

THE RIGHT OF NATIVE PEOPLES TO GENETIC MATERIAL AS CULTURAL PROPERTY

by

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A. INTRODUCTION: A MATTER OF DEFINITION

This study will provide a legal foundation for the right of native peoples to control access to, and the use of, genetic material under a doctrine of cultural property. It will also identify other approaches to address abuses of genetic material in relation to native peoples. The ability to extract genetic material from the cells of plants, animals, insects, and humans is fairly new, and there is rapid development in genomics, the science of genetic material. The international and domestic law rights of native peoples are evolving, and the concept of cultural property is fairly recent. In addition, the position of native peoples in Western law is unique, and to a large extent, discussions of their rights are sui generis, because solutions to the problems posed here are unique to them and their situation. Therefore, this study examines the question of the right of native peoples to genetic material as cultural property from the standpoint of definitions of terms for a sui generis approach, based upon the impact of the problems genetic research generate for native peoples.

“First peoples,” or peoples who constitute distinct groups as a matter of history and culture, are the subject of many definitions, including “aboriginal,” “indigenous” or “native.” There are several different definitions of “indigenous peoples,” the term usually used in international law and relations, so this study requires its own definition of the term “native peoples” and a discussion of why it is preferable. A definition of “genetic materials” is needed to give context to the study, and it should be a plain-language one for general readers. Given the sui generis nature of the rights of native peoples, there should be a discussion of a definition of “property” in general, contrasting Western concepts with native ones. “Cultural property” needs a definition in relation to rights claimed by native peoples. There is a great deal of movement in national or municipal law, and there is an explosion in written discussions of their international law rights. At the same time, there has been a shift in the nature of international law, particularly in discussions of the contemporary meaning of “international customary law,” and trends in emerging “soft law” principles that may blossom into “hard” legal rules. Many contemporary developments have to do with “norm-setting” and “standard-setting,” and there are advances in the discussion of the rights of native peoples in professional and private sectors that require discussion.

Given those considerations and the newness of this subject, this study will (1) define the term “native peoples” to identify the groups affected by genetic research and development; (2) define what is meant by “genetic materials” and the impact of their use; (3) define the terms “property” and

“cultural property;” (4) review contemporary understandings of “law” and “international law” in general, including “soft” international law, and discuss the developing rights of native peoples in that law; (5) address national or municipal theories that might apply; (6) review norm- and standards-setting activities; and (7) articulate some conclusions about the right of native peoples to control genetic research and abuses of it.

B. DEFINITION OF “NATIVE PEOPLES”

There are three terms that are generally used to identify the peoples discussed here—“native peoples,” “aboriginal peoples,” and “indigenous peoples.”¹ “Aboriginal” is used in Canada² and Australia.³ The term “native” is popular in the United States, and although many use a tribal identification, many Indians refer to themselves as “Indian,” and there is a movement to recognize Native Hawaiian rights in a manner that is similar to the rights of Indians in American law.

The term used most often in international law and diplomacy is “indigenous,” and its development is fairly recent. The first modern concern about the rights of distinct peoples arose after World War One when the League of Nations was formed.⁴ National minorities that were swept up in the War, and targeted because of their identity, were the subject of treaties with some states to protect minorities.⁵ Following the adoption of the Universal Declaration of Human Rights in 1948,⁶ the United Nations embarked on a series of “standard-setting” resolutions and covenants. One of the most basic of the covenants is an “international bill of rights” in the International Covenant on Civil and Political Rights.⁷ Article 27 of the Covenant recognizes the right of ethnic, religious, and linguistic “minorities” to enjoy their own culture.⁸ A study of the international customary law rights of those minorities⁹ offered a description of a minority as a:

group numerically inferior to the rest of the population of a State, in a non-dominant position, whose members—being nationals of the State—possess ethnic, religious or linguistic characteristics differing from those of the rest of the population and show, if only implicitly, a sense of solidarity, directed towards preserving their culture, traditions, religion or language.¹⁰

There are several difficulties with that definition. First, it assumes that a “minority” will be a group that is smaller than general populations, but there are several countries where the intended beneficiaries of the right will either be the majority population, or exist in significant numbers.¹¹ There are tensions in the use of the term in indigenous policies. For example, there are two major traditions in American Indian law—a Whig tradition and a Utilitarian one.¹²

A Whig tradition is the assimilation of Indians in separate local communities; relative tolerance of local customs; relative stress on honoring Indian treaties; and indirect rule through tribal leaders. From the pertinent Utilitarian viewpoints, particularistic groups and customs and old promises have scant relevance until they become important as obstacles to the achievement of Utilitarian agendas. Utilitarians tend to view with greater favor the assimilation of individual Indians into a pan-Indian, nationwide ethnic group, represented by national ethnic Indian leadership and associations unfettered by tribal particularisms. The

identity and unity of that ethnic group are symbolized by an eclectic pan-Indian culture. Such Utilitarian viewpoints emphasize the concepts of civil and human rights of individual Indians within their communities.¹³

There is a conflict between the Whig and the Utilitarian approaches. The Whig tradition is the one that generally underlies American Indian policy, and it motivates the efforts of native peoples to get international recognition of their rights because of its limitations. There is the problem that there is “relative tolerance” of local customs and “relative stress” on treaties in the Whig tradition, and native peoples have been going to the United Nations for many years to expand their rights and get them entrenched in international human rights law. The Utilitarian agenda is often seen in opposition to native rights in nationalistic “one law for all” assertions. Native peoples are not minorities because there are many distinct groups, many languages, and many cultures within national boundaries, and they are historically different from other “minorities.” Native peoples do not want to be treated as a minority, along with other “newcomers,” but as distinct peoples. Utilitarian moves to weaken the position of native peoples is likely another motivation for seeking protection from the United Nations.

The Sub-Commission on the Prevention of Discrimination and Protection of Minorities is under the United Nations Commission on Human Rights, a body that adopts proposed declarations of international human rights law and proposed international human rights covenants for adoption by the U.N. General Assembly. The Sub-Commission commissioned a comprehensive study of the condition of indigenous peoples around the world, and the report that was produced in 1987 attempted a definition of “indigenous peoples:”

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems.¹⁴

The use of the terms “pre-invasion” and “pre-colonial” create problems, because they seem to say (as some states maintain) that the only “indigenous” peoples are in states that were subjected to (largely European) conquest and colonization following the Spanish entry into the New World in 1492. Are there “indigenous peoples” in Africa or Asia who have rights? That restates the Whig versus Utilitarian dichotomy and the issue of whether there are numerous groups of distinct peoples within a state who need protection, or whether their “tribal” identity has become nationalized. More recently, Asian countries have moved to opt-out of international human rights covenants on the ground that they are “Western,”¹⁵ and there has been discussion of having a formal definition of “indigenous peoples” in a proposed declaration on the rights of Indigenous Peoples.¹⁶ Asian countries want a conquest-colonialism definition to argue that they have no indigenous peoples whose rights must be honored, while other U.N. representatives argue that there must be a universal definition in keeping with the universal character of human rights declarations and covenants.

There is a definition of both tribal and indigenous peoples in an international convention, "ILO Convention 169" (the popular term), or the *Convention Concerning Indigenous and Tribal Peoples in Independent Countries*:

1. This Convention applies to:

(a) tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations;

(b) peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, cultural and political institutions.¹⁷

The Convention goes on to state that "Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of the Convention apply."¹⁸

The World Bank is a major player in developing countries that have indigenous populations, and it uses the term "indigenous peoples" while referring to "indigenous ethnic minorities," "tribal groups," and "scheduled tribes" as "social groups with a social and cultural identity distinct from the dominant society that makes them vulnerable to being disadvantaged in the development process."¹⁹

The United States position is that there is no need to have a definition of "indigenous peoples" in international human rights instruments, but if there is a need for "benchmarks" to define who is indigenous, there should be "fundamental criteria, including but not limited to self-determination, aboriginal status, and distinct culture and customs."²⁰

At end, there is a general sense that a common international definition is not possible or desirable at this point,²¹ and self-identification should be the primary criterion. There is some general agreement that there are indigenous peoples in the Americas,²² Greenland, and many parts of the Pacific. While South Africa recognizes indigenous groups in its law, there is an open question in other parts of Africa and Asia of whether national governments will honor the rights of indigenous peoples—no matter how those groups might be defined.

This study will follow the practice of international institutions and many writers of using "aboriginal," "indigenous," and "native" in the same sense. Native is the term of preference here, acknowledging the definition element of "a sense of solidarity" in the Capotorti definition of "minorities."²³ Western thinking and language is generally based on rational concepts. That is, they use rational constructions of reality and abstract terms. A great deal of native thinking is affective and pertains to feelings. There are terms that have legal meaning in many native languages that

speak to solidarity and “native” is used in English to express solidarity with the group, and the solidarity of native peoples everywhere with each other. Native peoples are not simply part of one Utilitarian “minority,” but distinct groups that are separate and apart in terms of language, culture, modes of spirituality, etc., yet together in a sense of a common bond.

C. GENETIC MATERIALS

The term “genetic materials” in this study is defined in a scientific sense, by their misuses and dangers, and in a native sense. The scientific definition of what genetic materials are is needed for a native understanding of them, and the misapplications of genetic research provide a foundation for why native peoples should have a right to control them.

At the risk of gross oversimplification in attempting a plain-language definition of genetic materials, genomes are important because they are a “map” or “script” of a living organism, including plants, animals, and humans. We read news accounts of a race to “sequence” the human genome. That effort arose from radiation studies following the bombings of Hiroshima and Nagasaki, and the need to know how radiation affects genetic instructions in cells.²⁴ Scientists needed a tool that could detect “a change in one ‘word’ of the [genetic] program, among perhaps a hundred million.”²⁵ A “sequence of the human genome” is “a word-by-word copy of the entire genetic script for an ‘average’ human being, and thus to establish a benchmark for detecting the elusive mutagenic effects of radiation and cancer-causing toxins.”²⁶ The human genome is the genetic material in a human cell—our script or map that makes us who we are—and “the” genome (which can differ) is distributed in 23 sets of chromosomes within a cell.²⁷ Chromosomes are in pairs, representing the contributions of both parents.²⁸ The genome is molecules of deoxyribonucleic acid, a natural polymer we know as DNA.²⁹ There are two strands of DNA in each genome, and each looks something like a twisted ladder, an entwined spiral, or the famous “double helix.”³⁰ Those patterns and signals are in the several trillion cells of our bodies,³¹ and they are what makes us “us.” The eventual unwrapping of the genome and the mapping of its patterns will make it possible to do many things.

There are two kinds of specific DNA material that interest scientists—mitochondrial DNA (“mtDNA”) and Y chromosome material.³² Mitochondrial DNA are “short pieces of genetic material found outside a cell’s nucleus,” and the Y chromosome is inside the nucleus.³³ Both kinds of material are used for “molecular-anthropological studies.” Given that each is inherited from only one parent (mtDNA passing from mother to daughter and the Y chromosome passing from father to son); given that the genetic systems in each “accumulate mutations in more or less linear fashion through time,” so “permanent and detectable genetic changes occur at a roughly predictable rate,” researchers can trace the evolution and change of female and male lineages in humans; given that “many of the mutations detected in mtDNAs and Y chromosomes correlate with the geographic region in which they first occurred,” that makes it possible to trace migration patterns by mutations or “genetic markers” found in different populations; and finally, given that genetic systems are sensitive to random processes, such as “genetic drift” or changes that result from factors such as geographic isolation, migration, or population splits, distinct groups can be traced.³⁴ Mitochondria from cells are used to trace “haplogroups” or female lineages, that can be identified by “a specific set

of genetic markers.”³⁵ Material from Y chromosomes is used to trace male lineages.

The discovery of the human genome will change the world in many ways, and it will change the way we see ourselves.³⁶ The Human Genome Project (of the United States Department of Energy) is close to competing a roadmap of human genes, and if we do not succumb to “genomania,” we will see new advances in medicine, better understand human variation, and change the argument over nature versus nurture (inherited traits or conditioning) into one of understanding the roles and interaction of both.³⁷ We may be able to identify the genes that produce human disease,³⁸ or get new clues on how to deal with drug addiction.³⁹ New advances will also enhance our understanding of behavioral disorders and traits, despite sensational news reports “that researchers have discovered the ‘gene’ for such traits as aggression, intelligence, criminality, homosexuality, feminine intuition, and even bad luck.”⁴⁰ Genomania, as shown by that quote, points to excessive enthusiasm by the press, and sometimes, there are excesses in research or development that must be guarded against.

Despite those advances—even revolutionary ones—developments in genetic research have raised several political and legal issues which even members of the United States Senate have recognized. They include privacy concerns, inappropriate access to and use of private genetic information, discrimination by employers or insurers based on genetic information, problems with the methods used to gather and store genetic information, questions of who should have access to that information, and debates over public versus private ownership of genetic information.⁴¹ As the World Health Organization recognizes, just as the scientific revolution in physics created a potential for the misuse of science in the 20th century (e.g. the atom bomb), there is also a potential for the political misuse of genomics.⁴² What are some of the other potentials for the misuse of genomics?

The first problems arise from huge databases of genetic materials and research that have come into existence and are being added to at a fast rate. One scientist who identified himself as a “Genome Browser,” pointed out that current databases are full of misleading information, and that poses a danger to scientific research.⁴³ The large masses of information in the databases pose the risk of misinformation in research—perhaps even disinformation—that can impede research or invalidate accurate discoveries. There are also impediments when research is a commercial enterprise with property rights as a barrier, when it comes to access to and the sharing of information. Poor or misguided research can also muddy up a database.

There are serious concerns—with some misinformation and a degree of hysteria at times—over genetically engineered plants, animals, and microorganisms.⁴⁴ The discovery of DNA and methods to extract and unravel it has led to breaking up and recombining genetic molecules to do genetic engineering, and the process is called “recombinant DNA” or “rDNA.”⁴⁵ There are ways to place new or “foreign” DNA into an organism. One process identifies “target” DNA, using an enzyme to take a DNA segment from one organism and splice it into a recipient organism’s preexisting DNA.⁴⁶ Another method is to paint DNA with a desired trait on microscopic metal particles that are then loaded into and shot from a “gene gun,” so that gene-carrying bullets penetrate the cells of another organism, where fluids wash the DNA off the metal particles.⁴⁷ Similar kinds of things were done to supplant traditional breeding methods, and genetic engineering can give organisms useful traits,

such as resistance to ice damage, changing pollutants into nontoxic products, or making medicines such as insulin or interferon.⁴⁸ However, genetic engineering can also create new problems.

One example of a genetically-engineered product and the problems it can create is “Bt” corn and other “Bt” crops.⁴⁹ “Bt” is a bacterium that is toxic to insects, it has been used to spray crops for many years, and it loses its effectiveness in a few days.⁵⁰ Genetic engineering is being used to modify crops to incorporate genetic material from the Bt bacterium to provide more direct protection against insects.⁵¹ Such altered or transgenic crops have been widely circulated, raising concerns about releasing Bt toxin into the environment and the increased probability that pests will evolve to resist those crops.⁵² Another product of genetic engineering is “Roundup-Ready” crops that are genetically modified to resist a common herbicide, so that when fields are treated with it, the crops will be unharmed and only the “weeds” will be destroyed.⁵³

The distinguishing feature of genetic engineering in plants, animals and microorganisms is that unlike traditional Mendelian cross-breeding techniques that are limited to members of the same species, genetic engineering allows modern breeders to “cross the species barrier” and place portions of DNA into different species—and into different genera, families, orders, classes, phyla and even kingdoms!⁵⁴ Genetics is a new science that is still exploring its limits and undiscovered hazards, yet commercial ventures are already producing products that may not have been well thought out, so we may not yet know their dangers. There is a risk that the lure of profits from the sale of novel products will prevail over scientific caution. Public regulation cannot keep pace with new advances, and given a global economy, anti-regulation sentiments in a producer country can unleash poorly-tested or unproven products in countries that do not desire them, because of international trade law and pressures on undeveloped countries.

Genetic advances in the field of medicine are already having adverse social effects. A survey conducted by the University of Massachusetts Medical Center found that 785 patients reported having lost their jobs or insurance benefits because of their genes.⁵⁵ That highlights problems of personal privacy, access to databases, the creation of new discriminatory classifications based on genetics that are not protected by law, and the lag of law behind technology. That also indicates the possibility that given the political climate in some countries, distinct groups can be targeted by their genetic markers.

The World Health Organization Committee on Health Research recently identified six areas of risk and hazards in genomic applications. The first is the process of genetic manipulation itself. As was noted in the discussion of genetically-altered organisms above, recombinant DNA can be used to take molecules from different species to recreate hybrid molecules in a test tube.⁵⁶ Some of them may be harmful pathogens or cancer-producing agents that are at risk of release and getting out of control.⁵⁷ While the WHO report discusses efforts to regulate genetic manipulation in the United Kingdom and the United States, the international regulation of research is not uniform, and the report does not address what happens after the research stage when research results are put into commercial hands. Genetic manipulation using recombinant DNA is being used to alter the genome of “a wide variety” of animals and insects to create animal models of disease, make diagnostic and

therapeutic agents, or disable disease carrying vectors (hosts for the transmission of diseases). Genetically modified animals are being engineered to produce therapeutic agents in milk or tissues; animals are being developed to be disease-resistant, grow more quickly, or have “feed conversion efficiency; and insects that spread human diseases are being modified so they cannot transmit disease.⁵⁸ Without being alarmist, we should watch for unpredicted side effects in such animals and insects.

