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Shades of Gray: Skeletal Analysis and the Repatriation Process

ARION T. MAYES

INTRODUCTION

Negotiations over archaeological human remains have been complicated interactions spanning centuries of attempts to resolve differences of opinion with regard to the investigation, ownership, and disposition of early American Indian burials. Guilt, fear, power, politics, legitimacy, science, religion, and denial—all of these elements commonly have played a role and are integral to the ongoing debate regarding the repatriation of Native American burials and associated funerary objects. Scientists and tribal groups have argued the issue for almost two decades, gradually reaching some common ground but not without major tension that, at times, is of explosive proportion. The smoke, however, appears to be clearing; a newfound patience and understanding on both sides has given rise recently to many productive exchanges, and, whether or not the scientists and the tribal groups are totally comfortable, this increasing tolerance has yielded mutual growth. Both camps are discovering that their passionately fought debate fired by deeply held beliefs—whether scientific or religious—is no longer an issue of black or white but is better defined by shades of gray.

The Native American Graves Protection and Repatriation Act (NAGPRA) (PL 101-601; 25 U.S.C. 3001 et seq.) became law on 16 November 1990 in response to national concern regarding the handling of Native American archaeological remains. Today, a generation of anthropologists has never operated without NAGPRA and related policies. Yet a generation later, it often seems that neither the tribal nor the scientific communities have taken true advantage of the extensive opportunities available to them through this twenty-year-old piece of legislation. Scientists and Native American communities have had to learn not only how to negotiate the repatriation process but also how to develop a gradual understanding of each other, all the while

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merely skimming the surface of the supportive relationship that could be developed by means of the NAGPRA constructs. Improving collaboration is evident, though; many tribal groups currently employ anthropologists and archaeologists in an effort to preserve and protect their ancestral history. However, in order to tackle current issues such as the environmental impact on population health and the alarmingly rising rates of type 2 diabetes and coronary heart disease (CHD) among Native American populations, as well as other disease processes, a greater understanding of what the biological data can provide—and possibly a different perspective—is needed. New discussions are taking place, but complicating hopes of resolution is the continued conflict over culturally unidentifiable human remains (CUHR)—a fight that may push what little common ground we have achieved out from under us. The scientific and tribal communities must investigate what positive contributions each can make to the other, as we are forever bound to one another through our convergent histories.

THE LAW

NAGPRA states that “each Federal agency and each museum which has possession or control over holdings or collections of Native American human remains and associated funerary objects shall compile an inventory of such items and, to the extent possible based on information possessed by such museum or Federal agency, identify the geographical and cultural affiliation of such item.” Items for determining cultural affiliation by tribes and federal agencies alike include “geographical, kinship, biological, archaeology, anthropological, linguistic, folkloric, oral traditional, historical or other relevant information or expert opinion.”¹

The often-heard argument that NAGPRA was written to benefit only tribal groups is an inappropriate approach. The law was written as it was intended, to support the repatriation movement. As NAGPRA indicates, it does not discard anthropology but, instead, encompasses it, giving the anthropological approach a defining voice in determining cultural affiliation of precontact populations and allowing for an area of commonality between tribal groups and the scientific community. Additionally, NAGPRA offers built-in flexibility for cultural diversity between tribal groups. For instance, no pan-Indian belief exists (or ever existed) for handling human remains.² Each Native American culture and nation has differing beliefs as to the treatment of human remains. On one end of the spectrum are those who adamantly oppose any kind of study of human remains, and at the other end are a handful of groups that are open to all types of investigation. Others fall somewhere in between, from allowing scientific investigations that do not include invasive procedures such as DNA analysis to hesitating to accept the return of remains based on personal beliefs and the history by which the remains were acquired, requesting instead that they remain permanently curated with the institutions that acquired them.³ Through the years, many groups have actually changed their positions while seeking answers to questions regarding their history.⁴ This flexibility within the law allows for a case-by-case determination.

