct., Coconino County). Also see *Havasupai Tribe of Havasupai Reservation v. Arizona Board of Regents*, 204 P.3d 1063 (Ariz. App. Div. 1, 2008).

18. Few dispute whether researchers at ASU distributed Havasupai DNA in a manner that moved beyond what tribal members understood would happen. What is at issue is whether ASU had gained legal informed consent to engage in this form of distribution. Resolution of this point is not imminent, as the lead researcher, Therese Markow, claims a moving company lost the relevant informed consent forms when she moved to Arizona University (Hart and Sobraske 2003:85).

19. Markow and her co-principal investigator also used data gathered from the Havasupai for diabetes-related research (as the tribe understood it) and data gathered in previous cultural anthropology studies for schizophrenia-related research that the tribe claims not to have approved. In Markow and Martin (1993), they calculate “inbreeding coefficients” for tribal members.

to the contrary). In the middle of the controversial and ongoing dispute about whether Havasupai were properly consented for anything but diabetes, Markow continued to defend research to which the Havasupai objected (i.e., research on ancient human migrations by biological anthropologists at other institutions; Hart and Sobraske 2003:87). She did so on the grounds that once such basic scientific research is published, it becomes public and serves as a foundation on which other researchers can do basic science that might benefit subjects medically in the future. For example, when researchers compared data from research subjects identified as Pima and Havasupai, they concluded that not all Native Americans are genetically alike. Such knowledge, Markow argued, can lead to a better understanding of disease within the population and “can be helpful in counseling and providing guidance to improve treatment” (Hart and Sobraske 2003:85–87, 59).²⁰

Dr. Stephen Mack, a researcher at Roche Molecular Labs, made similar assertions. In 1996 he published his University of California, Berkeley, dissertation, a population genetics study that addressed how long Native American populations had been in the Americas (Mack 1996). The thesis was based on research that used purified DNA samples (not original Havasupai specimens, but DNA collected from the cell lines made from the original specimens) received from Dr. Henry Erlich of Roche Molecular Labs in Berkeley. In using Havasupai data to this end, he argued, along with Theodosius Dobzhansky, that “nothing in biology makes sense apart from evolution” (Erlich quoting Dobzhansky 1973). In other words, while his research was not a medical study per se, it did contribute to understandings of the biological context in which such medically related studies could proceed (Hart and Sobraske 2003:78). Implicit in Mack’s assertion is that if the Havasupai wanted to understand biologically what made them more susceptible to diabetes, they would have to subject themselves to studies of human evolution and human migrations. For both Markow and Mack, despite the Havasupai’s misgivings, all the research ultimately works to further the tribal goal of understanding the biological underpinnings of diabetes.²¹

Indeed, the value of all genetic research, and the right of researchers to study Havasupai DNA in whatever way they deemed appropriate, went unquestioned by most who studied the Havasupai DNA. The report produced by the independent

investigators (known as the Hart Report) indicates that none of the researchers who received Havasupai DNA asked for documentation that the Havasupai had given their consent for the distribution of their DNA (Hart and Sobraske 2003: 72, 77, 74). Nor was any documentation of the transfer of Havasupai DNA maintained. When samples were sent to other labs or collaborators, Markow notes that it was done “with a phone call” (Hart and Sobraske 2003:82). It would appear that most simply assumed they had the right to study the Havasupai DNA.

Further, one scientist explicitly resisted the very idea that he should have to account for his use of the Havasupai samples. The Hart Report describes this scientist—the noted population geneticist from Stanford, Dr. Peter Parham—as “at best marginally cooperative.” He would not meet with investigators in person. They note, “When asked, for example, whether he had or would produce any documents concerning the samples and the work performed in his lab, Dr. Parham responded: ‘Obtaining this information would consume a lot of my time. Could you please provide an explanation of why I should expend this time and effort?’” (Hart and Sobraske 2003:71–72). Speaking through Stanford University general counsel, Parham defended his use of samples for three reasons. First, he did not receive tissue or cells that were present in the original Havasupai blood samples. Rather, he received transformed cell lines that were made by ASU, “just descendants” of cells taken from Havasupai tribal member bodies (Hart and Sobraske 2003:71). Second, the existing cell lines had no individual identifiers, and Parham received no genealogies (Hart and Sobraske 2003:72).²² For these first two reasons, Parham noted, his research with the material was exempt from IRB approval.²³