This is a new area of research that can create hazards, such as new or increased allergic reactions in humans from the new food sources, adverse effects to non-modified animals because of behavioral changes, and releasing genetically modified materials into the environment.⁵⁹ Many of the same problems arise from genetically modified foods, and the “spectrum” of safety issues for them is extremely wide”: using microbial and fungal cells as factories to produce enzymes and additives; introducing foreign DNA into plants using bacterial antibiotic resistance genes as selection markers; the risk that transgenic DNA transferred to a host might genetically alter that host; or the possibilities that microorganisms in the human gastrointestinal tract or soil might acquire transgenic DNA.⁶⁰ Another problem area identified by WHO is the possibility that the use of recombinant DNA could “increase the number of deleterious genes in the human gene pool.”⁶¹ Attempting to use recombinant DNA without adequate testing could have an adverse impact on human genes and natural selection. The report notes that genetic therapy is imprecise at present, and, for example, “it is not possible to remove and replace a gene at the correct place on the chromosome.”⁶² If a gene, or a modified gene, is delivered imprecisely, that could create unintended genetic effects and risks.⁶³ The genetic databases that are growing create many new problems—the scope of informed consent; the entry of information into data bases using “presumed consent” (where initial consent creates a presumption of consent for the use of material in a database for other purposes⁶⁴); commercial versus governmental maintenance of databases; access and control issues; potential harm to individuals, communities, and groups; and the misuse of data by those who have access to the database.⁶⁵ There are also concerns and issues arising from the potential to stigmatize countries or groups; commercial exploitation without adequate compensation; the relationship between commercial ownership of databases and the deleterious effect of that on genetic research [by restricting access or charging for it]; and “a variety” of economic and ethical issues.⁶⁶ Another problem is that the countries that are supplying materials for database collections are usually in developing countries, sending them to companies in the developed world, and the countries furnishing raw materials have not sorted out basic ethical and regulatory issues, particularly when it comes to “the dangers of inequitable commercial exploitation.”⁶⁷ The fifth concern is the use of recombinant DNA for biological warfare or other political misuses.⁶⁸ The new technology raises specters of germ warfare, the mass destruction of crops, the release of genetically modified organisms or animals for destructive purposes, or even the revival of the shameful legacy of eugenics for political gain.⁶⁹ Finally, the report addresses experiments with human embryonic stem cells and cloning, noting the controversies that arise from those technologies.⁷⁰

Many of the identified abuse, misuse, or unanswered question issues apply to native peoples—taking genetic materials without informed consent (or under false pretenses); the failure to compensate donors; refusal to share discoveries with the providers of materials (particularly when it comes to

new medicines or treatment methods); the release of genetically-modified crops in native areas;⁷¹ and other problems. Some of them deserve special focus here. They include the relationship of native peoples with the world society at large, compensation, informed consent, the destruction of traditional economies, discrimination, attacks on native identity, and the threat of targeting for bio-terrorism.

The relationship issue has been a troublesome one for native peoples since 1492, and the literature on it is huge. However, it is central to the question of who should have the “right” to “own” or control genetic material. Native peoples participated in the work of the World Commission on Environment and Development, and as a result, there was some discussion of them as “vulnerable groups” in the Commission’s 1987 report.⁷² Its conclusion on them is essential to the subject of the taking of native property:

These communities are the repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems. It is a terrible irony that as formal development reaches more deeply into rain forests, deserts, and other isolated environments, it tends to destroy the only cultures that have proved able to thrive in these environments.⁷³

Although the report recognized the exploitation of native peoples, and it spoke to “empowering vulnerable groups,”⁷⁴ its recommendations have not yet been implemented. Instead, it is as if the recognition of native communities as having “vast accumulations of traditional knowledge and experience” has been an invitation to take native knowledge and resources. Instead of receiving protection, native peoples get “corporate ethnobotanists rifling through the shaman’s bag in search of pharmaceutical miracles,”⁷⁵ and “They are often the targets of scientific research because the relative isolation of the communities ensures minimal gene flow.”⁷⁶ Native communities remain vulnerable, little has been done to protect them from exploitation, and the basic inequity that goes back to 1492 is the taking of native property without consent, fair compensation, or a fair return of the benefits given to the world at large.⁷⁷ There are two essential evils in the current relationship—an obsession with technology and abuses of it,⁷⁸ and complex society (the “state”), which is the foundation of tyranny.⁷⁹ A small but chilling illustration of the combination of technology and tyranny is the fact that when the first automatic machine gun was invented by Hiram Maxim in 1884, it was used primarily on native peoples prior to World War I.⁸⁰ While a great deal of concern is expressed in many venues over the rights of native peoples, the concern has not translated into law and effective protection for native peoples, and there is a fundamental rift in their contemporary relationships with technological and commercial societies.

A primary piece of evidence to demonstrate the rift is the failure to compensate native peoples for the taking of their property—including physical property and ideas—when they are targeted for economic exploitation.⁸¹ When native materials are modified for genetic patents, the product is often too expensive to buy back (*e.g.* patents on food items used by a native culture), and even if native peoples could afford the modified (or simply patented) product, intellectual property

protections can exclude traditional uses.⁸² The very fact of patenting something that is native can threaten the rights of traditional cultures to their own resources, knowledge, and means of innovation, as with this example: “A company may ... visit a traditional farmer and purchase a sample of the finest seeds he has produced. The company may then take these seeds to a laboratory, study their genetic composition, perhaps alter them slightly, then apply for a patent. The company may then come back to the traditional farmer and his neighbors, prohibit them from using the seeds that are now patented, and sell the company’s seeds to the farmers as a substitute.”⁸³ There is another example: “A company may discover that indigenous people are using a certain plant to treat a rash. The company may take a sample of the plant, create a lotion from it, patent it, and take away the indigenous culture’s right to use their own treatment unless it is purchased from the company.”⁸⁴ One abuse of intellectual property law that several writers have pointed to resulted from the taking of a blood sample from a Guaymi Indian woman from Panama.⁸⁵ When the researcher returned to the National Institute of Health, he discovered that Guaymi Indian blood had a gene that gave natural resistance to leukemia, and he attempted to patent the cell line as its “inventor.”⁸⁶ Most recently, Indian nations of Minnesota, Michigan and Wisconsin adopted resolutions protesting genetic research and the patenting of wild rice as byproducts of research being conducted at the University of Minnesota.⁸⁷ Aside from the fact that the Indians of those States consider wild rice to be sacred, the economies of several Indian nations there depend upon marketing the rice as “Indian” wild rice.

Another fear is that genetically-altered crops will destroy traditional crops, as with a controversy in Mexico over whether transgenic corn contaminated local corn in southern Mexico or put butterflies at risk.⁸⁸ Aside from the dangers to native peoples discussed above, the World Commission on the Environment was correct that isolated native communities may have knowledge the rest of the world needs. If that knowledge is in the form of unique traditional crops or plants, or unique insects, then those resources should not be put at risk by industry pressure to market genetically-modified plants without proper screening. The two corn scares show the dangers of loose governmental regulation and politicizing science on behalf of industry.

There are several native identity issues implicated in genetic research. Many scientists in the field point out how alike groups of people are genetically:

But that’s not how many of the news stories have read. On the contrary, here are the kinds of headlines you might have seen: “RESEARCHERS FIND GENETIC MARKER UNIQUE TO AFRICANS.” “ASIANS BIOLOGICALLY LESS SUSCEPTIBLE TO ALCOHOLISM.” “ALL NATIVE AMERICANS DESCENDED FROM A SMALL NUMBER OF FOUNDERS.” In other words, given how journalists, pundits, and bigots have interpreted genetics research, people are probably more convinced than ever that group differences are significant.⁸⁹

Genetic research can be used to bolster pre-existing prejudices. For example, a Norwegian Saami news service reported that an employee of the Institute of Anatomy of the University of Oslo told the BBC “that the institute is doing research on Saami skeletons to prove that the Saami were not the first people in Finnmark (the northernmost county of Norway).”⁹⁰ A representative of the Saami Parliament lodged a protest with the Institute, and its head reassured the Parliament that the

statements of one employee did not represent the Institute's attitude.⁹¹ There was a large controversy over the "Kennewick Man," found in shallows of the Columbia River, that generated heated discussion over whether the remains, that didn't "look Indian," proved that Indians were not the first peoples in the Americas.⁹² Another controversy arose when a member of the Vermont legislature introduced a bill to establish standards and procedures to do genetic testing to determine the identify of people as Indians.⁹³ It is doubtful that there is a "native gene" that can be used as an identifier,⁹⁴ and native identity is a matter of cultural and political concern. There is a danger that population-specific research will reinforce stereotypes about race and ethnic difference, and these incidents show how such research can be abused.⁹⁵

There are many examples of how the infant science of anthropology was used to reinforce racist assumptions about native peoples, and one of the lingering subjects of scientific fascination is the "land bridge theory" that the natives of the Americas arrived across a land bridge over the Bering Strait in ancient times. There have been longstanding disputes over who came to the Americas, from whence they came, and when they came, so genomics has provided new tools for speculation. The use of mitochondria or mtDNAs to trace haplogroups or female lineages was described above. The mitochondria or mtDNAs of American Indian populations are classified in five haplogroups, "A, B, C, D, and X."

Some illustrative research that is being done will be summarized here.⁹⁶ There are two general kinds of genetic research on theories of when native peoples arrived in the New World, where they came from, when they arrived, and how they dispersed. There is research on female lineages using mitochondrial DNA, and research of male lineages using the male Y chromosome.

One study sought to establish that there are four major lineages of mitochondrial DNA in the peopling of the Americas.⁹⁷ It used blood samples from 72 identified native people—20 from Columbia, 45 from Chile, three Mayas, three Brazilian Indians, and one Apache.⁹⁸ The authors argued that there are four major mtDNA lineages in Native Americans, which they call I, II, III, and IV,⁹⁹ that are also identified as G2, G4, G9, and G11.¹⁰⁰ The authors said there are four racial or geographic groups.¹⁰¹ Based upon their research, the authors then attempted to indicate "when and how the first Americans peopled the New World."¹⁰² They concluded that the four clusters "represent respective ancestral populations in northeast Asia that were well isolated from one another."¹⁰³ They conclude (and assume) that the migration was across the Bering land bridge, and that first took place from 14,000 to 21,000 years ago.¹⁰⁴ They also speculated that there were different waves of migration, and that Nadene Indians (a language group), Aleuts, and Eskimo "seem to have derived from later migrations."¹⁰⁵ Thus, this study concludes that there are four "native genes," speculates that there was a land bridge migration, and that the natives of the Americas are from Asia.

A 1998 study moved the research further in seeking to trace migration routes, found a new haplogroup, "X," and established links between the Indians of the Americas, not only to Asia, but to Europe as well.¹⁰⁶ The authors took a total of 36 samples for their study (22 Native American and 14 "European"), including seven northern Ojibwa from northwestern Ontario, two Southwestern

Ojibwa from Wisconsin, five southeastern Ojibwa from Manitoulin Island in Lake Huron, six Navajos from New Mexico, and two Nuu-Chah-Nulth Indians from Vancouver Island in British Columbia.¹⁰⁷ The fourteen “Caucasian-European” samples were taken from two Caucasians of European ancestry of the United States, one French Canadian, five Israeli Druze, and five Italians.¹⁰⁸

The tests confirmed that all 22 Native American and all 14 European DNAs belonged to haplogroup X.¹⁰⁹ The authors said that there is “only one possible founder haplotype, and the age of haplogroup X is 23,000 years—more or less.”¹¹⁰ Using other data, “both in Europe and the Americas,” “suggests that this is the founder motif that originated in the Old World and moved to the Americas.”¹¹¹ They also suggested that haplogroup X is a “fifth founding mtDNA haplogroup for Native Americans.”¹¹²

They then asked, “Where did this haplogroup originate?”¹¹³ X has not been found in “numerous Asian/Siberian populations” or in northern Asia.¹¹⁴ It is restricted to “some of the most northern Amerindian populations, and although it is found in Navajos but not in other Na-Dene populations (a language family), Navajos likely acquired it “through admixture with northern Amerindian populations.”¹¹⁵ Therefore, there is a “single founder root for Native American mtDNAs, yielded as a coalescence age, in the New World, or 23,000-36,000 years ago.”¹¹⁶ The study then laid out these conclusions:

The similarity between the western Asian/European and Native American haplogroup X mtDNAs appears to indicate a western Asian origin of this haplogroup. Indeed ... the coalescence time for haplogroup X in Caucasians is estimated to be 30,000-40,000 years ago, ... compatible with both a Near Eastern origin of haplogroup X and its subsequent spread, probably at a low frequency, into Europe and Asia. If this is the case, then it is possible that this mtDNA was brought into Beringia/America by the eastward immigration of an ancestral Caucasian population, of which no trace has so far been found in the mtDNA gene pool of modern Siberian/eastern Asian populations.¹¹⁷

In other words, natives of the Americas who carry haplotype X (or are a member of that haplogroup) may have originated in the Near East, moved to Europe, had their genes carried into Asia, and thence taken by natives to the Americas. When did “Caucasians” become “natives”?¹¹⁸

One author who participated in this study, Theodore G. Schurr, wrote a popular piece to sum up genetic research on American natives in 2000.¹¹⁹ In it, he indicated that the four primary haplogroups originated 35,000 to 25,000 years ago in both Siberia and America.¹²⁰ He said that one study suggests that haplogroup B appeared to be “much younger in America (about 15,000 years ago),” but another study suggests it was in East Asia 30,000 to 24,000 years ago, and its members may have entered America during that time.¹²¹ He then reported that there is a fifth native haplogroup, “haplogroupX,” that is “genetically linked to the rare European haplogroup X.”¹²² That lineage has not been identified in any East Asian or Siberian population (which has groups A, C and D), but it has “been observed in low frequencies in a number of European, Middle Eastern, and West Asian groups,” with the suggestion that the haplogroup arose somewhere in that “general region.”¹²³ Haplogroup X is found primarily in North America (with the other haplogroups being distributed throughout the Americas), so “X” seems to have had a “relatively ancient arrival” in the New World, namely 30,000 to 15,000 years ago.¹²⁴

A third article on mitochondrial DNA in the New World sought to trace the distribution of different haplogroups in North America and establish the number of migrations across the land bridge.¹²⁵ The authors established the haplogroup identities of 1,612 Native Americans and analyzed 395 of them.¹²⁶ “Individuals whose mtDNAs did not belong to one of the five Native American haplogroups were not included.”¹²⁷ The study concluded that the largest frequency or numbers of haplogroup A is highest in Canada, the eastern United States, and central Mexico.¹²⁸ The frequency of B is highest in the West and Midwest.¹²⁹ Haplogroup C has a “uniform frequency throughout North America,” but there is “a notable decrease in Alaska.”¹²⁷ In contrast, haplogroup D frequencies are slightly higher in Alaska and lower in the remainder of North America.¹²⁸ Haplogroup X has a higher frequency in the Great Lakes and Greenland than the rest of North America.¹²⁹ Following an extensive discussion of the distribution of the haplogroups in North America, the authors reached their conclusions: “Multiple lines of evidence ... suggests that Native Americans descended from migrants of a single source population that colonized the Americas in a single wave.”¹³⁰ The authors also concluded, of haplotype X, that those natives “have haplotypes identical to those of European and Asian members of haplogroup X.”¹³¹

There is also work using the male Y chromosome. One study involved a mutation in the Y chromosome that is associated with natives of the Americas.¹³² The group genotyped 173 humans from five continents and six nonhuman primates, looking for a particular variation of the “T allele” of the gene.¹³³ It occurred exclusively in 90.5% of the South and Central American populations examined, while other humans outside the Americas and the nonhuman primates had only a “C allele.”¹³⁴ The T allele was also found in Navajo and Eskimo populations, but only at the frequency of 50% and 67%.¹³⁵ The sampling showed that a part of the genetic samples called “DYS199,” the particular mutation, is found only within the Western Hemisphere, showing that “the discovery of a pre-Columbian allele within the New World can be used to assess historical origins and migrations of early native Americans.”¹³⁶ “Interestingly, the T allele appears in all three major linguistic groups—namely, Amerind, Na-Dene, and Eskimo-Aleut.”¹³⁷ The final conclusion was that the authors were not certain when the mutation occurred—perhaps it was before migration into Central and South America,¹³⁸ or perhaps it was 30,000 years ago—“similar to an earlier estimate of the time of entry to America (32,000) years based on classical genetic markers.”¹³⁹

Another Y chromosome study involved 306 samples taken from “five linguistically distinct Siberian populations” and from “Native Americans, Europeans, [India] Indians, Mongolians, central East Asians, and Africans.”¹⁴⁰ It found 32 haplotypes in 306 men, with what the researchers called the “major Amerindian haplotype,” which they called “haplotype 31.”¹⁴¹ They also found that “haplotype 10” was frequent in the Native American samples, and it was “found exclusively among North American Indians.”¹⁴² It was also found in one Mongolian and four Indian samples.¹⁴³ A “haplotype 20” was found in one North American Indian and “in some populations from the central region of Siberia.”¹⁴⁴ They found “haplotype 1,” which is “the most frequent in Europe (53%),” but that was likely the result of a recent “admixture” with Europeans.¹⁴⁵ However, haplotypes 10, 20 and 23 are absent from Europe.¹⁴⁶ Following the discussion of the kinds of “Y” haplotypes and their frequency, the authors drew some broad conclusions (also based upon archaeological and anthropological studies): They claim there was a migration path from Asia and that “The present-

day distribution of haplotypes related to haplotype 31 can be explained by a radiation from central Eurasia and a southern route to the Indian subcontinent.”¹⁴⁷ “The major Native American haplotype 31 is present on both sides of Beringia, most likely because of an American or Beringian origin of the mutation in the DYS199 locus.”¹⁴⁸ A map in the article shows an arrow with a question mark to indicate a possible passage back across the land bridge to eastern Asia.¹⁴⁹ The study also found a common ancestor–haplotype 10–“between Native Americans and Europeans, who left some rare descendants in Siberia, among the Kets and Altaians.”¹⁵⁰ The sensational conclusion was that :

THIS STUDY TRACES THE MAJOR NATIVE AMERICAN Y CHROMOSOME HAPLOTYPE TO THE IMMEDIATE ANCESTOR SHARED WITH PRESENT-DAY SIBERIANS AND TO AN OLDER COMMON ANCESTOR SHARED WITH CAUCASOIDS (EUROPEANS AND INDIANS). THIS COMMON ANCESTRY OF NATIVE AMERICANS AND CAUCASOIDS COULD EXPLAIN THE EXISTENCE OF NON-MONGOLOID SKELETONS, SUCH AS THE KENNEWICK MAN.¹⁵¹

There are problems with these studies. For example, what was the source of the genetic materials used for them? The Hori study got its materials from South American natives who were studied for “human T-cell lymphotropic viruses” and from the University of California at Berkeley.¹⁵² The Underhill project got its materials from “donor individuals” (who were thanked), namely people in the Alaska Department of Public Safety (Eskimo samples) and the University of New Mexico School of Medicine (Navajo DNA).¹⁵³ The Malhi article was based on samples obtained from the Indian Health Service and individual natives “who authorized their use.”¹⁵⁴ Ten south and central native samples and a Na-Dine sample were bought from the National Institute of General Medical Science, and ten additional Native American samples came from “paternity tests in North America.”¹⁵⁵ There is no indication that genetic materials obtained from a study of a disease, prominent universities, a police agency, paternity tests, and the National Institute of Medical Science, were gotten with either individual or native group consent. If individual consent was obtained, it is unlikely that what would be done with the samples was adequately explained, or the scope of what could be done was explained. One of the issues for native groups is jurisdiction over outsiders to control the taking of genetic materials. For example, there is a private blood collection business in Gallup, New Mexico (which is surrounded by the Navajo Nation) where many Navajos give blood for money. To what extent do they know what will be done with their blood? A Navajo Nation child support enforcement agency uses genetic paternity testing. To what extent are Navajo Nation officials aware that research that will go around its Institutional Review Board will be done using those samples?