HOW WE GOT THERE

Although there are inherent problems in NAGPRA, a framework within which all parties involved could work was set into place upon its implementation. Interestingly, many within the scientific community acted as if the law came out of nowhere, as if one day certain arguments were made by special-interest groups and slipped through unbeknownst to scientists. The reality is that Native Americans have voiced their objections to the moving of human remains and burial goods for generations. The 1960s marked a tumultuous era in American history and, in keeping with the political climate of the times, the 1960s also brought us the American Indian Movement (AIM). The AIM members, in terms of the inception of repatriation, attempted to regain control over Native American resources, including human remains and religious items being sold on the black market nationally and internationally.⁵ It is clear that the basis of NAGPRA and its eventual implementation in 1990 was a direct result of several groups that were vocal about the issues of Native American rights, such as AIM, the International Indian Treaty Council, and American Indians Against Desecration, and their collective influence on Native American people for cultural empowerment at a grassroots level.⁶

The 1970s and 1980s saw Native American groups working to change laws in order to protect Native American cemeteries and burial goods and to raise the awareness of universities and museums regarding the effects on Native American communities when skeletal remains and material culture have been removed, as well as objecting to curatorial processes.⁷ Often, these conscience-raising efforts were carried out in an overt manner. However, they succeeded in attracting the attention of politicians, journalists, and the general public.⁸ The National Museum of Natural History has had a policy regarding the return of known individuals to their descendants, upon request, since the 1970s.⁹

With the onset of the 1980s, the ripple effect from previous decades continued. A growing number of individuals of Native American descent continued to enter professions such as law in order to advance the repatriation cause. This two-pronged approach of Native American attorneys and activists allowed for moderate groups to enter into the negotiations seeking compromise between the two camps as a means to an end. The tactic proved successful, and in 1989 Congress passed the National Museum of the American Indian Act (PL 101-185) specifically intended to house the collections at the Smithsonian Institution in Washington, D.C. Then, in 1990, NAGPRA was enacted for all federally funded collections in the United States.

Although private collections already in existence have not been affected directly, laws such as the Antiquities Act of 1906 (PL 59-209, 34 Stat. 225; 16 U.S.C. 432-433) and the National Historic Preservation Act of 1966 (PL 89-665; 16 U.S.C. 470 et seq.) were implemented in order to ensure the protection of sites, raising the stakes for illegal trafficking in artifacts and pot hunting to federally punishable offenses. As a whole, Native Americans and anthropologists hailed these policies as a victory.

BAD COMPANY

In contrast to the past, the scientific community's current philosophy toward working with human subjects of any kind is a conservative one. Undoubtedly, some of our predecessors in anthropology acted inappropriately by today's standards; you cannot take people out of their time, but you do not have to excuse previous actions either. Historical accounts of the acquisitions of some skeletal collections now housed in museums are, admittedly, horrific. Among them is an account of an incident during the American Civil War that speaks volumes: "after U.S. soldiers and Kansas settlers had massacred a party of Pawnee men who had been recently discharged from the U.S. army, a Fort Harker surgeon had collected some of the victims' skulls in compliance with army policy and shipped them to the Army Medical Museum for craniometric study."¹⁰ Often, such stories overshadow the true intent of our work and the positive effects it can have. Anthropologists are all too often blamed for the actions of others—guilt by association. At the same time, Native Americans' perception of our denial of any wrongdoing in the past is possibly how we arrived at this contentious point in our histories. In 1995, the remains of the Pawnee soldiers were given an official veteran memorial service by the US Army before being repatriated to the tribe.¹¹

AS INTERPRETED BY

To assume that repatriation issues can be settled with a blanket policy is questionable. Tribes, as well as museums, have come to this realization as "during the last nineteen years it has become clear that repatriation is not a monolithic issue, even where the cultural concerns of a single tribe are considered." Each entity, whether it is a tribal government, museum, or university, has its own interpretation of repatriation laws. The Zuni, for example, have taken a successful yet flexible approach to tribal repatriation policy. "The rational and the diverse approaches employed by the Pueblo of Zuni demonstrate why the Zuni Tribe seeks a case-by-case resolution of repatriation issues."¹² Using certain principles, the Zuni have been retrieving items of cultural and religious significance, such as the Ahayu:da (Zuni War Gods), from museums and private collections—and began doing so long before the implementation of NAGPRA.