Parham’s third reason, though, is perhaps most revealing. Like Markow and Mack, he argued that it was appropriate to work with Havasupai samples because he was producing something that would be of medical value to them. In particular, the study he did reassessed the accuracy of Markow’s previous human leukocyte antigen (HLA) class I typing of Havasupai samples. This reassessment, he contended, was of indirect medical relevance because diabetes can lead to kidney failure and the need for a transplant. His study results could inform and help in the process of identifying a suitable HLA-matched kidney donor for any Havasupai who might eventually need a kidney transplant (Hart and Sobraske 2003:72).

There are indications that other geneticists may have been sent samples, but the documentary trail is unclear (Hart and Sobraske 2003:8, 70, 82). In all, three non-ASU scientists obtained possession of cell lines descended from Havasupai tis-

20. One presumes that Markow is imagining genetic counseling within the confines of medical care down the road when any of these findings have actually translated into innovations in medical care. See Manolio (2010) and Wade (2009) for arguments about the as yet unfulfilled promises of such claims and worries about to whom such innovations, when they do come, will be available or not. Charis Thompson explains that African American men are overrepresented in criminal forensic genetics databases, while wealthy whites are overrepresented in personalized medicine databases (personal communication with author, May 2011).

21. As Lewis Henry Morgan argued over a century ago, the study of Native peoples proved central to the study of human evolution. Mack and Markow merely made this argument work in the reverse direction: to understand Native peoples means understanding human evolution.

22. The investigative report, however, points out that there were identifiers—“I.D. numbers employed in Dr. Markow’s identification system” (81 tied to tribal member names in her secure records) and that these are listed in the publication (Hart and Sobraske 2003:149).

23. Markow also defends the individual privacy protections as sufficient in the Havasupai research as she only ever used group identities in her research and publications (Hart and Sobraske 2003:84).

sue specimens for human migrations research (Hammer et al. 1998; Hart and Sobraske 2003:70, 128; Karafet et al. 1997, 1999).²⁴ In addition, multiple scientists coauthored papers based on Havasupai genetic data while they were never in possession of actual cell lines, with many subsequent papers citing them (Hart and Sobraske 2003:136–139).²⁵ None obtained any direct consent from the Havasupai for these secondary uses. The Hart report demonstrates that involved scientists acted as if they owned—that is, they had the right to possess and control—the Havasupai's DNA.²⁶

Property Interest Cloaked in Color Blindness and Claims to Neutrality

When genome scientists view their science as neutral—that is, in the interest of all (including groups such as the Havasupai)—they miss this assumed property interest. When Therese Markow explained to Stephen Hart, “Knowledge is power,” presumably she meant that knowledge is power for all, but is this presumption accurate? Will, for example, the knowledge that University of Arizona population geneticist Michael Hammer claims to have produced about Bering Strait migrations using Havasupai samples—research that Markow viewed as his “obligation” to publish—empower tribes (Hart and Sobraske 2003:131, 89)?

There are indications from the courts that the answer to this question is a resounding “no” and that tribes justifiably fear that this kind of knowledge might be used against them. With claims to land and governance rights at stake, the state relies on anthropological and historical evidence to determine whether applicants meet a “socially constructed” image of the Indian (McCulloch and Wilkins 1995). Genetics is increasingly important to anthropology and the (re)construction of human history. Ben-zvi and others (e.g., Bieder 1986; Deloria 1988 [1969]) have shown the considerable influence of anthropologists historically in constituting Nativeness. There is every reason to expect that the state will avail itself of *biological* anthropological evidence in order to determine who or what is Indian.

Indeed, in the controversial Kennewick Man case, in which tribes claimed the 9,000-year-old remains for reburial and scientists claimed them for further study, the state ordered the extraction of DNA in order to determine the “cultural affiliation” of the bones. DNA amplification was unsuccessful because of bone mineralization (Kaestle 2000), but that will not always be the case. Tribes have much at stake when science

24. These included Henry Erlich of Roche Molecular Labs, Michael Hammer of the University of Arizona, and Peter Parham of Stanford.