There is a difference in perception between scientific thought and the thought of many native groups about what genetic materials are.¹⁵⁶ That is illustrated from a summary of a meeting of native representatives in Rio Rancho, New Mexico in 2001.¹⁵⁷ The governor of the Zuni Pueblo of New Mexico expressed the concerns of the Zuni People about genetic research and said that researchers must be “informed of tribal taboos regarding bodily specimens.”¹⁵⁸ This is a summary of a Navajo perspective (Marla Jasperse):

Ms. Jasperse has learned from elders that the threats of genetics are based on the

compromising of the sacred. The elders stress that genetic research is not the same as other types of research because it deals with the individual's body parts. The bodily specimens that are currently used to extract deoxyribonucleic acid (DNA), e.g., blood, hair, and saliva, are very sacred to the Navajo. The respect for the body as a whole and the parts that come from the body have to be dealt with in the most respectful way possible. The elders are skeptical of genetic research because researchers have disrupted existing sacred arenas.¹⁵⁹

She also noted that “among the Navajo, most illness is attributed to the result of mishandling of body specimens separated from the body.”¹⁶⁰

A participant addressed Native Hawaiian concerns:

The *Kanaka Maoli* believe that every piece of an individual's body contains a life force, *Mana*, which flows through the universe. The disruption of *Mana* causes disease. The *Kanaka Maoli* believe an individual is more than the sum of their genes. To see the whole of the *Kanaka Maoli*, a researcher must look at the whole and understand how everything is related to everything else. The *Kanaka Maoli* want their culture and all else that is sacred to them to be understood within the context of their cosmology. If a researcher takes any aspect of their culture out of context, the researcher will get something artificial. Moreover, the researcher will cause disruption that may result in illness and injury to the *Kanaka Maoli*.¹⁶¹

A Tohono O'odham representative from southern Arizona raised two requirements for researchers, and the second was that “the researcher will be asked to explain the use of body specimens because among the Tohono O'odham the use of body specimens is not acceptable.”¹⁶²

Dr. Ben Muneta, another Navajo participant, gave his views:

Dr. Muneta stressed the importance of educating scientists on culture and tradition. Specifically, Dr. Muneta expressed concern about researchers not always having respect for those that are deceased. In most native cultures there is reverence for the deceased, and it is sacrilegious to conduct research on the deceased. Dr. Muneta asked researchers to be responsible to people and to be fair in the work they are doing. For example, it is not acceptable to obviate tribal relationships with skeletal remains so that studies can be conducted.¹⁶³

Finally, Brett Lee Shelton, an attorney who works on native genetic issues, made this observation:

Mr. Shelton says tribes may not always be totally informed...about the potential pitfalls of research such as immortalization of cells and the circulation of samples among colleagues. The immortalization of cells and sharing of samples will make the repatriation of body specimens difficult.¹⁶⁴

This is a difficult area and an example of the gulf between the thinking of native peoples and people who want to study them using genetic material. There is some recognition of that in the Human

Genome Diversity Project's *Model Ethical Protocol for Collecting DNA Samples*.¹⁶⁵ Section II, which deals with what researchers should do before contacting "the Population" for genetic research, observes:

In many societies around the world, hair is secretly collected from intended victims to harm them through witchcraft. Consequently, people collect their own loose hair, fingernail parings, and other body products and bury them to avoid this danger. Researchers who asked such a population for hair might be seen as intending to perform witchcraft. Blood is often intended as a sacrifice, sometimes through special rituals. Donation of blood in such cultures is a serious matter that would require discussion and perhaps a neutralizing ritual. Before approaching the population, researchers need to know as much as possible about its likely concerns about and reaction to their collecting plans.¹⁶⁶

While the potential of not being able to do genetic research because taking samples would be seen as "witchcraft" may seem exotic or even laughable to some, we are really talking about a difference in world view when examining the comments of the native people above and this consideration.¹⁶⁷ The different world view involved is called "synecdoche," meaning that all parts of the body belong to someone and there are rules governing effect, where what is done to a part of the body is done to the person.¹⁶⁸ Other observers of Navajo ways commented on this belief saying, "Of course *similia similibus curantur* has been important in the thinking of most human groups since the Old Stone Age or earlier; but among whites this principle is now largely relegated to folk belief, whereas among The [Navajo] People it still dominates the thought of the most sophisticated members of the society."¹⁶⁹ The description of Navajo concepts of synecdoche may or may not describe all native thinking, but it is an example of how concepts of self and personhood must be respected.¹⁷⁰

The genetic research is disrespectful for many reasons. First, the studies cited above make assumptions about the truth of the land bridge theory, and they seem to assume that it is well-established when one prominent native thinker attacks it as being unsettled.¹⁷¹ There is a legacy of racism and paternalism in studies of native people from the late 19th and early 20th centuries that persists through today.¹⁷² Native peoples still do not have assurances that science will not be used against them in destructive ways.¹⁷³

A close examination of the articles above shows inconsistencies. At first, there are four Indian haplotypes; then there are five; then there is speculation there may be more. The articles use different labels to identify the haplotypes. Navajos are put in the "X" group and then the "A" one. There is still disagreement over the number of migrations into the New World, and the dates of one or more of them. There appears to be heavy reliance on archaeological finds to bolster genetic findings when the researchers claim that their genetic dating and migration methods have an independent basis in scientific fact. Speculation over European origins of the X "native gene" are not very precise because there is a dispute whether a specific allele is "the" identifier. Finally, what is to be done with this information? There appear to be five genes that scientists claim are native-specific.¹⁷⁴ Whether or not that is true is likely not established, but if it is true, then there is a means of identifying people in the Americas as being native.

That raises a concern about a threat of biological war on native peoples or isolating them for bioterrorism. Bioterrorism is a major contemporary worldwide concern, where groups that have little political or military power, or the resources to obtain it, can leverage power using bioterrorism.¹⁷⁵ Terrorism is used to cause fear, panic, social disorder and economic chaos.¹⁷⁶ One of its particular targets in recent years is efforts to “eliminate indigenous peoples” in “ethnic cleansing.”¹⁷⁷ In fact, native peoples were among the first to be targeted for bioterror: “In America during the French and Indian War, the British supplied smallpox-virus-contaminated blankets to their Indian enemies.”¹⁷⁸ It may be unlikely that most governments would use bioterror materials on native peoples, including genetically manipulated toxins, but genomics, as shown above, has been used in discriminatory and destructive ways as weapons against native peoples. Finally, the utility of race- and community-targeted research is questionable at this point.¹⁷⁹ It is still possible to target people, or their crops or resources, for destruction.

D. PROPERTY CONCEPTS

This section will discuss the underlying ideas of “property” and “cultural property” to establish additional foundations for a native right to control genetic material. As was noted in the discussion of different perceptions about the nature and use of genetic materials, there is also a cultural gulf when it comes to the concept of “property.” Historically (at least in modern history), property is based upon possession.¹⁸⁰ One approach to that concept is that possession consists of “(1) notice to the world through a clear act of, and (2) reward to useful labor.”¹⁸¹ The problem is—again—the divide between native peoples and the West. It was assumed that Indians did not tell the world, “This is mine,”¹⁸² “yelling loudly enough to all who may be interested,”¹⁸³ and they did not make “productive” use of the land in a way that would be recognized by English common law.¹⁸⁴ The settlers could not “see” (or did not want to see) indicia of Indian ownership of land—or at least ownership from the European point of view.¹⁸⁵ Today, we have a better understanding that Indians had and have individual—as well as communal—concepts of property.¹⁸⁶ Modern Anglo-American property law is largely based on John Locke’s view of property as the commingling of a thing and labor to establish ownership, and Blackstone’s view that property comes from acts to make a declaration of an intent to appropriate.¹⁸⁷ Unfortunately, some of the great minds of the Enlightenment—including Hobbes, Locke and Hume—explained away colonialism and its injustices as “‘necessary evils’ for the ‘greater good of mankind,’” providing a philosophical and moral basis for property as a “higher and better use” of things, rather than a humanistic philosophy that saw the evils of colonialism.¹⁸⁸ The English philosophers who tolerated exploitation in colonialism (whose primary targets were native peoples) also defined modern concepts of property.

There are two ways to approach a definition of “property.” The first is an old-fashioned and historical one, and the second taps some contemporary thinking about it. The Roman law of possession, requiring the intention to possess and physical control, sounds familiar to the modern reader.¹⁸⁹ However, there were things that could not be owned in Roman law. They included property that was *res sacre* or *res religiosae*, including graves, gates, and city walls; *res publicae*, or things belonging to the state, including roads, navigable rivers, and harbors; and *res communes*, or things that were common to all, including the air, running water, and the sea.¹⁹⁰ Unlike

contemporary debates over “commons” (where everyone is free to do what they like with the resource) and “anticommons” (where too many people own the property),¹⁹¹ there were things that could not be owned in Roman law, because they were sacred, belonged to the state, or they were for everyone’s good and everyone’s use. This kind of Roman law analysis has been used to analyze the role of intellectual property in contemporary times.¹⁹² There are five categories of property in Roman law: (1) *res nullius*, “things belonging to no one;”¹⁹³ (2) *res communes*, “things open to all by their nature;”¹⁹⁴ (3) *res publicae*, “things belonging to the public and open to the public by operation of law;”¹⁹⁵ (4) *res universitatis*, “property belonging to a (public) group in its corporate capacity;”¹⁹⁶ and (5) *res divini juris*, “things that unowned by any human being because they are sacred, holy or religious.”¹⁹⁷ Genetic materials are being treated as things that belong to no one, and as it is with *res nullius*, having a property right in those materials may depend upon reducing them to ownership through patenting.¹⁹⁸ The problem with *res publicae*, which included roads, harbors, ports, bridges, rivers that flowed year-round, and lands adjacent to them,¹⁹⁹ is that native peoples want exclusive rights to their own genetic materials and control how they are to be shared. Therefore, the fourth and fifth categories have some possibilities for grounding theories. *Res universitatis* included property such as public facilities and race-courses in Roman times.²⁰⁰ In later times, bodies such as guilds, monasteries, merchant groups and common field communities owned property, and today, we think of “common pool resources” such as irrigating companies in the Phillipines, livestock-raising communities in Japan, fishing communities in Turkey, and other groups of people who “own” and manage a resource of common interest to them.²⁰¹ This kind of property can “exist where a resource is too large for individual ownership, but still sufficiently bounded that its exploitation is amenable to joint management by a limited group.”²⁰² The property that was *res divini juris* included temples, tombs, and religious statuary, and they were said to belong to no one because they were in the service of the gods.²⁰³ While that may seem out of place today, there are certain kinds of property that are capable of individual use or exploitation, but are (usually) off-limits, such as wilderness areas, deserts and seashores, where the misuse of the resource would fit the “quasi-religious terms of travesty and sacrilege.”²⁰⁴

While there is a great deal of controversy in contemporary international law over “group rights,” and particularly the communal rights of native peoples, this analysis shows that there is a precedent for native ownership of genetic materials. Here, we have a resource that is linked to native groups, whether it is a plant used for healing, a crop developed over generations of experimentation, a rare animal or insect, a sacred substance, or a gene that is specific to the group (if there is such a thing). Those things should be considered to be *res universitatis*—belonging to the group—and that form of ownership should be recognized.²⁰⁵ Genetic materials are considered to be sacred by many native groups, so the *res divini juris* classification could be used in the sense that, indeed, the taking of such property, or its abuse, should be considered to be a travesty and sacrilege.

The second approach supports that concept in a different way. Michael A. Heller²⁰⁶ and Carol M. Rose²⁰⁷ discuss property in terms of shared use, norms development, legitimate expectations, relationships based upon expectations, and actions based on emotions. In sum, a shared understanding of the right things to do when it comes to property as “things.”

There is an apparent shift in the way people are looking at “law.” For example, one study showed that while the academic community can patent human genome research under current law, there are some normative constraints having to do with the free flow of scientific information within that community that compel academic institutions to forego patents.²⁰⁸ There are new ways to look at “property” and its law, because at end, property is not so much a matter of individual freedom, as we usually look at it, but it is a “social ordering system.”²⁰⁹ It is a mistake to think of property as “a domain of freedom, into which regulation intrudes,” because “property rules form a system, a system not (only) of individual rights but of social relations.”²¹⁰ There is a growing body of scholarship that goes beyond the limits of positive law (i.e. laws enacted by a legislature or internationally-agreed covenants) and examines the realms of custom and social interaction.²¹¹ That is the field of “social norms theory,”²¹² and we see discussions of it in private law enforcement²¹³ and sentencing law.²¹⁴ While informal social controls may seem to be a “soft” means of achieving the goals of native peoples on this subject, those kinds of approaches are not an alternative to a firm right of property and the means to protect the right. However, they may provide some useful tactics. That is, elevating the issue in various venues may achieve informal recognition and protection, as with pushing the academic community to regulate abuses by its members or getting publicity for corporate acts of irresponsibility. Norm development is also an effective means of establishing “soft” principles in an effort to make them “hard” ones in law. Despite the cynicism that living in an era of legal positivism brings when we are dissatisfied with a national legislature or an international standards-setting body, there is a growing sense that national and international institutions are not adequate to solve fundamental human problems, and that efforts to change public opinion in non-governmental venues are important.

The literature on the abuses of native peoples is enormous, and there is a literary tradition of documenting them from the time of Bartolome de Las Casas to the present.²⁰⁵ As the recent news report of the sterilization of native women in Peru shows, those are not things that can be dismissed as problems of the past. A recent decision by the Inter-American Court of Human Rights illustrates that running roughshod over native peoples is still going on today. In that case, the government of Nicaragua leased customary native lands for logging by a foreign corporation. The Inter-American Court of Human Rights found that the lease violated the customary communal ownership rights of the Awas Tingni Indians, and that the violation was also contrary to articles 1 (the obligation to respect rights) and 21 (the right to property) of the American Convention on Human Rights.²⁰⁶ While the lengthy opinion reviews Western legal principles, it also shows a shift in norms applicable to native peoples. There are other recent decisions around the world that are beginning to show the same shift in norms.

There is a great deal of debate over access to, and the use of, genetic materials in the “commons” versus “anticommons” debate. Those who are in favor of advancing genetic research point out that without private ownership of that research, new products, cures, and miracles will not come about. Those who are in favor of common ownership argue that unless everyone can use the resource, it will benefit only those who can afford it. Native peoples have a third kind of claim—“Do not take genetic materials from our bodies, our plants, our animals, or our lands without our permission! We are following your rules—‘This is mine’—and we are ‘yelling loudly enough to all who may be

interested'.²⁰⁷ There is a great deal of discussion in contemporary international property rights law of the possibility of some kind of *sui generis* property protection for native peoples.²⁰⁸ Law should recognize the wishes and desires of native peoples and their consensus on the nature and kinds of protection they need, and it should be based upon the recognition of the World Commission on Environment and Development that native peoples are “vulnerable” but hold keys to the future of humankind. That is a form of “commons” property that is vital to the world, and it should be treated as “sacred” property, as in Roman law. While the modern secular world may not accept the word “sacred” in its religious context, the point is that the property of native peoples is so important to the future of our species (and all species when you get down to it), it must have a guardian. The only appropriate guardian to control access to, and the use of, genetic material is native peoples themselves. As will be addressed in detail below when reviewing European recognition of the property rights of Indians, such rights were recognized, although there were different takes on what property was valuable or what its utility is in the two general cultures.