Three basic principles were articulated: (1) the Ahayu:da are communally owned; (2) no one has the authority to remove them from their shrines; therefore, any Ahayu:da removed from its shrine has been stolen or illegally removed; and (3) the Ahayu:da need to be returned to their proper place in the ongoing Zuni religion. *Anthropological research showed that these principles have a long historical continuity.* Their expression in modern legal terms was not simply a recent conceptualization.¹³

The Zuni Pueblo have utilized anthropologists as intellectual resources to argue their position with repatriation.¹⁴ Ferguson points out that the long

negotiation and decision-making process that museums often go through may be frustrating at times. But he suggests that this period can be used advantageously in identifying concerns and the manner and agencies by which to expedite the process.¹⁵ As for the Zuni Pueblo's policy regarding human remains, their archaeology program is structured upon principles that, significantly, were written in consultation with the tribal council as well as religious leaders. The policy clearly states that human remains should not be disturbed.¹⁶ The Zuni had the forethought to include provisions for land development in their guideline—a point of note considering that this same issue has arisen over the years amongst the tribes in terms of development of tribal lands. In the Zuni case, “graves threatened by development should be excavated by professional archaeologists, and the human remains and associated grave goods should be reburied as close as possible to their original locations. The Zuni Tribe [has] allowed non-destructive osteological analysis and archaeological study of the grave goods before reburial.”¹⁷

As for remains already being curated, some common beliefs do arise that were implemented by many institutions even before NAGPRA was passed, such as removing remains of Native Americans from public display and treating them with care and respect. Additionally, the Zuni believe that these remains have already been desecrated, should stay in the care of the museum or institution, and should be limited to nondestructive analyses. The Zuni Tribe understands that this is their policy and does not expect other tribes to share their beliefs, although it has become clear that many do.¹⁸

SKELETAL BIOLOGY AND REPATRIATION

Biological anthropologists who specialize in skeletal anatomy and bioarchaeology have had only sporadic success since NAGPRA was enacted in gaining the interest and trust of the living descendant communities with whom they work. Although this statement might spark disagreement with some anthropologists who pride themselves on the strides they have made among Native Americans, the reality is that there have always been individuals within the scientific community who have successfully worked with descendant groups.¹⁹ Although the implementation of NAGPRA marked a turning point in repatriation history, it had little if any effect on the existing relationships between tribes and archaeologists and skeletal biologists. Scientists who had already built positive relationships merely stepped to the forefront following its implementation. But why did others not follow more readily? As anthropologists, we know that human behavior dictates that trust must be earned, and that the social complexities involved in building relationships take patience and perseverance on both sides. For those up to the challenge, the results were and are encouraging.

Minority communities have taken advantage of and even embraced other biological and social sciences when studying current problems, historical roots, and logical approaches for improving population health—physical and psychosocial. In anthropology, human biology has been successful in this arena.²⁰ Many studies have revealed that long-term contact and cooperation with indigenous communities contribute to our understanding of regional

population adaptation and health.²¹ A thirty-four-year study about obesity rates of a Zapotec community from rural Oaxaca, Mexico, for example, documented socioeconomic changes and their biological manifestations. Genetically, this community is considered somewhat isolated. The percentage of head-of-household farmers dropped from 90 percent to 30 percent between 1978 and 2000, although it is still considered an agricultural community. Processed foods began to supplement traditional diets over time but not as drastically as in other populations. One increasingly popular form does stand out in terms of volume consumed: high-sugar soft drinks. In terms of growth and development, nutritional levels have been positively affected, with adolescents becoming taller, heavier, and developing a higher body mass index over the decades. Interestingly, obesity appears to be an adult-onset problem; evidence shows the adult Zapotec population to be dramatically heavier now than at the beginning of the study. The probable culprit is decreased adult activity, possibly corresponding with a reduction in agriculture.²²

A recent study of great significance revealed that African American women of the Chesapeake Bay region have high rates of aggressive, early onset breast cancer. The pattern suggests that a better understanding of populations contributing to the region's genetic heritage is needed.²³ This study examined historical records pertaining to the exportation from West Africa, and the importation to the United States, of enslaved Africans. It was determined that the region of Africa, and macroethnic population, with the largest contribution (38%) to the Chesapeake Bay African American community descended from the West African Bight of Bonny. Further investigation determined that populations in the Bight of Bonny also have high rates of breast cancer. The study's author was able to focus on "actual microethnic groups in Africa whose ancestral presence in the Chesapeake Bay region may now contribute to the genetic structure and disease profile of current residents (in the United States and in West Africa)."²⁴ Here, an understanding of biological history has modern applications.