25. These included Stephen Zegura of the University of Arizona; Tatiana Karafet of the University of Arizona and the Laboratory of Human Molecular and Evolutionary Genetics, Institute of Cytology and Genetics, Novosibirsk, Russia; and their multiple coauthors (Karafet et al. 1997, 1999).

26. Indeed, the legal regime seems to support scientists exercising a property right in samples even when informed consent is in question.

asserts intellectual authority over and alters the parameters of indigeneity. Because of lack of conclusive (scientifically mediated) physical evidence of Kennewick Man's cultural affiliation with living tribes, the remains were deposited with the Burke Museum at the University of Washington, a “court appointed neutral repository.”²⁷ Scientists were granted the right to study them.

The view that genetic knowledge of human evolution is an objective neutral good that benefits all and not a particular kind of knowledge that fits within a particular way of living and enacting the world in effect denies indigenous people such as the Havasupai the right to control their own genomic resources and identity. While, as Cheryl Harris notes, whites are granted the right to use and enjoy their reputation as “white” people, indigenous people, such as the Havasupai, would not appear to have a similar right to control the construction of their identity as it would impinge on the right—even obligation—of scientists to do research. Indeed, countervailing claims by Native Americans to a property interest in their own biological materials and history often are viewed—much as Harris describes white resistance to affirmative action—as an obstruction of “the original or current distribution of power, property, and resources [that are] the result of ‘right’ and ‘merit’” (Harris 1993:1778). In this case, the scientists argue that they had the right to study Havasupai DNA on the grounds that there was scientific merit to their research. Markow recently defended herself to the *New York Times*: “I was doing good science” (Harmon 2010). These arguments not only negate Native American claims, they also position Native peoples as acting in a “politically motivated” manner that threatens science.²⁸

Within the life sciences, these sets of ideas and positions are supported by an ideology of color blindness. As Cheryl Harris explains, by the early 1990s, many dominant social institutions had replaced the old definition of race, one that “created a false linkage between race and inferiority,” with a new “color-blind” one that “denies the real linkage between race and oppression.”²⁹ The new definition, like the old explicitly racist definition, maintains white racial domination over other races—this time by denying the “historical context of white domination and Black subordination” (Harris 1993: 1768). Color blindness does not recognize, yet simultaneously

27. See <http://www.washington.edu/burkemuseum/kman/> (accessed June 9, 2011).

28. In a similar manner, Diversity Project organizers positioned indigenous critics of their project as “politically motivated” while they continued to view themselves as neutral scientists working on behalf of all humans (Reardon 2005:113).

29. Central to the norm of color blindness is “the assertion that race is color and color does not matter” (Harris 1993:1768). We can attribute to the color-blind ideology both the racist and antiracist positions that we described earlier. Whether race is biologically real or not, it should not matter socially, i.e., it should not be used to discriminate against or in favor of any race.

supports, long-standing property regimes in favor of whiteness.³⁰

The biological sciences have similarly transformed. Today only the rare scientist would invoke biological or genetic data to make a claim about racial inferiority or superiority. Like the law, contemporary biological science holds that race and ethnicity—whether they are biologically real or not—should not matter for the purposes of ordering society or determining the rights or worth of human beings. Indeed, this has been a central claim of scientists involved in genetic ancestry research.³¹ Instead, it is commonplace to believe that if one is doing “scientific” work, then it will benefit all humans. It is not the norm to suggest that practices must be responsive to the possibility of causing social harms.³² Thus, many scientists may simply assume a right to study and control Native American DNA and maintain no practices of accountability (e.g., no records of where the Havasupai DNA was shipped), thus upholding long-standing regimes of property and whiteness.