That leads to a discussion of “cultural property.” It is a term that has developed in modern international law, and it is beginning to be discussed in relation to *sui generis* native property rights. The origin of the term was in the law of war. The earliest definition was that it is “the property of...institutions dedicated to religion, charity, and education, to the arts and to the sciences, even where they belong to the State shall be treated as private property.”²⁰⁹ The definition evolved in the Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954), and Article 1 of that convention provides that:

For the purpose of the present Convention, the term “cultural property” shall cover, irrespective of origin or ownership:

(a) moveable or immovable property of great importance to the cultural heritage of every people, such as monuments of architecture, art or history, whether religious or secular; archaeological sites; groups of buildings which, as a whole, are of historical or artistic, historical or archaeological interest; as well as scientific collections and important collections of books or archives or of reproductions of the property defined above;

(b) buildings whose main and effective purpose is to preserve or exhibit the moveable cultural property defined in sub-paragraph (1) such as museums, large libraries and depositories of archives, and refugees intended to shelter, in the event of armed conflict, the moveable cultural property defined in sub-paragraph (a);

(c) centres containing a large amount of cultural property as defined in sub-paragraphs (a) and (b), to be known as “centres containing monuments.”²¹⁰

Interest in the protection of cultural property expanded, so there are now fourteen international or regional treaties and other international agreements that cover the subject of “cultural protection.”²¹¹

What is “cultural property”? One definition is that:

Cultural property is the most distinguishing form of a culture's expression. It is a culture's archaeological remains, ethnological materials, art, and architecture; its historically and

politically important memorabilia, literature, traditional dance, customs, and ceremonies; and whatever else, tangible or intangible, is believed crucial for defining a people, community, or country. In its broadest sense, cultural property is whatever is thought to make a culture what it is—the forms of expression that consciously determine and identify it.²¹²

The International Law Association, an international legal organization headquartered in London, has a Cultural Heritage Law Committee, and it met at Oxford University in July of 1999 to attempt to bring some order to cultural heritage law.²¹³ It formed to prepare a “blueprint” for the future of cultural heritage law because it has developed in an ad hoc manner, largely in reaction to some particular crisis or situation, and there is a need to find a common approach to its development on an international level.²¹⁴ Noting that there is little consensus on the definition of the term, the committee report had some preliminary discussion of it, pending a catalog of existing definitions.²¹⁵ The report began the attempt at definition by using the ordinary meanings of “culture” and “heritage” in *The Oxford English Dictionary* (Second Edition). “Culture” means “1. Worship; reverential homage; 2. A particular form or type of intellectual development. Also the civilization, customs, artistic achievements etc. of a people especially at a certain stage of its development or history.”²¹⁶ “Heritage” includes “that which has been or may be inherited; any property, and especially land, which devolves by right of inheritance” and “that which comes from the circumstances of birth; an inherited lot or portion; the condition or state transmitted from ancestors.”²¹⁷ The report concluded that “Such definitions highlight the indeterminacy of the larger concept of ‘cultural heritage.’”²¹⁸ It then indicated that the concept of “cultural heritage” could be divided into four primary categories, namely “manmade; non-manmade; immovable; and fixed.” There are also six secondary categories, “(a) underwater cultural heritage; (b) archaeological heritage; (d) natural heritage; (e) cultural property; and (f) cultural objects.”²¹⁹

Thus far, the report would appear to have little interest for native peoples or affect them in any way, although the attempted definition and the definitions above have some relevance to native peoples. The important point is that the committee report specifically included the topic of “Returns of Cultural Heritage to Indigenous Peoples.”²²⁰ It said that the “United Nations Draft Declaration on the Rights of Indigenous Peoples holds considerable promise for addressing issues related to the return of cultural heritage to indigenous peoples.”²²¹ Likely noting the fact that the Declaration has stalled in the United Nations in Geneva, the report continued by noting that “If preparation of the Draft Declaration is delayed substantially or the instrument is not ratified and implemented, it may be necessary to draft a separate declaration or convention solely on the rights of indigenous peoples to the return of cultural heritage.”²²² The report then remarked that the Draft Declaration “may be seen as a triumph of indigenous solidarity and even as a sacred document. It provides ‘the right to the restitution of cultural, intellectual, religious and spiritual property taken without a peoples free and informed consent or in violation of their laws, traditions and customs.’ The Declaration also includes ‘[t]he right to the use and control of ceremonial objects’ and ‘the right to the repatriation of human remains.’”²²³ The committee’s doubts about delay, ratification and implication were justified.²²⁴ The language quoted by the report came under a great deal of fire from a few state members, and there was a great deal of resistance from some members. The reasons for resistance were not articulated fully, and there was a state caucus that met separately to return to the meeting

room to present brackets around language they did not like, and proposals to limit any property right to municipal law.²²⁵

Another issue addressed by the Committee on Cultural Heritage Law in its effort to develop a “blueprint” for that field of law was “cultural rights.”²²⁶ The report cited the cultural rights provisions of the Universal Declaration of Human Rights, and two international conventions, and noted that modern international law recognizes specific cultural rights and important civil rights.²²⁷ Claims to cultural rights include “(a) rights of indigenous peoples; (b) rights to a culture, to exercise a culture, and to have access to culture being asserted at both communal and individual levels; (c) additional language rights; (d) rights to the return of cultural property and of human remains for culturally sympathetic disposal (a claim which runs directly counter to recognized property rights in some legal systems); and (e) new enforcement standards.”²²⁸ It is important that the Committee recognized the linkage between cultural heritage law and the growing international right to culture. That recognizes that “property” is a cultural perspective and not an individualistic “freedom.” It is also important that when the Committee began its outline of issues that fall under the heading of culture, it listed the rights of indigenous peoples as the first of five sub-issues.

A definition of “cultural property” for our purposes is emerging. The Shapiro definition²²⁹ broadens the Western-centered definitions in conventions, to point out that cultural property helps frame a given culture in “forms of expression that consciously determine and identify it.” We can look forward to the Committee on Cultural Heritage Law’s study of definitions, knowing that it has native concerns in mind. The language of the Draft Declaration is a beginning, particularly by defining property in terms of the laws, traditions, and customs of native peoples,²³⁰ but its shortcoming is that the language speaks to the restitution of property.

It is likely that concept of native cultural property began with the 1987 report of the World Commission on Environment and Development.²³¹ The 1992 Convention on Biological Diversity requires contracting parties, “as far as possible and as appropriate,” to:

Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices.²³²

The limitations of that language are obvious: Not all states have ratified the Convention; “as far as possible and appropriate” leaves a great deal of discretion; and the “subject to national legislation” language can either be a prompt for such legislation or an escape clause that subjects the Convention commitment to national legislation that goes against the principles announced in that section.

There is movement, however. An independent international law committee is studying the definition of “cultural property” in a native context and there are discussions of what “cultural property” means

in several venues. For our purposes, the definition of “cultural property” should be oriented to problem-solving. It should address both past abuses in the taking of cultural property and provide for repatriation, and it should recognize property rights grounded in traditional law and customs.²³³ Given the discussion above, it is obvious that there can be no one definition of cultural property, because it is the product of a given culture. That means that whenever an identifiable native group is contacted, or there is entry into its traditional territory, its traditional or modern leadership must know of the presence of any proposed taker of anything there, the taker must explain what is being proposed, there must be full disclosure of what property is to be taken and why, the uses to which it will be put, and the implications of any research. The leadership must have the ability to say “no,” and that decision must be recognized in the national law of the country where the group is located. There also must free and open opportunities to negotiate arms-length agreements for compensation, sharing, and continued traditional uses.

Those considerations are not fully included in international standards at present or in most national legal regimes. Given the limitations in the Convention on Biological Diversity, we now come to the subject of international law to explore its possible remedies.

E. INTERNATIONAL LAW

International law has gone through several major eras. They include *jus gentium* of the Roman period, developments in the middle ages connected with trade, the formative period of “modern” international law connected with the discovery of the Americas, and the development of the “classic” doctrines of that law up to World War II. That war created alliances that led to the formation of the United Nations in 1945, and atrocities committed during the War prompted a new field of international law—human rights law—that changed the course of international diplomacy. Globalization and new problems—many of which arise from strains on the international community caused by the global environment—spawned a long list of international declarations and conventions.²³⁴ Those developments in turn changed the way the international community looks at “customary international law,” and the change encouraged a compromise on agreed standards that aren’t really “hard” principles of law, and are not technically “binding,” called “soft” international law.

This subsection will review the change in the way we look at law, attempt to establish the contemporary state of “customary international law,” define “soft law” and its implications, and attempt a fresh look at the rights of native peoples under customary international law.

One of the modern problems with the concept of law in general is legal positivism. That is a way of looking at law that assumes that law isn’t “law” unless it is enacted by a legislature. On the international level, that is done through the development of negotiated declarations of principles of customary or positive law that are entrenched in treaties for states to adopt or ratify. However, the legal positivist view ignores the role of custom in law. It is the most ancient source of law, and the process of codification is fairly modern.²³⁵ The focus in this subsection is on customary international law, because treaties or international conventions as an approach to our problem will be

discussed in the section on the development of standards, and because there is an argument that native peoples have a cultural property right to genetic materials under *existing* international customary law.

The general definition of the term “international customary law” is that it is a “general recognition among states of a certain practice as obligatory.”²³⁶ The statute of the International Court of Justice provides for the application of “international custom, as evidence of a general practice accepted as law.”²³⁷ Thus the elements of the standard definition of international customary law are the recognition of a general practice that is also viewed as obligatory or binding as law. It is a rule of consent, which can be given expressly, in a treaty, or “it may be implied by a state acquiescing in a customary rule.”²³⁸ One of the biggest contemporary issues in international law is consent to a customary principle, although there is a lot of discussion about when a given practice is so widespread or accepted that it has a binding effect. Therefore, we can use an analogy that international customary law is something like a river that gradually deposits sand as it ebbs and flows. When does a sand bar become an island?

The problem arises from the definition of custom as “evidence of a general practice accepted as law.”²³⁹ Custom is said to have two elements, state practice and *opinio juris*, or following a practice because of a belief that it is a legal obligation.²⁴⁰ Generally speaking, we can say that state practice is action, and *opinio juris* is based on statements, so that actions can create a custom if they are accompanied by statements that compliance with them is “legal.”²⁴¹ The “traditional” definition of customary law is inductive, and it is based upon an examination of specific instances of state practice, and there is “modern” definition that is deductive and focuses upon statements.²⁴² A problem arises because “Modern custom can develop quickly because it is deduced from multilateral treaties and declarations by international fora such as the General Assembly, which can declare existing customs, crystallize emerging customs, and generate new customs.”²⁴³

There is an interesting illustration of *opinio juris* in President Bill Clinton's Executive Order No. 13107 of December 10, 1998.²⁴⁴ The United States relied upon the order before the United Nations Committee Against Torture,²⁴⁵ and in an appearance before the United Nations Committee on the Elimination of Racial Discrimination when the United States was defending its report to the Committee.²⁴⁶ The Committee took favorable note of the presidential executive order in its concluding observations on the United States report.²⁴⁷ The Clinton executive order is unusual, because normally, a human rights treaty automatically becomes the “law of the land” under the Constitution of the United States. However, the United States Senate has engaged in a practice of making reservations to international human rights covenants to assure they cannot be enforced in litigation. For example, when the Senate ratified the International Covenant on Civil and Political Rights, it made a reservation that the covenant would not be self-enforcing without implementing legislation. That is important for native peoples because of the right to culture provisions of article 27. The Clinton executive order carefully stated that it would not create any substantive or procedural right or benefit as against the United States.²⁴⁸ However, the right to enjoy culture in article 27 is also clearly customary,²⁴⁹ so the United States has followed state practice by adopting the convention, and the presidential executive order should constitute *opinio juris* for purposes of

making customary claims.²⁵⁰

International law is unique, because the United Nations is not a legislature, the International Court of Justice (or “World Court”) does not rule on many issues of international interest (and particularly issues involving native peoples), and the practice of national courts making decisions based upon international law varies around the world. Many contemporary international law issues are contentious, such as an international criminal court to deal with humanitarian crimes, international environmental standards, and the rights of indigenous peoples. The definition of “custom” is not settled, although there have been attempts to articulate standards.²⁵¹

Given the principle that conventions, treaties, declarations, or other international instruments may embody and evidence international custom, international law and diplomacy has developed the concept of “soft law.” Non-binding standards are being developed by “global general organizations, global specialized organizations, regional organizations and private groups.”²⁵² That is important, because trade, technological development, and shared international problems have created a need for a broad range of international organizations that go beyond the United Nations. There are several specialized agencies within the U.N., and there are nongovernmental global organizations such as the World Bank. Law “is not the only form of social control or normative claim,”²⁵³ so “soft law” is used to develop agreed standards that may “harden” or become “law” at some point.²⁵⁴ Agreements on “soft” points are used “to avoid formal and visible pledges; to avoid ratification; to be able to renegotiate or modify as circumstances change; and to achieve a result,”²⁵⁵ and “speed, simplicity, flexibility and privacy” are also factors that prompt informal agreements.²⁵⁶

Sometimes, there are surprises that show how “soft” law can become very hard indeed. On October 15, 2001, the Inter-American Commission on Human Rights issued a “preliminary merits report” on an Indian claim against the United States before the Commission.²⁵⁷ If the report is sustained in a final decision, it will set some interesting international precedent on customary law and the interpretation of human rights instruments. Individual Western Shoshone Indians of Nevada filed a claim against the United States that alleged that it violated several provisions of the American Declaration of the Rights and Duties of Man (the “American Declaration”).²⁵⁸ Legal materials cited by the petitioners’ counsel included provisions in the *proposed* American Declaration on the Rights of Indigenous Peoples, the Draft United Nations Declaration on the Rights of Indigenous Peoples (which has not been adopted),²⁵⁹ an Australian High Court decision on land rights,²⁶⁰ and Article 27 of the International Covenant on Civil and Political Rights.²⁶¹ The petitioners cited two declarations that cannot yet be called “soft law” because they have not been adopted, and an international human rights convention that has been ratified by the United States, with a reservation that makes certain it is not part of the domestic law of the United States. The United States protested that it had not adopted the American Convention.²⁶² The Commission explained that although the United States had not done so, Article 20 of the Statute of the Inter-American Commission on Human Rights permits it to “examine communications to it” “to make recommendations to ... states,” “in order to bring about more effective observance of fundamental human rights.”²⁶³

The Commission explained, in discussing the law it would apply, that:

In addressing the allegations raised by the Petitioners in this case, the Commission also wishes to clarify that in interpreting and applying the Declaration, it is necessary to consider its provisions in the context of the international and inter-American human rights systems more broadly, in the light of developments in the field of international human rights law since the Declaration was first composed and with due regard to other relevant rules of international law applicable to member states which complaints of violations of the Declaration are properly lodged. The Inter-American Court of Human Rights has likewise endorsed an interpretation of international human rights instruments that takes into account developments in the *corpus juris gentium* of international human rights law over time and in present-day conditions.²⁶⁴

The Commission further explained that it has “recognized and promoted respect for the rights of indigenous peoples of this Hemisphere” since 1959, and cited its own 1972 resolution on special protection for Indigenous Populations to combat racism and racial discrimination, along with “numerous country and individual reports” adopted by the Commission.²⁶⁵ It then elaborated the rights of the petitioner using the Draft American Declaration of the Rights of Indigenous People, and citing various United Nations documents and a decision by the United Nations Human Rights Commission involving a Canadian Indian claim.²⁶⁶ The Commission’s draft report, along with the *Awas Tingni* decision of the Inter-American Court of Human Rights, firmly establish the right of native peoples to property as a human right. We do not know what the Commission’s final report will say, but the letter from its Executive Secretariat quotes the Commission’s decision in informing the United States it would release the report to the petitioners, and it appears that the Commission will stand its ground.²⁶⁷

There is another approach that can be used to confirm the right of native peoples to a cultural property in genetic materials. The settling of the Americas was a “property” issue, because following Columbus’ return from his first voyage, Spain sent emissaries to Rome to seek papal bulls to confirm its international right to exclusively occupy the lands Columbus had found.²⁶⁸ That was in accord with the practice of the time to obtain papal sanction of a discovery as against other “Christian princes.” Accordingly, in April 1493, Pope Alexander VI issued three bulls, collectively called *Inter Cetera*, that gave the Spanish exclusive rights to explore and settle the New World across a boundary line drawn down the globe. At the time, most of Europe was Catholic, and the papacy asserted the right to resolve international political questions. Most of the writers of the time in what we call “international law” today (rather than *jus gentium* or the “Law of Nations”) were theologians, and international law did not break from theology as a separate discipline until the end of the sixteenth century.²⁶⁹

Soon after Spanish settlement in the Americas, a furor arose over the treatment of Indians, and one of the hotly-debated issues was the basis for the Spanish “right” to take Indian lands and personal property and to enslave Indians. A prominent theologian, and the man many people credit as the “father” of international law, wrote two lectures on the rights of Indians, *Relectiones De Indis* and *De jure belli Hispanorum in Barbaros*.²⁷⁰ Vitoria held that the pope had no authority to grant the New World as property, and that Indians had rights to their own property and government. In 1537, Pope Paul III issued another bill, *Sublimis Deus*, that confirmed the liberty and property rights of

Indians.²⁷¹ Accordingly, the Spanish crown issued a series of decrees that confirmed the property rights of Indians.²⁷²

By that time, the Protestant Reformation had gotten under way, so to what extent did Vitoria's lectures, a papal bull, or Spanish legislative precedent affect the practice of nations and their understanding of the binding nature of an international principle that Indians had property rights that had to be observed? First, although England and other parts of Europe adopted a Protestant faith, Vitoria's lectures were a best-seller in Europe. Another lawyer-priest, Bartolome de Las Casas, also wrote a best seller when he attacked Spanish atrocities against Indians and asserted legal claims on behalf of Indians. His book went into several editions in England. Given that Europeans had very different cultural perceptions of the legal foundation for their possessions in the New World,²⁷³ what was the state practice of the time? The Spanish elaborated the most sophisticated Indian policy, and it clearly honored Indian property rights.²⁷⁴ The first English ventures in the Americas were commercial, and trade was a cornerstone of relations with Indians²⁷⁵ – a relationship built upon an assumption that Indians had property to trade. The same was true of the France,²⁷⁶ The Netherlands and Sweden.²⁷⁷ The British Crown formalized the rights of Indians to their property (particularly land—although trade was also regulated) in the Royal Proclamation of 1763,²⁷⁸ and the Indian law of the new American republic was based on both English and Spanish precedents.²⁷⁹ When World War I ended and the League of Nations was formed in 1919, Article 23(b) of the Covenant provided that members would “undertake to secure just treatment of the native inhabitants of territories under their control.”²⁸⁰

“Native peoples” were created by acts of colonization, and American Indians were the first such peoples. Others were created as colonizing countries fanned out across the globe. There was a general recognition of native property rights in trade relations as the “practice of nations,” and although there was a treat deal of theft and the taking of property by force, property rights were recognized.²⁸¹ A related issue is that of slavery, which was controlled by the Berlin African Treaty of 1885 and the Brussels Treaty of 1890, with commitments to better native living conditions.²⁸² The taking of human genetic materials can be likened to slavery, because they are the plans of the identifies of native peoples, and their very essence.