Researchers in the environmental health fields have recognized that the interdisciplinary approach of anthropology, using culture and biology, is a positive framework from within which to work.²⁵ This framework enables the supplementation of information in the recent and distant past. Anthropology has legitimate information to impart to tribal groups and the general public. It is for this reason that those from Native American communities who have stepped into the anthropological arena often find themselves permanently associated with the discipline or repatriation process. Many of those who become anthropologists can use scientific approaches in conjunction with oral history and tribal/family written documentation to tell their own ancestral history. This strong combination is an important level of cultural and self-empowerment, the application of which is a powerful tool enabling a more holistic approach. Admittedly, most histories have some biases or realistic gaps in information through time, which, in terms of large temporal spans, can lead to an eventual loss of information. It is here, in these missing chapters, that skeletal biology can be forthcoming of new information and aid in the clarification of existing knowledge.

The battle over material culture has long been fought. But for many in the Native American community, implications as to the information culled from the biology (human remains) are not fully understood. Educating others about the value of osteological analyses can only have positive results, and “in terms of potential contributions to archaeology, history, and the biological sciences, human skeletons are remarkable archives of past events, activity patterns and evolutionary processes.”²⁶ Osteological analyses have the capacity to contribute to a better understanding of disease and its relationship to cultural change. Such studies also serve to understand adaptation and relationships between local and global populations better. In terms of the NAGPRA law, skeletal analyses can often help in distinguishing one population from another and ensure that remains are not repatriated to the wrong group(s). This is a mistake with which no one is comfortable.

APPLYING BIOLOGICAL HISTORIES TO CURRENT ISSUES

Why is there a continuous flow of scientists studying the same collections? This question is often asked. The answer is because theories change throughout time as hypotheses are tested and either supported or rejected. Many technological advances have allowed for more accurate data collection and analyses. It has been a little more than two decades since anthropologists started conducting mtDNA (mitochondrial DNA) analysis from archaeological bone samples and far less time since it was considered standard methodology; as “this research did not become feasible until 1986 when the polymerase chain reaction (PCR) technique for replicating DNA, the molecule that contains each person’s genetic code, was developed.”²⁷ Genetics is a rapidly expanding technology that can inform researchers more about an individual or population than ever thought imaginable. Although genetic analysis is informative, it is also very expensive, labor intensive, and time consuming, and, if the bone does not maintain its overall integrity, results will be inconclusive. It is for this reason that utilizing different testing methods in comparison to one another can often be of great importance in determining confidence levels. Because of DNA analysis and other new techniques, the scientific community has changed not only the questions it asks but also the manner in which it seeks to find answers.

Approximately three hundred researchers a year visit the Smithsonian Institution to conduct biomedical research on its human skeletal collections. Whereby “their research has contributed to a greater understanding of the anatomy associated with severe biomedical problems, including chronic back pain, rheumatoid arthritis, various types of infectious diseases, and surgical repair of congenital defects.”²⁸ For example, in the case of rheumatoid diseases, there are early bony changes to the joint surface that cannot be readily observed—even through radiographic analysis—until an advanced stage. It has been noted that by examining the skeletal manifestations of these diseases on a macroscopic level using archaeological collections, “an entire bony joint can be examined three-dimensionally.” Studies on the early stages of this disease have added to our understanding and may, eventually,

lead to an “early diagnosis and treatment of living peoples suffering from rheumatoid arthritis.”²⁹

Another area of focus for many researchers is that of diet and resulting population health. Determining the subsistence economies of precontact populations has real implications for the living descendants. This is how many “researchers have used skeletal data to explore such fundamental research questions as the origins of agriculture and the impact of European conquest upon Native Americans.”³⁰ With the decline of Native American health, particularly the high rate of diabetes in present populations, a close examination of the past may shed new light on present-day problems.³¹