Reconceiving Genomics and Property

On April 10, 2010 the Arizona Board of Regents (ABOR) settled out of court with Havasupai tribal members for \$700,000 (ABOR 2010), a fraction of monetary damages claimed in the original lawsuits.³³ The settlement also provided for tribal member scholarships and collaborations between ABOR and the tribe in “health, education, economic development, and engineering planning” (ABOR 2010). Perhaps the most important aspect of the settlement is that it provided

30. Harris further explains that defining race as nothing more than color “and therefore meaningless . . . is as subordinating as defining race to be scientifically determinative of inherent deficiency” (1993:1768). While the old definition of race linked it with hierarchy and notions of inferiority, “the new definition denies the real linkage between race and oppression under systematic white supremacy. Distorting and denying reality, both definitions support race subordination” (Harris 1993:1768).

31. Consider DNAPrint Genomics, a prominent DNA ancestry testing company until they declared bankruptcy in early 2009. Their popular technology, the patented AncestryByDNA test, was quickly licensed to DNA Diagnostics Center. DNAPrint asserts that the recent move to describe race as “socially constructed” is oversimplified and that there is a “genetic component of race” that can be measured by their AncestryByDNA test. But they also argue that this genetic component of race is not socially or politically relevant, i.e., a *racist* position that decries *racism*. As the company explains, “DNA has no recorded history of your political, social, personal or religious beliefs.” See “What Is Race?” (<http://www.ancestrybydna.com/welcome/faq/#q1> [accessed October 21, 2006]), now available through the internet archive at <http://web.archive.org/web/20060709021118/http://www.ancestrybydna.com/welcome/faq/#q1> (accessed February 15, 2012).

32. That said, author conversations and early ethnographic work with often younger critical scientists suggest changing attitudes toward scientific property claims in indigenous and other biological samples (e.g., TallBear’s National Science Foundation award SES-1027307, “Constituting Knowledge across Cultures of Expertise and Tradition: An Ethnographic Study of Indigenous Genome Scientists and Their Collaborators”). How the broader academic field and the law will respond to openings for ethical paradigm changes is yet to be seen.

33. See n. 15.

for the repatriation of blood samples. On April 22, 2010, a delegation of Havasupai arrived at ASU. As they sang ceremonial songs, a freezer was unlocked by a university official. The Havasupai were there to claim long stored blood samples—some from individuals now dead—for burial in the floor of the Grand Canyon, the Havasupai home (Harmon 2010; Kiefer 2010).

Because the case was settled out of court, there is no legal precedent for future cases in which researchers and institutions violate research subjects’ rights. However, the settlement is important because ABOR and the university acknowledged misconduct serious enough to award monetary damages.³⁴ The settlement could also “affect plaintiffs’ and attorneys’ views of litigation opportunities,” and it could lead researchers to work to understand and consider more thoroughly subject “perspectives” on the nature of research being performed on their biological materials (Mello and Wolf 2010:2–3).

Within Native and indigenous communities, these perspectives increasingly include those who claim more comprehensive rights to govern research activities and to have a greater say in the constitution of knowledge about their bodies, populations, and histories (Mariella et al. 2009).³⁵ In particular, invoking sovereignty discourses, indigenous peoples themselves increasingly make ownership claims on their genetic resources and their genetic heritage (Mariella et al. 2009; Mead and Ratuva 2007).³⁶ Such claims extend not only to biological samples and derived data but also to their histories that can be known in part through DNA. However, to date, these claims alone have proven largely ineffective in securing increased tribal control of samples and data. We conclude by considering why this has been the case, what this reveals about the genomic constructions of race and property, and what might constitute a more responsive and constructive approach to property in the domains of genomics and biological anthropology.

The Limits of Existing Legal and Regulatory Frameworks

In the Havasupai case, the attorneys issued six charges: breach of informed consent, infliction of emotional distress, fraud, negligence, violation of civil rights, and most importantly for our topic, “conversion” of Havasupai blood samples for the

34. Personal conversation by authors with Rebecca Tsosie, director of American Indian Legal Program, Arizona State University.

35. Also see http://www.ihs.gov/Research/index.cfm?module=hrpp_irb for an incomplete list of IRBs and tribal IRBs as well (accessed June 9, 2011).