F. NATIONAL AND MUNICIPAL THEORIES

There are possibilities for various legal remedies under national or municipal law that will be explored here. This section will primarily focus on remedies available under United States law, although native-specific remedies and cases from the United States could be taken to other common law countries, as the United States (a traditionally isolationist legal culture) can use precedents from other common law countries. The four primary areas of concern here are judicial education, the United States Alien Tort Claims Act, common law remedies, and statutes.

One of the problems is that genetics is a fairly new area of technology, and the law has not caught up with the field. In 1987, the (now defunct) Office of Technology Assessment of the United States Congress issued a report on the ownership of human tissues and cells issue.²⁸³ While it overviews

eight possible legal sources of rights relating to human biological materials, the review concluded that the ownership issue was not addressed in law.²⁸⁴ Therefore, a litigation approach to the problem of the misuse of genetic material will call for a great deal of creativity.

Judicial education is important, because while the business world is global, the American judicial system has not caught up with the global age. Discussions of the increase in “off-shore” cases, where causes of action accrue outside the United States, point out that the American judiciary needs an education in contemporary customary human rights law because harms done in foreign lands by large corporations or corporations in conspiracies with the agents of brutal governments need to be remedied.²⁸⁵ Judges must be educated on the international law of native peoples, and they also need to become familiar with the legal aspects of biotechnology.²⁸⁶ Given the harmful effects of genetic prospecting, research, technology, and commercial ventures involving native peoples, American judges will need to become familiar with both those areas as they impact the law. The Alien Tort Claims Act, which is in the original 1789 judicial code for American federal courts, provides that “The district courts shall have original jurisdiction of any civil action by an alien for a tort only, committed in violation of the law of nations or a treaty of the United States.”²⁸⁷ That statute would allow a native group from a foreign country to pursue those who violate international customary law in another country in the United States. Given that it is the home of several large corporations that do business with commercial applications of genetic materials, or a foreign corporation has a presence in the United States,²⁸⁸ the United States is a likely venue for genetic litigation. Another important point is that foreign plaintiffs can sue foreign defendants in either federal or state court using municipal tort law.²⁸⁹ There is a tort-like concept called “enterprise liability,” which deals with “accidental harms to groups of persons and their environments caused by entrepreneurial activity.”²⁹⁰ Although the field of customary international law under the Alien Tort Claims Act is expanding, there is still a great deal of uncertainty and argument about the scope of international customary law. The point of entrepreneurial law is that if a corporation “accidentally” creates an injury, it should pay for the harm that was done.²⁹¹ Native groups have pursued American oil corporations in the United States,²⁹² and the same could be done in genetic malpractice litigation. There are several other possible theories for recovery. Another theory that fits the subject of the abuses of genetics is unjust enrichment.²⁹³ “A claim for unjust enrichment must possess the following elements: (a) an enrichment must accrue to the defendant, (b) the enrichment must occur at the expense of the plaintiff, and (c) the enrichment must be unjust.”²⁹⁴ Those elements apply to many of the takings discussed here, and the primary arguments will be over whether they are “unjust,” in light of contemporary international market morality.

There are two doctrines that are somewhat related, “accession” and “specification.” “Accession doctrine states that the owner of property is entitled to any and all proceeds from that property.”²⁹⁵ That would apply in the situation where genetic material is used to make copies of the particular thing—as with genetic materials for seeds or animals. “A subset of accession doctrine, known as specification, vests full title in the individual who added the most value to the final product.”²⁹⁶ Accession should be particularly helpful in situations where a medicine is developed from a native plant. The problem will be getting a court to recognize an individual’s or a group’s right of “property” in such material, but restitution and unjust enrichment are doctrines that address the issue

of fairness.

The issue of who “owns” genetic materials is unsettled. The leading American case at this point is *Moore v. Regents of the University of California*,²⁹⁷ and it held that in a situation where a patient’s spleen and biological samples were used to establish a commercial cell line, there was no cause of action for conversion.²⁹⁸ However, the physician who appropriated Moore’s genetic materials recognized their potential value before he consented to surgery, and the Court ruled there was a cause of action for the breach of the doctor’s disclosure obligations.²⁹⁹

An American legal doctrine that is also in the law of common law countries is negligence, and it could prove to be very useful in light of developments in the field of genetics. The usual formula is that the breach of a legal duty that is the proximate cause of an injury is the ground for liability. One specific principle in negligence is “informed consent,” where there is liability if a medical procedure was used without obtaining the consent of the patient after giving that patient meaningful information to make a choice.³⁰⁰ That is a meaningful analogy, because the principle of “informed consent” is central to many discussions of genetic abuses. In most situations involving native peoples, the question is informed consent before the taking of genetic materials from plants, animals, or humans. The difficulty is that the application would be related to unjust enrichment, where a researcher or company takes genetic material without consent or the payment of fair value. In the situation where researchers obtain samples of material where the consent was for something else (e.g. paternity testing), the problem would be proving damages.

Another negligence-related issue is the source of duties. There is a great deal of discussion of ethics codes and other standards in the field of genetics. Could they be the basis for liability? While courts are suspicious of professional or industry standards and guidelines because they are often self-serving, such policies or codes can be the basis for a duty and negligence liability.³⁰¹ In the medical field, clinical practice guidelines establish the standard of care, and they are being increasingly relied upon as an alternative to expert testimony.³⁰²

One of the contentious issues of international law that can be addressed in United States domestic law, is group or collective rights. While the concept of such rights is contested in international law and diplomacy (particularly as regards the rights of native peoples), the American class action is a means of asserting the rights of groups as “classes” under that uniquely-American procedural device.³⁰³

American native groups have a variety of statutes and regulations they can rely upon for relief—although the amount of relief to be obtained is debatable. They include the American Indian Religious Freedom Act, the National Historical Preservation Act, Executive Order 13007 on native sacred sites, the Native American Graves Protection and Repatriation Act, a National Park Service policy on cultural resource management, the National Environmental Policy Act, and the American Antiquities Act.³⁰⁴

G. NORM- AND STANDARDS-SETTING ACTIVITIES

One of the features of international law following World War II that typifies modern international law is norm- and standards-setting. A “norm” is rules of conduct, and “standards” are measures of compliance or technical objectives.³⁰⁵ Activities to establish international rules of conduct, objectives, and ways to measure compliance are many and varied. They range from United Nations General Assembly resolutions and the approval of international conventions, to the work of U.N. organs, regional bodies (such as the Organization of American States), world financial institutions (such as the World Bank), and a wide variety of private international organizations and associations. This section will bypass a discussion of norm- and standards-setting activities on the rights of native peoples in general, and instead focus upon the issue of cultural property in relation to such activities.

The activities with respect to native cultural property began with the 1987 World Commission on Environment and Development report.³⁰⁶ Its recommendations were incorporated in Article 8(j) of the Convention of Biological Diversity that was adopted at the Rio de Janeiro Earth Summit in 1992.³⁰⁷ That provision requires state parties to the Convention to “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity; promote their wider application with the approval and knowledge of knowledge-holders; and encourage the equitable sharing of benefits arising from the utilization of such knowledge, innovations and practices.”³⁰⁸ The Convention recognition of the cultural rights of indigenous peoples prompted norm- and standards-setting activities that are directly related to its provisions, and subsidiary activities by other international bodies, primarily those that deal with environment, intellectual property rights, and cultural issues. There are many international governmental organizations,³⁰⁹ intellectual property and bioethics organizations,³¹⁰ and private or nongovernmental international organizations that are dealing with the issue of native cultural property rights.

Work to implement the Biodiversity Convention in general, and the provisions of Article 8(j) in particular, is done by the Conference of the Parties to the Convention on Biological Diversity (“COP”) and by the *Ad Hoc* Open-ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity. The Working Group is particularly important, because native organizations participate in its sessions.³¹¹ The Working Group and the COP study issues of native cultural property and rights to genetic materials (or the right to control them), and the COP adopted the *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization* at the Sixth Conference of the COP (“COP-6”) at The Hague, Netherlands, in April 2000.³¹² While native groups complained that the guidelines are weak, they are a small step forward in setting standards for issues such as the participation of stakeholders, access to genetic resources and sharing, and informed consent.

There is some cynicism about the effectiveness of United Nations advances in the environment (and the related issue of indigenous knowledge),³¹³ and there are many challenges to bringing a rule of law to environmental governance,³¹⁴ there are certain potentials for such work. That is, while most of the activities in the field of international environmental law and indigenous knowledge develop “soft” international law principles, it is possible that they could become “hard” in national litigation or proceedings in international fora (such as the Inter-American Commission on Human Rights or

the Inter-American Court), and to the extent that resource-bearing or resource-target countries adopt such principles in law or policy, then resource exploiters or developers from the industrialized countries will be bound by them.

Another organization that is taking steps in the field is the World Intellectual Property Organization (WIPO). It has met several times to consider the interplay among general intellectual property law, traditional native knowledge and folklore, and genetic resources.³¹⁵ This organization also moves slowly, but it has its own methods of rulemaking and standards-development,³¹⁶

There is tension between the work of these standard-setting organizations and another ad hoc international organization—the World Trade Organization (WTO).³¹⁷ The issue is the encouragement and protection of intellectual property rights law in international trade, using trade sanctions and WTO dispute resolution mechanisms as the means of enforcing things such as rights to patented genetic material belonging to native peoples, and the various international organization efforts to recognize and protect them.

Another major player is the United Nations Educational, Scientific and Cultural Organization (UNESCO), and in 1999, it adopted the *Universal Declaration on the Human Genome and Human Rights* to attempt an articulation of international human rights standards for the subject. UNESCO has also been active in following up on the international issue of human rights standards for genetics and intellectual property.³¹⁸ UNESCO appears to operate in a more rarified atmosphere, dealing not only with human rights but cultural property issues, but the dates of its meetings evidence a high level of interest in the issues.

The United Nations Development Program is also involved, in its Civil Society Organizations & Participation Programme, with (for example) a study of new ways to address alternatives to intellectual property rights for native peoples,³¹⁹ and compiling a collection of native statements and other declarations on their rights.³²⁰ In a related action, the Sub-Commission on Prevention of Discrimination and Protection of Minorities of the Commission on Human Rights adopted indigenous heritage guidelines that also stress the ownership of heritage.³²¹

While there are complaints about the World Trade Organization having hegemony over resources and intellectual property rights, it is interesting to observe the activities of its financiers. For example, the World Bank is taking an interest in native issues,³²² and the Asian Development Bank has adopted a policy on indigenous peoples that largely restates—with approval—the development of positive standards for native peoples.³²³

In addition, various governmental and nongovernmental international organizations are adopting codes of conduct for genetic research and the activities of multinational enterprises.³²⁴ Some of the initiatives include The Bellagio Declaration on intellectual property rights,³²⁵ the World Medical Association Declaration of Helsinki,³²⁶ and the International Law Association's draft resolution on Principles of International Law Relating to Sustainable Development.³²⁷

The problem with most of these initiatives is that they are “soft” law, and they are not the “hard” kind of international legal protection native peoples want, given the immediacy of the assault on their genetic resources. However impatient we may be with the international process, the fact is that the issues of abuses of genetic research and marketing, resource exploitation, and the obviously-inequitable treatment of native peoples are on the table internationally. The pleas of native peoples to “keep out” and “stay away” are being heard to some extent. The remaining question is what native peoples themselves can do to protect their own rights.

H. CONCLUSIONS ABOUT THE RIGHT

The foregoing explorations of international and domestic law and norm- and standards-setting activities largely identify non-native laws and institutions. Are they relevant to native institutions? They vary around the world. The United States recognizes native groups as political entities with self-governing powers. Canada has some limited recognition of similar political power, and in other countries, self-governance is only being talked about or such is not permitted. There is a trend in the direction of recognizing self-governance. What can be done with it?

There is an interesting double bind in the United States. In 1999, an interagency working group was discussing Article 8(j) of the Convention on Biological Diversity, and it “raised the question whether federal law imposes limits upon indigenous communities’ own efforts to protect indigenous knowledge through direct restrictions on members’ ability to reveal such knowledge to outside researchers.”³²⁸ The opinion—using general American constitutional principles—indicated that there might be some limits on an Indian nation’s powers under the Indian Civil Rights Act, but the question was difficult to answer in the abstract. It also speculated about whether or not an Indian nation could simply declare a resource to be its property, and there was no firm conclusion. The problem is that ordinarily, a litigant cannot get federal court review of civil statutes or decisions under the Indian Civil Rights Act, so Indian nations have a fair degree of control.

Some Indian nations have enacted legislation to regulate and limit research.³²⁹ The Indigenous Peoples Council on Biocolonialism developed a model *Indigenous Research Protection Act*,³³⁰ and the American Indian Law Center, Inc. has a *Model Tribal Research Code*.³³¹ Those kinds of legislation are important, because they give some control. There are enforcement difficulties, however. Given the existence of human gene banks outside native areas where massive amounts of genetic material have already been gathered, and given the means of casual access to native areas for bioprospecting, such codes can be difficult to enforce. Enforcement mechanisms are also expensive in terms of administrative cost. Another problem is that unless a researcher or commercial firm actually enters a native area to conduct activities there, a native court would have no jurisdiction.³³² There are also limitations on civil jurisdiction over non-members.

Native peoples should take advantage of the property law concept that they should assert a right of property and do so loudly and clearly. They should, to the extent possible, adopt their own research or exploration standards and laws. In those countries where native self-government or the power to make laws is not recognized, native groups should adopt statements and standards in any event, and

continue working with regional and international organizations to have such declarations confirmed.

One of the unaccomplished tasks for native groups is educating their own members. This survey reviewed a lot of literature (with a good deal of it remaining uncited in this work), and there is little material to evidence (aside from regional or international native conferences) that grassroots people have been alerted to the issues. History tells us that Europeans who wanted Indian land didn't always try to identify the true leaders of an area to buy land, and there was a crisis in early American property law over non-Indians who appeared in court to claim land rights under color of various deeds granted by individual Indians. The practice of taking blood and tissue samples of individuals would be shocking to many members of native groups, and it has taken some local organization and recognition that there is a group identity to combat the theft of local plant and animal resources.

This review shows that issues of native property rights, and the more specific issue of the control of genetic materials, are peaking. There is sufficient international interest in the cultural right that soft norms are now materializing rapidly, and there are possibilities of litigation to protect individual and group rights. Native peoples have a receptive audience in various governmental and non-governmental organizations, including scientific organizations that set standards for genetic research.

The picture can be made to appear rosy, when it is not. The West still does not understand the issues from a native point of view, and historical abuses continue to date. However, the issues are serious, and there is an opportunity for native peoples to recognize the problem, organize to meet it, and take both internal and external action. At end, the native peoples of the world have a social and historical mortgage on the land and resources, and that may be the most valuable property right of all.

ENDNOTES

¹ “The earliest known inhabitants of a region can variously be called *native*, *indigenous*, or *aboriginal* peoples. Of these terms, *native* and *aboriginal* stand out as having acquired certain stereotypical connotations that render them offensive to many people.” THE AMERICAN HERITAGE BOOK OF ENGLISH USAGE § 48 (1996) (italics in the original). Despite that, when we use one of the three terms, a writer should use the term used by the peoples that writer works with.

² See REPORT OF THE ROYAL COMMISSION ON ABORIGINAL PEOPLES (1996) (comprehensive report on the situation of Aboriginal Peoples in Canada, with recommendations that are currently being debated).

³ For a discussion of the definition, see Department of the Parliamentary Library, *The Definition of Aboriginality*, RESEARCH NOTE NO. 18, 200-01 (noting that there have been 67 different definitions of “Aboriginal people” in Australia). See also LAW REFORM COMMISSION, PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA, REPORT NO. 31, THE RECOGNITION OF ABORIGINAL CUSTOMARY LAWS (1986) (two volume study of the nature of Aboriginal customary law and recommendations on its use in Australian domestic law).