Understanding causal relationships between multiple disease processes is important for early identification and treatment. It also allows us to determine what models may be the most beneficial. More recently, a pattern of association has been documented between periodontal disease (PD) and CHD. Periodontal disease is an infection that causes an inflammation of the soft-tissue gums and extends into the alveolar bone that anchors the teeth in the jaws.³² Individuals with PD have a higher likelihood of developing CHD. This is important on three levels: first, studies have shown that inflammation associated with PD may be a contributing factor to the onset of CHD.³³ Second, the onset of CHD often takes place without any outwardly visible signs. Identifying PD as a marker allows a dentist to refer a patient to his or her general practitioner for examination, thereby aiding in early identification of CHD. Third, in archaeological skeletal populations CHD is not a disease process that can be directly identified and measured. Researchers have long since understood that severe periodontitis was indicative of systemic stress.³⁴ This new information from clinical studies allows for a different approach to new investigations and a reevaluation of previous ones. The documentation of degree and frequency of bony changes caused by infection of the alveolar region may allow us to identify patterns of potential frequencies of CHD in the past. Additionally, full skeletal analyses will document other disease processes that may be related, such as diet and lifestyle. If dietary changes in past populations indicate dramatic changes in oral health, and moderate to severe PD is a direct contributor to CHD, then osteological studies may at last have the ability to make realistic assessments of the frequency of cardiovascular disease in antiquity based on physical evidence. Together with the archaeology, this will allow for a biocultural perspective by which to compare to modern groups.

A pattern similar to the probable correlation of PD and CHD has also been observed in relation to PD and diabetes. Diabetes, a modern plague on Indian reservations, affects Native American populations in all regions with “30% of Indians in the United States d[ying] of complications directly related to diabetes.”³⁵ It has been shown that individuals with severe PD have been afflicted with diabetes for a longer duration and may be older. One study carried out on the Gila River Indian Community of Arizona, whose inhabitants are Pima or closely related Tohono O’odham Indians, found a correlation between PD and CHD and type 2 diabetes.³⁶ Here individuals with severe PD had notably higher death rates due to CHD and diabetic

nephropathy (kidney failure) than those with mild periodontal inflammation. Additionally, there was a negative age correlation, as the number of deaths was higher in younger individuals. Periodontal disease and CHD have similar characteristics, biologically and environmentally, that are not necessarily causal. However, the mortality rate among individuals that had diabetes and CHD—who also had little to no PD—was zero. This indicates that the correlation among all three conditions is indirect, giving greater weight to other studies that have emphasized the direct relationship between CHD and PD.³⁷ These specific factors can be addressed when carrying out osteological analyses.

The archaeological sites of Illinois Bluff consist of burial mounds overlooking the Illinois River. The population they represent was a Late Woodland (AD 300–AD 800) agricultural community. This region progressed rapidly toward agriculture, with the archaeological and biological evidence indicating a heavy exploitation of maize agriculture.³⁸ Maize is a high-sugar (high-carbohydrate) plant. The heavy reliance on this subsistence type, despite a wide variety of plants and animals available, is reflected in the dental pathology. Thirteen percent of the teeth present during osteological analysis were lost antemortem. Severe periodontal abscessing, in which teeth are lost due to periodontitis, was observed, with 35 percent of the individuals having at least one abscess. From this group, 59 percent had three or more abscesses, indicative of systemic stress. The high rates of tooth loss and abscessing is attributed to the diet, but, given what we now know, it would seem that this cultural change in a primary resource affected the individual beyond oral infections and may have caused greater systemic stress.³⁹ A biobehavioral study will reveal further information.

Documentation of past behaviors, their effect on the biology of a person or population, and the biocultural continuity up to the present may add valuable evidence in terms of environmental and health policies. For example, exposure to toxins is not a modern phenomenon. However, the degree and type could change over time. Similarly, evidence of significant and even rapid change to population health and behaviors would be beneficial for legal negotiations in terms of land rights and environmental impact to tribal lands and peoples.⁴⁰ Such evidence in some cases could arise from comparisons of modern peoples to their ancestors through skeletal analyses. In terms of developing long-term environmental protection plans for some communities, this type of information could serve as a powerful resource.