36. The Mataatua Declaration on cultural and intellectual property rights of indigenous peoples, June 18, 1993, in *Pacific genes and life patents: Pacific indigenous experiences and analysis of the commodification and ownership of life*, Aroha Te Pareake Mead and Steven Ratuva, eds., 197–200 (Wellington: Call of the Earth Llamado de la Tierra and the United Nations University Institute of Advanced Studies, 2007). The Mataatua Declaration was passed by a plenary of delegates from Ainu (Japan), Australia, Cook Islands, Fiji, Indian, Panama, Peru, Philippines, Surinam, the United States, and Aotearoa (New Zealand).

scientists' benefit. The complaint asserts that "The Blood Samples are Plaintiffs' tangible property and Defendants' activities . . . constitute a substantial interference with plaintiffs' possession or right thereto, as well as the defendants' wrongful exercise of dominion over Plaintiffs' personal property rights in the Blood Samples." The samples are described as "unique living substances and properties" that "would provide defendants with competitive, commercial, and scientific advantages" (*Tilousi et al. v. Arizona State University et al.*, CV 2004-0115 [Ariz. Superior Ct., Coconino County, 11]). They sought a total of \$25 million in compensatory and punitive damages from ABOR, ASU, and individual scientists. In this, as in many other cases, indigenous groups failed to secure property rights to their biological samples and data derived from them. In its motion to dismiss the case, the federal district court explicitly dismissed three of the charges, including the conversion (or property rights infraction) charge.

This outcome should not surprise. Genome scientists as well as the law commonly position knowledge and even molecules as separate from the bodies of donors and therefore as not the property of donors. For example, as we noted above, the Hart Report claims Peter Parham of Stanford argued that "the cells he received no longer contained any of the cells that were present in the original blood sample, but are just descendants" (Hart and Sobraske 2003:71). Therefore, Parham concluded that he was free to use the samples as he pleased. In *Moore v. Regents of California* (1990), the California Supreme Court similarly argued that once tissues leave an individual, the individual does not retain property rights.³⁷ Although biological anthropologists' and population geneticists' uses and claims about DNA have been allowed, when non-scientists such as tribes or individual research subjects assert claims and the right to control DNA extracted from their bodies, these claims are disallowed. In the Havasupai case, connections are severed between blood cells collected from indigenous people and the cell lines made from them.

We argue that this is because there is a much deeper property issue at play, the one our paper describes: the property of whiteness and the role genomics plays in maintenance of this form of property. As exhibited by the exchange between Spencer Wells and the Aboriginal artist in *The Journey of Man*, both scientists and indigenous peoples make claims to narrate history and determine identity. However, while indigenous peoples explicitly assert their right to narrate their own histories and identities, Euro-American nation-states and scientists usually need not do so because these histories and identities are recognized and upheld in dominant systems of law and science. As Harris and Ben-zvi show, the United States

sets and enforces the parameters of whiteness by drawing on legal and scientific discourses of property and ownership that are pervasive but not officially recognized.

In short, Euro-American law and science operate within and act to enforce dominant social formations. Further, power inequities exist between these formations and indigenous peoples. As a result, indigenous peoples' efforts to reclaim rights to their resources and identities through dominant legal and regulatory mechanisms are likely to continue to fail. These mechanisms are mediated at every turn by power relations shaped by histories of racism and colonialism, and it is these relations that must be addressed if we are to recognize and respond to the problems created by the constitution of whiteness as property by both the law and the life sciences.

Intercultural Justice

Although human genetic variation language and practices regularly ignore the already social and political nature of research, there are ideas brewing in critical research communities that outline how the future of anthropological and genomic research and the power relations between those who study and those who are studied can be different. Of these, we believe most promising are those that are not free of state authority but rather combine the pragmatic advantages of tribal and indigenous regulation with efforts to transform our philosophical and ethical landscapes.