⁴ MAIVAN CLECH LAM, AT THE EDGE OF THE STATE: INDIGENOUS PEOPLES AND SELF-DETERMINATION 4-5 (2000).

⁵ *Id.* at 5.

⁶ G.A. Res. 217A (III) (10 December 1948).

⁷ G.A. Res. 2200A (XXI) (16 December 1966).

⁸ *Id.* One of the difficulties with the right is that “minority” is not defined. Lam, *supra* note 4, at 5.

⁹ FRANCESCO CAPOTORTI, STUDY ON THE RIGHTS OF PERSONS BELONGING TO ETHNIC, RELIGIOUS AND LINGUISTIC MINORITIES, U.N. Doc. E/CN.4/Sub.2/384/Rev. 1 (1979) (survey of rights under international customary law).

¹⁰ *Id.*, at 7; Lam, *supra* note 4, at 5.

¹¹ Lam, *Id.* at 4. For example, Indians are about 70% of the population in Guatemala, and natives are majorities in Greenland (90%) and Bolivia (66%). *Id.*, and *Id.* n. 25.

¹² Bruce B. MacLachlan, *Indian Law and Puebloan Tribal Law*, in NORTH AMERICAN INDIAN ANTHROPOLOGY: ESSAYS ON SOCIETY AND CULTURE 340, 343 (Raymond J. Bemallie & Alfonso Ortiz, eds. , 1994).

¹³ *Id.*

¹⁴ *Id.*, at 7.

¹⁵ See Karen Engle, *Culture and Human Rights: The Asian Values Debate in Context*, 32

INTN'L. L. & POLITICS 291 (2000) (review of the larger debate over objections to "Western" human rights law and specific debates over the rights of indigenous peoples).

¹⁶ The Sub-Commission transmitted the Draft Declaration on the Rights of Indigenous Peoples to the Commission on Human Rights in 1996, and it has been under study since that time. Lam, *supra* note 4, at 6.

¹⁷ *Id.* at 8.

¹⁸ *Id.*

¹⁹ *Id.* at 8 note 9.

²⁰ U.S. National Security Council, *Position on Indigenous Peoples* Par. 7 (January 18, 2001), <<<http://www1.umn.edu/humanrts/usdocs/indigenou.doc.html>>> (Visited on April 21, 2002). It is curious that the United States positions on the rights of indigenous peoples in international bodies are driven by the National Security Council, a body that advises the U.S. president on strategic issues. These instructions also indicate that in the absence of a definition in the final draft of the Declaration on the Rights of Indigenous Peoples that the United States will define "indigenous peoples" using the domestic law of "federally recognized tribes." *Id.* That is a much narrower definition than that contained in ILO Convention 169, which the United States has not ratified.

²¹ Lam, *supra* note 4, at 6-7 (quoting Erica-Irene A. Daes, Chair of the United Nations Working Group on Indigenous Populations).

²² Not all peoples in the Americas are eligible for "indigenous" status as far as the United States is concerned. It intends to include only "recognized [Indian] tribes" under domestic law (ignoring tribes that are not recognized, Native Hawaiians, and groups that might qualify under the ILO Convention); the political rights position of "non-status" Indians (who are also not "recognized") in Canada is unclear; and there are Utilitarian *mestizaje* policies in some Latin countries (Mexico is a leading example) that consider indigenous groups to be part of the general population.

²³ *Supra* note 9.

²⁴ U.S. DEPARTMENT OF ENERGY & THE HUMAN GENOME PROJECT, TO KNOW OURSELVES 4 (1996).

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.* For other explanations of the genome, genomics (the science that studies it), and medical genetics see U.S. DEPARTMENT OF ENERGY HUMAN GENOME PROGRAM, GENOMICS AND ITS IMPACT ON MEDICINE AND SOCIETY: A 2001 PRIMER (2001), and *General Principles of Medical Genetics*, in THE MERCK MANUAL OF DIAGNOSIS AND THERAPY, <<<http://www.merck.com/pubs/mmanual/section21/chapter286/286a.htm>>>. There is a collection of articles from the journals SCIENCE and NATURE on genetics at <<<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed>>>.

//ornl.gov.hgmis/project/journals.html>> (visited on April 5, 2002) (Oak Ridge National Laboratory).

²⁸ U.S. Department of Energy, *Id.*

²⁹ *Id.* “Polymer” is an organic chemistry term for “a large molecule formed by the union of at least five identical monomers.” *Polymer*, Academic Press, <<<http://www.academicpress.com/insight/11041999/polymer4htm>>> (visited on July 19, 2002).

³⁰ U.S. Department of Energy *supra*, note 27.

³¹ *Id.*

³² Theodore G. Schurr, *The Story in Genes: Genetic Research Finds More, Older Options for First Americans*, SCIENTIFIC AMERICAN DISCOVERING ARCHAEOLOGY 59 (January/February 2000) (“First Americans” is another name for the native peoples of the Americas).

³³ *Id.* (There is also a graphic showing what is “Inside a Cell”).

³⁴ *Id.*

³⁵ *Id.*

³⁶ Svante Paabo, *The Human Genome and Our View of Ourselves*, 291 SCIENCE 1219 (16 February 2001).

³⁷ Aravinda Chakravarti, *...to a future of genetic medicine*, 409 NATURE 822-823 (15 February 2001).

³⁸ Gerardo Jimenez-Sanchez, Barton Childs & David Valle, *Human disease genes*, 409 NATURE 853 (15 February 2001).

³⁹ Eric J. Nestler & David Landsman, *Learning about addiction from the genome*, 409 NATURE 834 (15 February 2001).

⁴⁰ Peter McGuffin, Brien Riley & Robert Plomin, *Toward Behavioral Genomics*, 291 SCIENCE 1232 (2001).

⁴¹ James M. Jeffords & Tom Daschle [United States Senate], *Political Issues in the Genome Era*, 291 SCIENCE 149 (15 February 2001).

⁴² WORLD HEALTH ORGANIZATION, GENOMICS AND WORLD HEALTH: REPORT OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH 118 (2002).

⁴³ Declan Butler, *Are you ready for the revolution?* 409 NATURE 758, 759 (15 February 2001).

⁴⁴ John Charles Kunich, *Mother Frankenstein, Doctor Nature, and the Environmental Law of Genetic Engineering*, 75 S. CAL. L. REV. 807 (2001).

⁴⁵ *Id.* at 809.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.* at 810.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.* at 811.

⁵³ *Id.*

⁵⁴ *Id.* at 812.

⁵⁵ Diane Martindale, *Pink Slip in Your Genes*, SCIENTIFIC AMERICAN (January 2001), <<<http://www.sciam.com/2001/0101issue/0101scicit2.html>>> (visited on April 23, 2002) (including the results of other surveys making the same findings).

⁵⁶ Advisory Committee *supra* note 42, at 107.

⁵⁷ *Id.* at 108.

⁵⁸ *Id.*

⁵⁹ *Id.* at 110. We should recall what happened with global settlement when new flora and fauna were introduced into lands where they had no natural competition or a predator, e.g. rabbits in Australia. New species can be difficult to control and they can create unexpected hazards and problems, with overpopulation, crowding out native plants or animals, etc.

⁶⁰ *Id.* at 111.

⁶¹ *Id.* at 111-112.

⁶² *Id.* at 112.

⁶³ *Id.*

⁶⁴ One example is the use of blood samples drawn from Navajos for paternity tests in speculative genetic tracking of ancient Navajo migration times and routes when the Navajos from whom the blood was drawn did not know of, or consent to, such uses.

⁶⁵ Advisory Committee, *supra* note 42, at 114.

⁶⁶ *Id.*, at 114, 117. Pages 115 through the top of 117 are devoted to small case studies of public, private, and mixed approaches to the extensive gathering of genetic materials from the populations of Iceland, Estonia, and Tonga. Each has a unique population, with an isolated Nordic population in Iceland, and an indigenous population in Tonga. Those studies show the political, economic, and public-private problems generated by such efforts, and the political and social controversies that resulted.

⁶⁷ *Id.* at 117.

⁶⁸ *Id.* at 118.

⁶⁹ *Id.* Eugenics is a particular concern for native peoples as distinct and easily-identifiable groups. It is the abandoned “science” that some people are biologically and thus “naturally” better than others. It spawned bizarre racial policies in Nazi Germany (and elsewhere), and an examination of official and popular policies in countries with significant numbers of native peoples shows that while eugenics may be abandoned officially, its philosophies are still present in social settings. Eugenics was a product of social Darwinism—a force that still influences policies and attitudes affecting native peoples. Eugenic thinking is still there. *See, e.g.* Jane Lawrence, *The Indian Health Service and the Sterilization of Native American Women*, 24(3) AMERICAN INDIAN Q. 4000 (Summer 2000) (study of a controversy over whether the American Indian Health Service intentionally sterilized Indian women because they were Indians).

⁷⁰ Advisory Committee *Id.* at 120-122.

⁷¹ *See*, John Ross, *Genetic engineering threatens Mexico’s corn culture*, in SIERRA MAGAZINE (2001), <<http://www.sierraclub.org/sierra/200109/food_printable.asp>> (story on the introduction of Bt-modified corn in Indian areas of Mexico, and the dangers of cross-pollination with traditional Mexico corn and dangers to Monarch butterflies. Ross is a noted reporter on native issues in Mexico).

⁷² THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 114-116 (1987).

⁷³ *Id.* at 114-115.

⁷⁴ *Id.* at 114.

⁷⁵ Keith Aoki, *Neocolonialism, Anticommons Property, and Biopiracy in the (Not-So-Brave) New World Order of International Intellectual Property Protection*, 6 Ind. J. Global Leg. Stud. 11, 24 (1998).

⁷⁶ Annie O. Wu, *Surpassing the Material: The Human Rights Implications of Informed Consent in Bioprospecting Cells Derived from Indigenous People Groups*, 78 WASH. U. L. Q. 979, 983-984 (2000). Wu explains that isolated populations have minimal gene flow so that there are genetic markers that make it possible to study genetic evolution. *Id.* at note 32. That shows the basis for the efforts to do massive genetic material collections in Iceland and Tonga, above.

⁷⁷ Jack Weatherford did an outstanding job of cataloging the many contributions the native peoples of the Americas have given the world. JACK WEATHERFORD, NATIVE ROOTS: HOW THE INDIANS ENRICHED AMERICA (1991) & INDIAN GIVERS: HOW THE INDIANS OF THE AMERICAS TRANSFORMED THE WORLD (1988). The basic concept is sharing. The author has heard Indian Elders explain that their ancestors had no problem sharing the land and resources with the newcomers, but they wonder why such sharing

has not been reciprocated. Reciprocal relations are essential to native thinking.

⁷⁸ See, KURT MENDELSSOHN, *THE SECRET OF WESTERN DOMINATION* (1976) (the “secret” is the possession of the fundamentals of Western natural science and the technology that flows from it).

⁷⁹ ELI SAGAN, *AT THE DAWN OF TYRANNY: THE ORIGINS OF INDIVIDUALISM, POLITICAL OPPRESSION AND THE STATE* 239 (1985).

⁸⁰ JOHN ELLIS, *THE SOCIAL HISTORY OF THE MACHINE GUN* 33, 102 (1987). Poet Halaire Belloc put it bluntly: “Whatever happens, we have got/ The Maxim Gun, and they have not.” *Id.* at 94.

⁸¹ The difference in world views respecting property, based upon separate cultural appreciations of what is or is not “valuable,” is another difference that comes from the time of first contacts. See Christopher L. Miller & George R. Hamell, *A New Perspective on Indian-White Contact: Cultural Symbols and Colonial Trade*, in *AMERICAN ENCOUNTERS: NATIVES AND NEWCOMERS FROM EUROPEAN CONTACT TO INDIAN REMOVAL, 1500-1850* 177 (Peter C. Mancall & James H. Merrell, eds., 2000) and KAREN ORDAHL KUPPERMAN, *INDIANS & ENGLISH: FACING OFF IN EARLY AMERICA* 175 (2000) (explaining that in Early Virginia, Indian leaders tried making the English their “clients” while the English had the same idea, with different perspectives of trade).

⁸² Yvonne Cripps, *Patenting Resources: Biotechnology and the Concept of Sustainable Development*, 9 *INDIANA J. GLOBAL LEG. STUD.* 119, 120-121 (2001).

⁸³ *Id.* at 128.

⁸⁴ *Id.* at 128-129.

⁸⁵ Aoki *supra* note 75, at 53 & Wu *supra* note 76, at 985.

⁸⁶ Cripps *supra*, note 82.

⁸⁷ Renee Ruble, *American Indians faulting wild rice genetic research*, St. Paul Pioneer Press (May 21, 2002).

⁸⁸ See, Gregory Conko & C. S. Prakash, *Report of Transgenes in Mexican Corn Called into Question*, ISB NEWS REPORT 3 (March 2003) (Information Systems for Biotechnology, Blacksburg, Virginia) & PEW INITIATIVE ON FOOD AND BIOTECHNOLOGY, *GENETICALLY ENGINEERED CORN AND THE MONARCH BUTTERFLY CONTROVERSY* (2002). The Conko and Prakash article is a pro-industry piece, and it discusses a controversy over an article in the journal *NATURE* raising the possibility of gene contamination. The NEWS REPORT article indicates that the possibility of genetic contamination “has not been disputed.” The Pew Initiative piece is a study of a similar situation, where an article in *NATURE* triggered speculation that modified Bt corn pollen might spread to milkweed and pose a danger to butterflies. Both *NATURE* articles created a fierce debate in popular media. The Pew piece concludes that later research discounted any danger to butterflies,

but that research should have been done before the Bt corn was approved in the first place.

⁸⁹ Steve Olson, *The Genetic Archaeology of Race*, THE ATLANTIC MONTHLY 69 (April 2001) (caps in the original).

⁹⁰ *Are the Saami An Indigenous People?* VARAS NEWS (March 3, 1999), <<<http://www.saamiweb.org/english/news/220236.html>>> (visited on April 3, 2002).

⁹¹ *Id.*

⁹² See, Kimberly TallBear, *Genetics, Culture and Identity in Indian Country* (October 2000) (discussion of identity issues).

⁹³ *Id.*

⁹⁴ Brett Lee Shelton & Jonathan Marks, *Genetic "Markers"—Not a Valid Test of Native Identity* (Indigenous Peoples Council on Biocolonialism Briefing Paper, May 2001).

⁹⁵ See Dorothy Nelkin, *A Brief History of the Political Work of Genetics*, 42 JURIMETRICS J. 121 (2002).

⁹⁶ There is a review of the native migration literature in Ripan S. Malhi, Jason A. Eshleman, Johnthan A. Greenberg, Deborah A. Weiss, Beth A. Schultz Shook, Frederika a. Kaestle, Joseph G. Lorenz, Brian M. Kemp, John R. Johnson, and David Glenn Smith, *The Structure of Diversity within New World Mitochondrial DNA Haplogroups: Implications for the Prehistory of North America*, 70(4) AM. J. GENET. 905 (2002).

⁹⁷ Satoshi Horai, Rumi Kondo, Yuko Nakagawa-Hattori, Seiji Hayashi, Shunro Sonoda, and Kazui Tajima, *Peopling of the Americas, Founded by Four Major Lineages of Mitochondrial DNA*, 10(1) MOL. BIOL. EVOL. 23 (1993).

⁹⁸ *Id.* at 25.

⁹⁹ *Id.* at 27.

¹⁰⁰ *Id.* at 32.

¹⁰¹ *Id.* at 33. Is it unusual to indicate that a limited number of Indians fall within "racial" groups? They authors do not explain the geographic differentiation of Indians from both North and South America.

¹⁰² *Id.* at 41.

¹⁰³ *Id.* at 41, 44.

¹⁰⁴ *Id.* at 44.

¹⁰⁵ *Id.*

¹⁰⁶ Michael D. Brown, Seyed H. Hosseini, Antonio Torrini, Hans-Jurgen Bandelt, Jon C. Allen, Theodore G. Schurr, Rosaria Scozzari, Rosaria Scozzari, Fulvio Cruciani & Douglas C. Wallace, *mtDNA Haplogroup X: An Ancient Link between Europe/Western Asia and North*

America, 63 AM. J. GENET. 1952 (1998).

¹⁰⁷ *Id.* at 1853.

¹⁰⁸ *Id.* It is interesting that the Israeli samples were identified as “Druze,” because that is a religion. The authors do not explain that distinction or why they chose a religious group.

¹⁰⁹ *Id.* at 1855.

¹¹⁰ *Id.* at 1856.

¹¹¹ *Id.*

¹¹² *Id.* at 1857.

¹¹³ *Id.*

¹¹⁴ *Id.* at 1857, 1858.

¹¹⁵ *Id.* at 1858. How and when that admixture occurred is not explained.

¹¹⁶ *Id.* at 1859.

¹¹⁷ *Id.*

¹¹⁸ A review of this study was posted on the worldwide web under the title *Genetic Research Confirms Whites Are The True “Native Americans.”* <<<http://home.digital.net/~kenaston/Celtic/WhiteIndians.html>>> (visited on July 25, 2002).

¹¹⁹ Schurr *supra* note32.

¹²⁰ *Id.* at 60.

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.* The intersections of Europe, the Middle East and West Asia are a rather large region.

¹²⁴ *Id.*

¹²⁵ Ripan S. Malhi, et als. *supra* Note 96.

¹²⁶ *Id.* at 907.

¹²⁷ *Id.*

¹²⁸ *Id.* While Navajos were placed in haplogroup “X” above, “Athapaskan-speaking individuals in the Southwest, whose mtDNA identity was assigned to haplogroup A were placed in the Northwest region category.” *Id.* Navajos and Apaches are the only Athapaskan-speaking natives in the Southwest.