Policy makers have frequently done a disservice to Native American communities and the discipline of anthropology. For example, the US federal government (mis)used, albeit unofficially, different anthropological theories, or camps to support such historical events as the westward expansion and displacement of American Indians.⁴¹ Analysis of skeletal remains provides an important investigative tool regarding the biological health of Native American populations over time. It is an alternate tool that we hope will be embraced by tribal groups and may aid in future policy design. As anthropologists we should be able to explain to descendant communities why this information is important, and what it means in terms of population health in

antiquity and its implications in the present. Native Americans have long been made to feel like scientific specimens and, therefore, appropriately respond with reticence when approached. As tribes begin to feel more secure in their role in the repatriation process, the haste to rebury remains without any type of analysis may slow, particularly remains that are thousands of years old. With the realization that such rare diamonds of the New World belong to all Native Americans and not a single tribe, combined with ownership of the information told to them by their ancient ancestors, they can clarify history through scientific analysis.

Throughout the last five hundred years, desecration has taken place countless times. During the last two centuries alone, thousands of individuals have been disinterred—often through systematic collecting—and remain housed in collection and museum facilities.⁴² Should this be for naught? The ancestors have left a legacy, and the story they can tell us is often written in the bones.

The NAGPRA law and repatriation process have had a profound effect on the discipline, particularly biological anthropology. The modifications have been commonly received as overwhelmingly positive, allowing for a pragmatic change to bioculturalism in action, as well as in words. This broadening does not negate an evolutionary approach; rather, it adds another important dimension.

THE OLD ONES

Recently, changes to NAGPRA have been proposed that, yet again, have polarized anthropological and Native American communities and highlighted existing problems. One example of such contention was stirred in 2004 when it was suggested that the NAGPRA definition of *Native American* be changed.⁴³ Currently, the law defines such an identity as “of or relating to a tribe, people or culture that is indigenous to the United States.”⁴⁴ The modification suggested in 2004 was to alter the NAGPRA definition of *Native American* by inserting the words *or was* in order that the law instead read “a tribe, people or culture that is *or was* indigenous to the United States.”⁴⁵ The proposed change to the definition of who is a Native American is related to the continuing debate over who were the first Americans and what early populations may have contributed to the genetic and cultural diversity we see today.⁴⁶

The Department of the Interior rattled nerves when it recommended changing the guidelines for the disposition of CUHR.⁴⁷ Anyone familiar with the decade-long controversy over Kennewick Man and debates over other long-held ancient remains will think, at first, that these guideline changes relate directly to them.⁴⁸ In part, they may. But given that many ancient remains have already been studied, the NAGPRA changes that the Department of the Interior proposed would have a greater effect on the less-studied remains, or those of individuals not yet known. Specifically, the Department of the Interior has called for the disposition of CUHR to be the decision of, first, the tribe(s) that currently reside on the land from which they were interred; second, the tribe(s) that are recognized as having “aboriginally” occupied the

region; and, third, the tribe(s) that have a cultural relationship to the region.⁴⁹ This third section is in direct conflict with a previous section of the law that requires evidence of lineal relationship. Additionally, it is vague and open to interpretation. This adds to the fervor surrounding the question of ownership of these remains. Although we have had positive results in identifying more recent cultural affiliations of older skeletal remains, can we, or will we, ever be able to identify the affiliations of the Ancient Ones? Do we need to? From an evolutionary standpoint, it is important to investigate and record this history.

One can only assume from events that have followed since the inception of NAGPRA that its authors were focused on human remains and material culture of a more recent origin, say, the last thousand years. Archaic and Paleoamerican remains come under even greater controversy.⁵⁰ The proposition to change the wording of NAGPRA when it came to the definition of *Native American* has fueled intense debates. Similarly, the Department of the Interior's CUHR suggestions have elicited severe reactions. The scientific community, therefore, stands to make better progress regarding ancient remains by dealing directly with the tribes, and removing politicians from the equation. In terms of ancient remains, the reality is that the law appears to be on the side of science. However, science is not supposed to be on any one side.

A recent study found that three separate methodologies (nonmetric dental traits, morphometrics, and genetic mtDNA) carried out on ancient remains provided independent evidence of the origins of New World populations based on the biological evidence.⁵¹ These data point to the circumarctic region and Siberia for the origins of very ancient, and morphologically heterogeneous, populations.⁵² The evidence for a continuum of dental and skeletal morphological variation through time is equally important. This is suggestive of a single founding population that natural evolutionary processes such as gene flow, genetic drift, and mutations affected over time.