American Indian law scholar Rebecca Tsosie proposes shifting the basic theoretical and legal framework within which we evaluate indigenous and scientific claims to one guided by a framework of indigenous genetic resources. Specifically, Tsosie calls for the development of "intercultural justice." Such a framework would entail a "restructuring [of] the legal relationships among Native nations and the United States and its non-Indian citizens to alleviate the historical and contemporary grievances and harms that continue to affect Native communities" (Tsosie 2007:498). Such a framework would draw on tribal and international law to better protect "intergroup equality and fundamental human rights" (2007:397). As Tsosie explains, Euro-American values of property and privacy see all resources as capable of being owned, "efficiently" used, exploited, and therefore transferable to ensure their more productive use (Tsosie 2007:397). Many indigenous groups, on the other hand, understand property to be collective or communal in nature, believe that these rights are coupled with responsibilities to protect the resource, and recognize that property can have spiritual value and should not threaten group privacy (Tsosie 2007:397–398). An intercultural framework would not only account for the historical exploitation of indigenous peoples as research subjects, but it would also consider and address these differences in approaches to property.

Technically, consideration of these differences should already be ensured by tribal rights of self-determination. However, when challenged, the enforcement of tribal sovereignty

37. *Moore v. Regents of California*, 51 Cal. 3d 120 (1990). However, the recent *Association for Molecular Pathology v. USPTO* decision in which U.S. District Court for the Southern District of New York declared invalid some of the patents of Myriad Genetics related to the breast cancer susceptibility gene 1 and 2 indicates that the Moore decision is under reconsideration. See Conley and Vorhaus (2010) for a description of this decision.

falls to mediation in state and federal courts, where it is adjudicated by non-Natives and thus non-Native cultural conceptions, values, and law. Tsosie reminds us that tribal law and institutions—such as tribal institutional review boards (IRBs)—are better positioned to respond effectively to tribal values about research and knowledge. Thus, mainstream collaboration with tribal court systems and the development of tribal IRBs can provide a more effective governance structure for overseeing knowledge production that is not damaging to tribal interests (Tsosie 2007:408–409).

Indigenous Control of Biological Specimens

In recent years, tribes and First Nations have put forward promising mechanisms for direct tribal control of biological samples, although they are not without enforcement challenges. The Alaska Area Specimen Bank is Alaska Native controlled. Located in Anchorage on the Alaska Native Health Campus, the bank is managed by the Alaska Native Tribal Health Consortium (ANTHC). Nine tribal health organizations make up the ANTHC. During the last 50 years of biomedical research, tribal people served by these health organizations have contributed nearly a half million specimens to the bank (CDC 2009). To access specimens, investigators must present research plans in communities whose samples they want to access. After securing community approval for new research, the Alaska area Indian Health Service (IHS) IRB must also grant its consent for research on bank specimens (Terry Powell, “Genomics, Tribes, and Indigenous Peoples” workshop 2008).³⁸ The bank is housed in a Centers for Disease Control (CDC) facility as part of a longtime cooperative research arrangement. Together, tribal health leaders and the CDC developed bank policies and procedures to maximize health benefits to Alaska Natives from any research conducted with samples while protecting their privacy (CDC 2009).

A second mechanism for tribal control of biological samples is the DNA on loan concept developed by geneticist Laura Arbour and Canadian Institutes of Health Research (CIHR) official Doris Cook (Arbour and Cook 2006). “DNA on loan” means simply that a researcher is considered only a temporary steward of blood and tissues he/she accepts for research. The community or individual retains ownership and control over

the future handling and uses of the samples (Arbour and Cook 2006:155; Couzin-Frankel 2010:1218). The researcher cannot conduct secondary research on the samples without first securing consent for the new research. Anonymized samples, too, are retained as the property of community and individual donors. As long as written consent is obtained stipulating that the samples are “on loan,” legal adherence by researchers is required. This model encourages researchers to maintain regular communication and ongoing relationships with communities if they want to make use of samples as new questions and technologies of investigation arise. This is opposed to the “helicopter research” that indigenous peoples lament in which researchers drop in for samples and then leave, never to be heard from again. The DNA on loan concept is the default property arrangement promoted by the CIHR in their “Guidelines for Health Research Involving Aboriginal People.”³⁹

Changing the Cultures of Genomics and Property

These and other promising legal models are being investigated by others. However, we contend that for legal institutions to undertake such change, scientific institutions will have to adopt more inclusive cultural frameworks in their governance of genomic and other research. The work cannot be left only to tribal IRBs and to the courts.