¹²⁹ *Id.* at 907-908.

¹²⁷ *Id.* at 908.

¹²⁸ *Id.*

¹²⁹ *Id.* Strangely, while the authors put X in Greenland, they stated that “no Native American samples typed from Greenland to date can be assigned to haplogroup X.” *Id.*

¹³⁰ *Id.* at 913.

¹³¹ *Id.* at 916 (citations omitted).

¹³² Peter A. Underhill, Li Jin, Rachel Zemans, Peter J. Oefner & L. Luca Cavalli-Sforza, *A pre-Columbian Y chromosome-specific transition and its implications for human evolutionary history*, 93 PROC. NATL. ACAD. SCI. 196 (1996).

¹³³ *Id.* at 197.

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.* at 198.

¹³⁷ *Id.* at 199.

¹³⁸ *Id.* at 198.

¹³⁹ *Id.* at 199.

¹⁴⁰ Fabricio R. Santos, Arpita Pandya, Chris Tyler-Smith, Sergio D.J. Pena, Moses Schanfield, William R. Leonard, Ludmila Osipova, Michael H. Crawford & R. John Mitchell, *The Central Siberian Origin for Native American Y Chromosomes*, 64 AM. J. HUM. GENET. 619, 621 (1999).

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.* The last two sentences are not typographical errors. The authors said that haplotype 10 was found “exclusively” among North American Indians, but also on one Mongolian and four Indian (from India) samples.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 625.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*, Figure 3.

¹⁵⁰ *Id.* at 626.

¹⁵¹ *Id.*

¹⁵² Horai, *supra* note 97, at 25.

¹⁵³ Underhill, *supra* note 132, at 199.

¹⁵⁴ Malhi, *supra* note 96, at 916.

¹⁵⁵ Santos, *supra* note 140, at 620.

¹⁵⁶ The author must, of necessity, paint with a rather broad brush here. There are thousands of native cultures in the world, and many may not have the belief about to be described. However, many do.

¹⁵⁷ NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES & NATIONAL HUMAN GENOME RESEARCH INSTITUTE, AMERICAN INDIAN AND ALASKA NATIVE GENETIC RESEARCH POLICY FORMULATION MEETING: SUMMARY MEETING REPORT (February 7-9, 2001).

¹⁵⁸ *Id.* at 7. One of the sticking points in the relationship of native peoples and dominant societies is the use of words such as “taboo” to describe native thinking. The governor’s position is set out at greater length in Malcolm B. Bowekaty, *Perspectives on Research in American Indian Communities*, 42 JURIMETRICS J. 145 (2002).

¹⁵⁹ National Institute, *Id.* at 8.

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² *Id.* at 9.

¹⁶³ *Id.* at 9-10.

¹⁶⁴ *Id.* at 10. This is also a jurisdiction issue. Aside from native governments being unable to control samples given at a blood bank or in paternity testing, they cannot control the sharing of materials outside of native areas.

¹⁶⁵ HUMAN GENOME DIVERSITY PROJECT, MODEL ETHICAL PROTOCOL FOR COLLECTING DNA SAMPLES, <<<http://www.stanford.edu/group/morrinst/hgdp/protocol.html>>> (visited on July 25, 2002). The model ethical protocol is also published at 33(5) HOUSTON L. REV. 1431 (1977) (with the word “Proposed” at the beginning of the article title).

¹⁶⁶ *Id.*

¹⁶⁷ Fortunately, the model ethical protocol flatly states, in section IV.A.2, that group consent is required, and that if a given group does not want to participate, that will bind the researcher. *Id.* Unfortunately, disappointed researchers may still be able to go to large collections of genetic material to get the refusing group’s DNA.

¹⁶⁸ MAUREEN TRUDELLE SCHWARZ, MOLDED IN THE IMAGE OF CHANGING WOMAN: NAVAJO VIEWS ON THE HUMAN BODY AND PERSONHOOD 115 (1997).

¹⁶⁹ CLYDE KLUCKHOHN & DOROTHEA LEIGHTON, *THE NAVAHO* 312 (1974).

¹⁷⁰ The author has been describing the genetic studies on the land bridge theory involving Navajos to his spouse and relatives, and they are shocked at the use of Navajo genetic materials for such purposes.

¹⁷¹ VINE DELORIA, *RED EARTH, WHITE LIES: NATIVE AMERICANS AND THE MYTH OF SCIENTIFIC FACT* (1995).

¹⁷² See, Russell Lawrence Barsh, *Are Anthropologists Hazardous to Indians' Health*, 15(4) *J. ETHNIC STUD.* 1 (1987) (summing up the history of abusive research).

¹⁷³ For example, the Inter-American Commission on Human Rights accepted a petition against Peru, alleging that poor, indigenous, and rural women were being involuntarily sterilized, or sterilized without informed consent, and that 243 such cases had been identified. INTER-AMERICAN COMMISSION ON HUMAN RIGHTS, REPORT NO. 66/00, MARIA MAMERITA MESTANZA CHAVEZ, Par. III.A.3 (October 3, 2000). The case was settled in 2001, and the news of the day is that more than 200,000 people were pressured into being sterilized by the government, and many of them were native women. BBC News World Edition, *Mass sterilisation scandal shocks Peru* (Wednesday, 24 July, 2002).

¹⁷⁴ When the author visited Bolivia in 1974, he realized that the colorful native dress of derby or fedora hats for women and men wearing serapes was a means to identify Indians from outside Spanish settlements—an intentional way to identify people. What can be done if there is indeed a “native gene”?

¹⁷⁵ See C. Gregory Smith, E. Veenhuis & J. Newton MacCormack, *Bioterrorism: A New Threat with Psychological and Social Sequelae*, 61(3) *N.C. Med. J.* 150 (May/June 2000) (review of the techniques, social-psychological impacts, and prevention and intervention measures to deal with the problem).

¹⁷⁶ *Id.* While the authors traced haplogroups through out North America, they probably meant the United States here.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.* at 152. For a discussion of the use of disease in the New World, intentionally or unintentionally introduced, see NOBLE DAVID COOK, *BORN TO DIE: DISEASE AND NEW WORLD CONQUEST, 1492-1650* (1998).

¹⁷⁹ See, Sandra Soo-Jin Lee, Joanna Mountain, and Barbara A. Koenig, *The Meanings of “Race” in the New Genomics: Implications for Health Disparities Research*, 1 *YALE J. HEALTH POL’Y, LAW & ETHICS* 33 (2001) (arguing against the use of racial classifications in genetics research). See also, SANDER L. GILMAN, *DIFFERENCE AND PATHOLOGY: STEREOTYPES OF SEXUALITY, RACE, AND MADNESS* (1985) (history and discussion of the uses and misuses of stereotypes).

¹⁸⁰ See, Carol M. Rose, *Possession as the Origin of Property*, in ROBERT C.

ELLICKSON, CAROL M. ROSE & BRUCE A. ACKERMAN, PERSPECTIVES ON PROPERTY LAW 181-189 (2nd ed. 1995).

¹⁸¹ *Id.* at 183.

¹⁸² *Id.* at 184.

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 187-188.

¹⁸⁵ *See*, PATRICIA SEED, CEREMONIES OF POSSESSION IN EUROPE'S CONQUEST OF THE NEW WORLD 1492-1640 16 (1995) (English concepts of possession of the New World through houses, gardens and fences as a cultural perception).

¹⁸⁶ *See*, Kenneth H. Bobroff, *Retelling Allotment: Indian Property Rights and the Myth of Common Ownership*, 54(4) VANDERBILT L. REV. 1559 (2001) (reviewing indigenous private property systems in addition to communal ownership concepts) and Bruce L. Benson, *An Evolutionary Contractarian View of Primitive Law: The Institutions and Incentives Arising Under Customary Indian Law*, 5 REV. AUSTRIAN ECON. 41 (1991) (finding both communal and individual property ownership in the Indian societies he studied).

¹⁸⁷ Rose *supra* note 180, at 181, 184.

¹⁸⁸ John Ladd, *Colonialism and the Moral Philosophers*, <<<http://wwwlaw.murdoch.edu.au/balayi/v1n1/ladd.shtml>>> (visited on July 25, 2002).

¹⁸⁹ ALAN WATSON, ROMAN LAW & COMPARATIVE LAW 48-49 (1991).

¹⁹⁰ *Id.* at 44.

¹⁹¹ *See*, Michael A. Heller, *Three Faces of Private Property*, 79(2) OR. L. REV. 417 (2000) (defining the terms).

¹⁹² Carol M. Rose, *Romans, Roads, And Romantic Creators: Traditions of Public Property in The Information Age* (paper prepared for the Conference on the Public Domain, Duke Law School, November 2001).

¹⁹³ *Id.* at 4.

¹⁹⁴ *Id.* at 5.

¹⁹⁵ *Id.* at 8.

¹⁹⁶ *Id.* at 17.

¹⁹⁷ *Id.* at 21.

¹⁹⁸ That would be done as with capturing fish or game, in Roman law. *Id.* at 4. One item in this classification is "enemy property." *Id.* The *res nullius* doctrine was used to seize native lands, and it is usually written about as open land, ignoring native ownership. Here we see a different view of it as "enemy property," with native peoples as enemies.

¹⁹⁹ *Id.* at 8.

²⁰⁰ *Id.* at 17.

²⁰¹ *Id.* at 17, 18.

²⁰² *Id.* at 18.

²⁰³ *Id.* at 21.

²⁰⁴ *Id.*

²⁰⁵ See *The Case of the Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, Inter-American Court of Human Rights Judgment of August 31, 2001 (Recognition of native customary ownership of land under article 21, the right to property, of the American Convention on Human Rights).

²⁰⁶ *Supra* note 191.

²⁰⁷ Carol M. Rose, *Left Brain, Right Brain and History in the New Law and Economics of Property*, 79(2) OR. L. REV. 479 (2000).

²⁰⁸ Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94(1) NORTHWESTERN U. L. REV. 77 (1999).

²⁰⁹ Jane B. Brown, *Review Essay: The Expressive Transparency of Property*, 102 COLUMBIA L. REV. 208, 209 (2002). See also Eric J. Mitnick, *Taking Rights Spherically: Formal and Collective Aspects of Legal Rights*, 34 WAKE FOREST L.R. 209 (1999) (arguing that “rights” cannot be understood unless they are considered in light of collective relationships); and Glenn Harlan Reynolds, *Essay: Chaos and the Court*, 91 COLUM. L. REV. 110 (1991) (suggesting that we should use modern scientific chaos theory to reconsider the tradition of fixed and immutable legal categories).

²¹⁰ Brown *Id.* at 211.

²¹¹ See, e.g. the influential book, ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

²¹² See Rai, *supra* note 208; and Jeffrey J. Rachlinski, *The Limits of Social Norms*, 74 CHICAGO-KENT L. REV. 1537 (2000) (Review of social norm theory in law).

²¹³ See Dan M. Kahan, *Privatizing Punishment: Strategies for Private Norm Enforcement in the Inner-City*, 46 UCLA L. REV. 1933 (1999) (Use of community institutions to deal with social ills).

²¹⁴ See Darlene R. Wong, *Stigma: A More Efficient Alternative to Fines in Deterring Corporate Misconduct*, 3 CAL. CRIM. L. REV. 3 (2000). Wong and others writing in this field suggest that positive reinforcement in praising those who are responsible is effective.

²⁰⁵ Las Casas was a sixteenth century priest-lawyer who began the Western tradition of documenting abuses against native peoples. BARTOLOME DE LAS CASAS, A SHORT

ACCOUNT OF THE DESTRUCTION OF THE INDIES (1992).

²⁰⁶ The Case of the Mayagna (Sumo) Awas Tingni Community v. Nicaragua *supra* note 205.

²⁰⁷ Rose *supra* note 180, at 184.

²⁰⁸ See, Michael Halewood, *Indigenous and Local Knowledge in International Law: A Preface to Sui Generis Intellectual Property Protection*, 44 MCGILL L.J. 953 (1999) for a review. See also Benedict Kingsbury, *Reconciling Five Competing Conceptual Structures of Indigenous Peoples' Claims in International and Comparative Law*, 34 INTN'L L. & POLITICS 101, 103, 112 (2001) (*sui generis* nature of indigenous rights).

²⁰⁹ CITY UNIVERSITY LONDON, DEPARTMENT OF ARTS POLICY AND MANAGEMENT, COMPARISON OF DEFINITIONS OF CULTURAL PROPERTY IN DIFFERENT INTERNATIONAL INSTRUMENTS, <<<http://www.city.ac.uk/artspol/cult-def.html>>> (visited on February 23, 2002) (collection of definitions from various instruments).

²¹⁰ Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954), in THE LAWS OF WAR: A COMPREHENSIVE COLLECTION OF PRIMARY DOCUMENTS ON INTERNATIONAL LAWS GOVERNING ARMED CONFLICT 97 (W. Michael Reisman & Christ T. Antoniou, eds. 1994). See also, UNESCO, LEGAL PROTECTION FOR CULTURAL HERITAGE, <<<http://firewall.unesco.org/culture/legal/protection/>>> (visited on April 23, 2002) (listing of international conventions pm cultural property).

²¹¹ There are thirteen listed in the Fletcher School of Tufts University Ginn Library, <<<http://www.fletcher.tufts.edu/multi/cultural/html>>> (visited on April 3, 2002), and the United Nations Educational, Scientific and Cultural Organization (UNESCO) approved the Convention on the Protection of the Underwater Cultural Heritage on November 2, 2001.

²¹² Daniel Shapiro, *Repatriation: A Modest Proposal*, 31 INTN'L L. & POL. 95, 96 (1998).

²¹³ COMMITTEE ON CULTURAL HERITAGE LAW, INTERNATIONAL LAW ASSOCIATION, A BLUEPRINT FOR THE DEVELOPMENT OF CULTURAL HERITAGE LAW: FIRST REPORT (2000).

²¹⁴ *Id.* at 1.

²¹⁵ *Id.* at 3.

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.* at 4.

²²¹ *Id.*

²²² *Id.*

²²³ *Id.* 4-5.

²²⁴ The author has participated in two sessions of the Intersessional Working Group on the Draft Declaration on the Rights of Indigenous Peoples in Geneva, including one in November of 2000 when indigenous property rights provisions were discussed.

²²⁵ *See*, LUIS-ENRIQUE CHAVEZ, DRAFT REPORT OF THE WORKING GROUP ESTABLISHED IN ACCORDANCE WITH COMMISSION ON HUMAN RIGHTS RESOLUTION 1995/32, E/CN4/2000WG.15/CRP.1 (27 November 2000).

²²⁶ Committee on Cultural Heritage Law *supra* note213, at 11.

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ *Supra* note212.

²³⁰ A provision that alarmed several state representatives in Geneva in November 2000.

²³¹ *Supra* note 72.

²³² Convention on Biological Diversity, Sec. 8(j) (1992).

²³³ There is a solid tradition in Spanish, English, and American law of honoring rights established in customary law. *See*, James W. Zion & Robert Yazzie, *Indigenous Law in North America in the Wake of Conquest*, 20(1) BOSTON COLL. J. INTN'L & COMP. L. 55 (1997).

²³⁴ *See* Antony Anghie, *Time Present and Time Past: Globalization, International Financial Institutions, and the Third World*, 32 INTN'L L. & POL. 243 (2000); Peter J. Spiro, *Globalization, International Law, and the Academy*, 32 INTN'L L. & POL. 567 (2000); and Colin B. Picker, *A View From 40,000 Feet: International Law and the Invisible Hand of Technology*, 23(1) CARDOZO L. REV. 149 (2001).

²³⁵ A good way to illustrate that is to go into a law library and look at a collection of English statutes. The volumes of statues are fairly few and slim until modern times, in comparison with a collection of case reports. *See* HAROLD J. BERMAN, *LAW AND REVOLUTION: THE FORMATION OF THE WESTERN LEGAL TRADITION* (1983) (legal history showing the historical interplay between custom and modern legal positivism).

²³⁶ J. L. BRIERLY, *THE LAW OF NATIONS: AN INTRODUCTION TO THE INTERNATIONAL LAW OF PEACE* 61 (1973). *See also*, IAN BROWNLIE, *PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 4 (1990) (citing Brierly with approval).

²³⁷ Brownlie *Id.*, at 3 (reproducing Article 38 of the Statute of the International Court of Justice).

²³⁸ Brierly *supra* note236, at 51.

²³⁹ Anthea Elizabeth Roberts, *Traditional and Modern Approaches to Customary International Law: A Reconciliation*, 95 AM. J. INT'L. L. 757 (2001) (quoting Art. 38(1)(b) of the Statute of the International Court of Justice).

²⁴⁰ *Id.*

²⁴¹ *Id.*

²⁴² *Id.* at 758.

²⁴³ *Id.*

²⁴⁴ Executive Order 13107, *Implementation of Human Rights Treaties* (December 10, 1998) (issued in conjunction with the 50th anniversary of the Universal Declaration of Human Rights).

²⁴⁵ Remarks of Harold Hongju Koh, U.S. Assistant Secretary of State for Democracy, Human Rights & Labor, Geneva, Switzerland (May 10, 2000).

²⁴⁶ U.S. Assistant Attorney General Ralph F. Boyd, Jr., *Reply of the United States to Questions from the U.N. Committee on the Elimination of Racial Discrimination* (August 6, 2001).

²⁴⁷ Committee on the Elimination of Racial Discrimination, *Concluding observations of the Committee on the Elimination of Racial Discrimination: United States of America*, A/56/18, paras. 380-407 (August 14, 2001).