The PCR technology was invented in the mid-1980s, and it revolutionized genetic research. A PCR utilizes an enzymatic reaction to take a strand of DNA as a template and replicate it. This means that one or more copies of DNA can be exponentially amplified, creating literally millions of copies of the DNA. Variations on this basic theme allow DNA analysis to look for conserved or divergent regions of genetic material in populations. Mitochondrial DNA and the Y chromosome are especially useful in the study of human origins because, unlike other genetic material that undergoes rearrangement with every generation, mtDNA and the Y chromosome are passed down from generation to generation with little change.

Some mtDNA and chromosome studies indicate a very "early" entry into the Americas (some 35,000 to 20,000 years ago).⁵³ Recent studies, however, offer a more conservative estimate (20,000–15,000 years) based on data culled from ancient remains.⁵⁴ What all the studies have in common is recognition that genetics point to an Asian origin for all Native Americans, with the understanding that Asian populations, like modern Native American populations, have gone through microevolutionary changes since the time of the last common ancestor and population movement. Most studies suggest that founding populations originated in geographic areas that "extended from the

Altai Mountains to southeastern Siberia and northern China” with a possible Euro-Asian influence.⁵⁵ The most recent and technologically advanced studies point to a single migration of humans to the New World, with variation arising through isolation.⁵⁶ Additionally, some lack of variation may have come from the inbreeding of small founding populations, or a barrier to gene flow.⁵⁷

COMMON GROUND

Rising out of the social unrest of the 1960s and 1970s, the repatriation movement has been a turbulent path for all. Interpretations within each camp have been just as varied as between each camp. Many tribes have used anthropologists and their information to support their positions as well as implement future policies. Anthropologists have been forced to justify their research to tribal communities and the general public, defending collections for their scientific value as theories and technology advance. Skeletal and archaeological analyses document a history that may not otherwise be written. In terms of osteological analysis, the most positive result of NAGPRA (other than the standardization of data collection for future comparative analysis) is the exchange of ideas, customs, and feelings between Native American communities and the anthropological community.⁵⁸

Like Native American scholars of the past who obtained professional degrees from law school, medical school, and other graduate and post-graduate studies including anthropology, there are Indian students today who are interested in studying the biological history of our species, and, more specifically, the biological history of Native America. Interestingly, while anthropologists debated each other for more than a decade regarding the evils and positives of NAGPRA, young Native American scholars have quietly stepped into the arena of biological anthropology. Our well-meaning colleagues, who have fought for what they feel is a “pan-Indian” belief that all human remains be reburied without further study first, will find themselves painfully back at the beginning—simplifying what it means to be Indian, assuming a cultural whitewash of a single belief system now and in the past, and doing “what is right” for the Native Americans. We should worry that they may succeed. Although there is much still to resolve in these complicated relationships between tribal groups and the scientific community, there are as many debates about them as between them. These debates are important for a future we have yet to conceive.

It is disappointing that it took a law to create the bridges we are building, and that we will never be able to separate the repatriation effort from politics. However, there are moderates on both sides of the debate and, as the benefits of skeletal analyses are made clear, many Native Americans now see the potential of osteological analysis. Whether there are questions of nutrition, disease, or population history, it would seem that we may have found common ground after all.

Acknowledgments

I think it fitting here to conclude by thanking the Native American communities whose many ancestors have contributed to our knowledge of disease processes in the past and greatly affect the evolution of modern biomedical research in the United States. The shadow of history has been cast, and with the light come shades of gray.

NOTES

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7. K. S. Fine-Dare, *Grave Injustice* (Lincoln: University of Nebraska Press, 2002).

8. Riding In, "Repatriation: A Pawnee's Perspective," 238–50.

9. D. J. Ortner, "Scientific Policy and Public Interest: Perspectives on the Larsen Bay Repatriation Case," in *Reckoning with the Dead: The Larsen Bay Repatriation and the Smithsonian Institution*, ed. T. W. K. Tamara L. Bray (Washington, DC: Smithsonian Institution Press, 1994), 10–15.

10. Riding In, "Repatriation: A Pawnee's Perspective," 239.

11. B. Billek, personal communication, 1999.

12. Ferguson, Anyon, and Ladd, "Repatriation at the Pueblo of Zuni," 251.

13. *Ibid.*, 252; emphasis added.

14. *Ibid.*

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