In collaboration with an interdisciplinary group of scholars,⁴⁰ we have suggested the need to develop an international research network and clearing house that could do some or all of the following to facilitate the creation and adoption of more “intercultural” frameworks.⁴¹ Ideas include promoting both indigenous and international governance of genomic research by using the United Nations Declaration of the Rights of Indigenous Peoples as a baseline governance principle for governance of genomic research (United Nations 2007).⁴² Our group also suggests the international sharing of model codes and contracts,⁴³ some crafted for use in the United States but revised for potential use among non-U.S. indigenes.⁴⁴ We also think it is important to highlight the work of critical scientists who are developing new approaches to sampling and genetic resource governance such as the DNA on loan concept and

39. See <http://www.cihr-irsc.gc.ca/e/29134.html> (accessed June 9, 2011).

40. See n. 38 for names of collaborating scholars.

41. Genomics, Governance, and Indigenous Peoples Workshop, Tempe, Arizona State University College Law, November 6–7, 2008 (<http://cnr.berkeley.edu/tallbear/workshop/index.html> [accessed June 9, 2011]). For a description of this workshop, see <http://cnr.berkeley.edu/tallbear/workshop/participants.html> (accessed June 9, 2011).

42. Article 31 of this declaration specifies indigenous peoples’ right to control and protect various cultural resources and “human and genetic resources” (United Nations 2007).

43. See American Indian Law Center (1999) and Indigenous Peoples Council on Biocolonialism (2000) for such models.

44. See <http://indigenousgenomicsgovernance.org/> (accessed June 9, 2011).

38. The workshop funded by the National Science Foundation and hosted by ASU’s law school and its American Indian Policy Institute, November 6–7, 2008, consisted of conversations and strategizing about indigenous genomics and representation, sovereignty, and property. Participants in addition to the authors included legal scholars and practitioners Philip (Sam) Deloria (American Indian College Fund), Nadja Kanellopoulou (Oxford), Pilar Ossorio (Wisconsin), Brett Lee Shelton, and Rebecca Tsosie (ASU Law); science studies scholars Paul Oldham and Brian Wynne (Lancaster University, UK); geneticists Laura Arbour (University of British Columbia) and Nanibaa’ Garrison (Stanford); and Native American IRB expert Terry Powell (Alaska Area Indian Health Service). The workshop was the first in a series of meetings and related projects that will explore opportunities for expanding indigenous governance of genomic research.

the tribally controlled biobank. In particular, we want to call attention to emerging research in which scientists are rethinking their research questions such that they reflect not only a “European” view of historical events (including genomic events) and values about which knowledge is important to produce but also which address a broader array of standpoints, thus resulting in a broader array of “truths.”⁴⁵

Another avenue of change is supporting educational and advocacy initiatives with national and international scientific associations in which changes are suggested to professional ethics guidelines and curricula. This can make disciplines more responsive in their research and teaching to differing concepts of property and relationships to knowledge. Federal funding agencies can also be targeted. We take inspiration from the CIHR guidelines that are “contractual” and “voluntarily assumed by the researcher in return for the funding provided by CIHR.” Among other directives, the guidelines instruct researchers to respect not only aboriginal “worldviews” as those pertain to notions of collectivism and sacredness of knowledge and specimens but also to respect aboriginal jurisdiction over research, precisely the collaborative move that Tsosie calls for.⁴⁶

Supporting and creating these (inter)national and intercultural networks and initiatives can help facilitate changing the culture of human genomics and biological anthropology such that it is the norm to recognize and respond to the power relations at play in these vital areas of research. It is through making these changes that we may begin to address the “heavy legacy” of whiteness as a form of property that both law and science have inherited and move the fields of biological anthropology and genetics from antiracial to antiracist futures.

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45. We are currently collaborating with a biological anthropologist colleague to plan a critical sampling practices workshop in which a select group of biological anthropologists and other genome scientists, social scientists, and genome policy experts working in different parts of the world will come together to engage in a facilitated dialogue. The goal will be to share, document, and strategize about ways of researching that engage race concepts more critically and that respond better to indigenous priorities and challenges.
46. See <http://www.cihr-irsc.gc.ca/e/29134.html#4.13> (accessed June 9, 2011).
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