²⁴⁸ Executive Order 13107 *supra* note 244, § 6(a).

²⁴⁹ *See Capotorti supra*, note 9.

²⁵⁰ The author is not certain that a customary claim would be entertained in United States courts in light of the Senate reservation and the language in the executive order. The author's attempt to utilize article 27 customary rights before the adoption of the covenant was rejected in the case of *Kicking Woman v. Hodel*, 878 F.2d 1203 (9th Cir. 1989). A January 29, 2000 memorandum by Randolph D. Moss, the Acting Assistant Attorney General of the United States, *Legal Effectiveness of a Presidential Directive, As Compared to an Executive Order*, states that a directive is the same as an executive order, and that such documents remain in effect until future presidential action is taken.

²⁵¹ *See, e.g.*, INTERNATIONAL LAW ASSOCIATION, STATEMENT OF PRINCIPLES APPLICABLE TO THE FORMATION OF GENERAL CUSTOMARY INTERNATIONAL LAW (2000) (This statement is important, because it was adopted by a private international law association, and the Committee on Formation of Customary (General) International Law that developed the statement had broad international representation).

²⁵² Dinah Shelton, *Law, Non-Law and the Problem of "Soft Law,"* in COMMITMENT AND COOPERATION: THE ROLE OF NON-BINDING NORMS IN THE INTERNATIONAL LEGAL SYSTEM 1, 3 (2000).

²⁵³ *Id.* at 8.

²⁵⁴ *Id.* at 15.

²⁵⁵ *Id.* at 11 note 14 (summarizing C. Lipson).

²⁵⁶ *Id.*

²⁵⁷ Report No. 113/01, Case No. 11.140, Mary and Carrie Dann United States (October 11, 2001). A July 26, 2002 letter from the Commission's Executive Secretariat accompanying a copy of the report to the petitioner's attorneys explained that normally a preliminary merits report is confidential, pending the State's opportunity to review and comment, but since the United States permitted the report to be partially published in a Bureau of Land Management press release on a web site, a copy was provided to the petitioners. It went on the petitioner's counsels' web site immediately (Indian Law Resource Center).

²⁵⁸ *Id.* at 1.

²⁵⁹ *Id.* at 9, 10.

²⁶⁰ *Id.* at 12.

²⁶¹ *Id.* at 13, 14.

²⁶² *Id.* at 23.

²⁶³ *Id.* at 23 note 55.

²⁶⁴ *Id.* at 23-24 (footnotes to citations omitted; italics in the original).

²⁶⁵ *Id.* at 30.

²⁶⁶ *Id.* at 32-33.

²⁶⁷ July 26, 2002 letter from Ariel Dulitzki, "In charge of the Executive Secretariat," to S. James Anaya, Deborah Schaaf, Steven Tullberg and Julie Ann Fishel, Indian Law Resource Center.

²⁶⁸ See James Muldoon, *Papal Responsibility for the Infidel: Another Look at Alexander VI's Inter Caetera*, 64 CATHOLIC HIST. REV. 168 (1978) (providing the historical context for the bulls and their interpretation).

²⁶⁹ Brierly *supra* note 236, at 25-27.

²⁷⁰ *Id.* at 26. While the two works are described as "lectures" they read like theological texts. FRANCISCI DE VICTORIA, DE INDIS ET DE IVRE BELLI RELECTIONES (Ernest Nys ed., 1964).

²⁷¹ See Alberto de La Hera, *El Derecho de Los Indios a La Libertad y a La Fe*, 26(1) ANUARIO DE HISTORIA DEL DERECHO ESPANOL (1956) (comprehensive examination of papal bulls on Indians and their relation to the development of Spanish Indian policy).

²⁷² See SPANISH LAWS CONCERNING DISCOVERIES, PACIFICATIONS, AND

SETTLEMENTS AMONG THE INDIANS (S. Lyman Tyler, ed. 1980) (collection of Spanish legal decrees in English, showing the Spanish preoccupation with Indian property and other rights).

²⁷³ See Seed, *supra*, note 185 (Discussing the different cultural understandings of England, France, Spain, and Portugal).

²⁷⁴ See Charles Gibson, *Spanish Indian Policies*, in HISTORY OF INDIAN-WHITE RELATIONS 96 (Wilcomb E. Washburn, ed. 1988).

²⁷⁵ Wilbur R. Jacobs, *British Indian Policies to 1783*, in *Id.* at 5.

²⁷⁶ Mason Wade, *French Indian Policies*, in *Id.* at 20.

²⁷⁷ Francis Jennings, *Dutch and Swedish Indian Policies*, in *Id.* at 13.

²⁷⁸ GORDON BENNETT, ABORIGINAL RIGHTS IN INTERNATIONAL LAW 7 (1978).

²⁷⁹ FRANCIS PAUL PRUCHA, AMERICAN INDIAN POLICY IN THE FORMATIVE YEARS: THE INDIAN TRADE AND INTERCOURSE ACTS, 1790-1834 (1970); Felix F. Cohen, *The Spanish Origin of Indian Rights in the Law of the United States*, 31 GEO. L.J. 1 (1942).

²⁸⁰ *The League of Nations Covenant (1919)*, in THE HUMAN RIGHTS READER 151 (Walter Laquer & Barry Rubin, eds. 1989).

²⁸¹ See Glenn T. Morris, *International Law and Politics: Toward a Right to Self-Determination for Indigenous Peoples*, in THE STATE OF NATIVE AMERICA: GENOCIDE, COLONIZATION, AND RESISTANCE, 55, 64-65 (m. Annette Jaimes ed., 1992) (discussing the *realpolitik* of the European recognition of Indian sovereignty and possessory rights), and Francis Jennings, *Conquest and Legal Fictions*, 23 (1&2) OKLAHOMA C. U. L. REV. 141 (1998) (historical context of the origins of Indian legal fictions in English colonial practice).

²⁸² Bennett *supra* note 278, at 8.

²⁸³ OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, NEW DEVELOPMENTS IN BIOTECHNOLOGY: OWNERSHIP OF HUMAN TISSUES AND CELLS—SPECIAL REPORT, OTA-BA-337 (1987); See also Michael M.J. Lin, *Conferring a Federal Property Right in Genetic Material: Stepping into the Future with the Genetic Privacy Act*, 22(1) AM. J. L. & MED. 1 (1996) (review of remedies and proposed legislation).

²⁸⁴ *Id.*, at 69-89.

²⁸⁵ See Anita Bernstein, *Conjoining International Human Rights Law with Enterprise Liability for Accidents*, 40 WASHBURN L. J. 382 (2001) & Aaron Xavier Fellmeth, *Wiwa v. Royal Dutch Petroleum Co.: A New Standard for the Enforcement of International Law in U.S. Courts?* 5 YALE H.R. & DEVT. J. 241 (2002).

²⁸⁶ See E. Richard Gold, *Hope, Fear, and Genetics: Judicial responses to biotechnology*,

83(3) JUDICATURE (November-December 1999), <<[http://www.ornl.gov/hgmis/publicat/judicature/article 7.html](http://www.ornl.gov/hgmis/publicat/judicature/article%207.html)>> (visited on March 8, 2002). *See also* STATE JUSTICE INSTITUTE: A JUDGE'S DESKBOOK ON THE BASIC PHILOSOPHIES AND METHODS OF SCIENCE 205 (1999) (chapter on DNA evidence). This work is available at <<<http://www.unr.edu/bench/>>>.

²⁸⁷ 28 U.S.C. § 1350.

²⁸⁸ In the case of *Wiwa v. Royal Dutch Petroleum Company*, 226 F.3d 88 (2nd Cir. 2000), the courts upheld jurisdiction over Dutch and English companies because the defendants had an investor relations office in New York City. *Fellmeth supra* note285, at 246.

²⁸⁹ *Bernstein supra* note285, at 401.

²⁹⁰ *Id.* at 384.

²⁹¹ *Id.* at 405-406.

²⁹² *See* Debra Abelowitz, *Discrimination and Cultural Genocide in the Oil Fields of Ecuador: The U.S. as a Forum for International Dispute*, 7 N.E. INTN'L & COMP. L. ANNUAL 145 (2001). The leading working lawyer's litigation manual is BETH STEPHENS & MICHAEL RATNER, *INTERNATIONAL HUMAN RIGHTS LITIGATION IN U.S. COURTS* (1996).

²⁹³ David N. Fagan, *Achieving Restitution: The Potential Unjust Enrichment Claims of Indigenous Peoples Against Multinational Corporations*, 76 N.Y. U. L. REV. 626 (2001).

²⁹⁴ *Id.* at 640.

²⁹⁵ *Lin supra* note283, at 10.

²⁹⁶ *Id.*

²⁹⁷ 793 P.2d 479 (Cal. 1990), *cert. denied*, 499 U.S. 936 (1991).

²⁹⁸ *Id.* at 497; *Lin supra* note283, at 5.

²⁹⁹ *Moore Id.*, at 485; *Lin Id.*

³⁰⁰ *See* Linda Farber Post, Jeffrey Blustein, Elysa Gordon & Nancy Neveloff Duber, *Pain: Ethics, Culture, and Informed Consent to Relief*, J. L. MED. & ETHICS 348, 351-352 (1996).

³⁰¹ *See* Angela Campbell & Kathleen Cranley Glass, *The Legal Status of Clinical and Ethics Policies, Codes, and Guidelines in Medical Practice and Research*, (2001) 46 MCGILL L.J. 473 (surveying Canadian and American case law).

³⁰² Albert Tzeel, *Clinical Practice Guidelines and Medical Malpractice*, THE PHYSICIAN EXECUTIVE 36 (March-April 2002).

³⁰³ *See* Kathryn L. Boyd, *Collective Rights Adjudication in U.S. Courts: Enforcing Human Rights at the Corporate Level*, 1999 BRIGHAM YOUNG U. L. REV. 1139 (review of

international human rights litigation in United States courts, including native rights litigation, and concluding that class action litigation is a means of framing and asserting collective rights).

³⁰⁴ See *U.S. Laws & Court Cases Involving Sacred Lands*, <<<http://www.sacredland.org/legal.html>>> (visited on April 26, 2002).

³⁰⁵ Shelton, *supra* note 252, at 5.

³⁰⁶ *Supra* note 72.

³⁰⁷ *A Brief History of Article 8(J) and Related Provisions Under the CBD* [Convention on Biological Diversity], 9(228) EARTH NEGOTIATIONS BULLETIN 1 (11 February 2002).

³⁰⁸ *Id.*

³⁰⁹ See Northwestern University Library, *International Governmental Organizations*, <<<http://www.library.northwestern.edu/govpub/resource/internat/igo.html>>> (visited on April 20, 2002).

³¹⁰ See *Intellectual Property, Bioethics and Biotechnology Organizations, U.S. Agencies and Bioethics Journals*, <<<http://www.intelliwareint.com/RELATED%BIOLINKS.htm>>> (visited on March 27, 2002).

³¹¹ See 9 (228) EARTH NEGOTIATIONS BULLETIN (11 February 2002) (relating the work of the second meeting of the Working Group in Montreal).

³¹² VI/24, Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization.

³¹³ See Matthew Heimer, *The UN Environment Programme: Thinking Globally, Retreating Locally*, 1 YALE HUMAN RTS. & DEVT. L.J. 129 (1998). For a comprehensive examination of the issues, see BARBARA LAINE KEGEDAN, *THE BIODIVERSITY CONVENTION, INTELLECTUAL PROPERTY RIGHTS, AND OWNERSHIP OF GENETIC RESOURCES: INTERNATIONAL DEVELOPMENTS* (1996) (study prepared for the Intellectual Property Directorate, Industry Canada).

³¹⁴ See, UNITED NATIONS UNIVERSITY, *UNU REPORT: INTERNATIONAL ENVIRONMENTAL GOVERNANCE: PRELIMINARY REPORT* (2002) (report to a preparation conference for the World Summit on Sustainable Development, September 2002).

³¹⁵ See, e.g. WIPO GENERAL ASSEMBLY, *MATTERS CONCERNING INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE*, No. WO/GA/26/6 (25 August 2000); SHAKEEL BHATTI, *INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE: THE WORK AND ROLE OF THE WORLD INTELLECTUAL PROPERTY ORGANIZATION* (2000); WORLD INTELLECTUAL PROPERTY ORGANIZATION, *INTELLECTUAL PROPERTY NEEDS AND EXPECTATIONS OF TRADITIONAL KNOWLEDGE HOLDERS: WIPO REPORT ON FACT-FINDING MISSIONS ON INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE* (1998-1999) (April 2001); and WORLD INTELLECTUAL PROPERTY

ORGANIZATION, WIPO INTERNATIONAL FORUM ON “INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE: OUR IDENTITY, OUR FUTURE” (January 2002).

³¹⁶ See Edward Kwakwa, *Some Comments on Rulemaking at the World Intellectual Property Organization*, 12 DUKE J. OF COMP. & INT’L L. 179 (2002) (review by the WIPO Assistant Legal Counsel).

³¹⁷ See Antony Anghie *supra* note 234 (assessment of global movements and defense of third world-native rights under the law of colonialism). See also Joost Pauwelyn, *The Role of Public International Law in the WTO: How Far Can We Go?*, 95 AM. J. INTN’L L. 535 (2001) (the WTO follows general principles of international law; review by a member of the WTO Legal Affairs Division), and John H. Jackson, *Fragmentation or Unification Among International Institutions: The World Trade Organization*, 31 INTN’L & POLITICS 823 (1999) (the WTO and international law).

³¹⁸ See, e.g. JUSTICE MICHAEL KIRBY, RAPPOREUR, DRAFT REPORT ON THE FOLLOW-UP OF THE INTERNATIONAL SYMPOSIUM ON “ETHICS, INTELLECTUAL PROPERTY AND GENOMICS, SHS-503/01/CIB-8/2 (29 August 2001); MEHMET OZTURK, RAPPOREUR, REPORT OF THE IBC [INTERNATIONAL BIOETHICS COMMITTEE] ON SOLIDARITY AND INTERNATIONAL CO-OPERATION BETWEEN DEVELOPED AND DEVELOPING COUNTRIES CONCERNING THE HUMAN GENOME, BIO-7/00/GT-2/3 (Rev. 1); and DIVISIONS OF HUMAN SCIENCES, PHILOSOPHY AND ETHICS AND TECHNOLOGY, ROUND TABLE OF MINISTERS OF SCIENCE ON “BIOETHICS INTERNATIONAL IMPLICATIONS,” SHS/HPE/01/MINSC/2 (22 September 2001).

³¹⁹ CSOPP Documents: *Conserving Indigenous Knowledge-Integrating New Systems of Integration*, <<<http://www.undp.org/csopp/NewFiles/dociknowledge4.html>>> (visited on March 27, 2002).

³²⁰ UNDP Indigenous Peoples, *Resource Center: Documents-Declarations*, <<<http://www.undp.org/csopp/CSO/NewFiles/ipdocdec.html>>> (visited on March 27, 2002).

³²¹ Sub-Commission on Prevention of Discrimination and Protection of Minorities, *Principles & Guidelines for the Protection of the Heritage of Indigenous People*, No. E/CN.4/Sub. 2/1995/25 (21 June 1995).

³²² See Shelton H. Davis, *The World Bank and Indigenous Peoples*, www.worldbank.org (visited on May 5, 2002), and *Key Resources for Indigenous Knowledge and Practices*, *Id.* (visited on March 27, 2002) (resource for World Bank indigenous knowledge activities).

³²³ ASIAN DEVELOPMENT BANK, POLICY ON INDIGENOUS PEOPLES (n.d.) (given the debate in Asia over whether or not it has indigenous peoples, the existence of a policy for them by a development bank in the region is interesting).

³²⁴ See Willem van Genugten & Sophie van Bijsterveld, *Codes of Conduct for Multinational Enterprises: Useful Instruments or a Shield Against Binding Responsibility?* 7 TULBURG FOR. L. REV. 161 (2002) (review of the codes and an assessment of how they can

be used in favor of, or against, the enforcement of human rights).

³²⁵ Society for Critical Exchange, *The Bellagio Declaration from the 1993 Rockefeller Conference "Cultural Agency/Cultural Authority: Politics and Poetics of Intellectual Property in the Post-Colonial Era*, <<<http://www/cwru.edu/942480/affil/sce/BellagioDec.html>>> (Visited on April 23, 2002).

³²⁶ WORLD MEDICAL ASSOCIATION, DECLARATION OF HELSINKI: ETHICAL PRINCIPLES FOR MEDICAL RESEARCH INVOLVING HUMAN SUBJECTS (June 1964).

³²⁷ International Law Association, Committee on Legal Aspects of Sustainable Development, Proposed Draft Resolution (April 2002).

³²⁸ Randolph D. Moss, Acting Assistant Attorney General, *Tribal Restrictions on Sharing of Indigenous Knowledge on Uses of Biological Resources* (October 12, 1999).

³²⁹ E.g. the Navajo Nation Health Research Code, Navajo Nation Council Resolutions CO-106-95 (October 25, 1995) and CAP-16-02 (April 24, 2002).

³³⁰ INDIGENOUS PEOPLES COUNCIL ON BIOCOLONIALISM, INDIGENOUS RESEARCH PROTECTION ACT (n.d.).

³³¹ AMERICAN INDIAN LAW CENTER, INC., MODEL TRIBAL RESEARCH CODE: WITH MATERIALS FOR TRIBAL REGULATION FOR RESEARCH AND CHECKLIST FOR INDIAN HEALTH BOARDS (3rd ed. 1999).

³³² *Hornell Brewing Co. v. Rosebud Sioux Tribal Court*, 133 F.3d 1087 (8th Cir. 1998).