

8-1-2019

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Rebecca Tsosie, *Tribal Data Governance and Informational Privacy: Constructing "Indigenous Data Sovereignty"*, 80 Mont. L. Rev. 229 (2019).

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TRIBAL DATA GOVERNANCE AND INFORMATIONAL PRIVACY: CONSTRUCTING “INDIGENOUS DATA SOVEREIGNTY”

Rebecca Tsosie*

I. INTRODUCTION

There is a growing movement among Indigenous peoples to assert a right to “Indigenous data sovereignty,” and yet, the term “data sovereignty” is not widely understood. What does it mean to control the collection, use and management of information in an era of “Big Data,” in which digital technology transforms knowledge into electronic form, to be freely used and traded, and, sometimes even commodified? More importantly, what are the interests of Native nations and other Indigenous peoples in these topics? Is political status tied to governance authority? If so, who controls the terms of data sovereignty—the Indigenous nation or the nation-state?

Proponents of Indigenous data sovereignty assert that Native nations and other Indigenous peoples ought to control the collection and use of data by and about them, and they link this normative claim to political and moral claims of “self-determination.”¹ There is clearly a basic need for tribal governance authority over information about the tribes, their resources, and their members, but there are also considerable challenges that must be considered.² Specifically, there are various meanings that could attach to an assertion of data sovereignty, and each of these has different implications. For example, by defining a group interest in data about tribal members, such as educational attainment or health disparities, there is a concomitant concern to protect the rights of the tribal members—who possess individual

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1. See Victoria Tauli-Corpuz, *Preface*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* xxi, xxi–xxii (Tahu Kukutai & John Taylor eds., 2016). This volume is the most comprehensive resource to date on Indigenous Data Sovereignty and is heavily cited in this essay.

2. *Id.* at xxi–xxii.

rights—such as the right to privacy.³ Furthermore, the data about tribal members is often housed within repositories operated by federal or state agencies. The data is gathered according to the priorities of those agencies, and access is determined by the rules of those governments.⁴ These rules might well protect the privacy interests of named individuals. However, they are far less likely to protect a tribe’s collective interest in exercising control over the use and disposition of the data or remediating harm that arises from the release of data to third parties.⁵

Some scholars have drawn a distinction between “data sovereignty” and “data governance.”⁶ Data sovereignty describes the right of a nation to “govern the collection, ownership and application of data”⁷ concerning the tribe or its members and to control data that is housed within tribal territory. Data governance,⁸ on the other hand, refers to a tribal government’s right to control the use or reuse of tribal data by third parties, even if the data was gathered in the context of earlier research studies.⁹ In the latter case, the term “tribal data” would be invoked to describe categories of information subject to tribal rights of ownership and control, allowing the tribe to include or exclude others from access to the data.¹⁰ This is important because, as some analysts have noted, “data are people too.”¹¹ For example, a health study of diabetes among tribal members requires researchers to take physical samples from participants, as well as information about his or her family members and lifestyle choices, such as diet and exercise habits.¹² The health information is associated with the person, and, even if the data is “de-identified” in the future to meet privacy restrictions, that information is the person.¹³ For this reason, the tribal government has a strong interest in

3. C. Matthew Snipp, *What Does Data Sovereignty Imply: What Does it Look Like?*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 39, 48 (Tahu Kukutai & John Taylor eds., 2016).

4. *Id.* at 46–47.

5. *Id.* at 48–49 (discussing cases where this occurred).

6. Professor Stephanie Carroll Rainie, one of the leading proponents of Indigenous data sovereignty, draws this distinction. Stephanie C. Rainie et al., *Data as a Strategic Resource for Self-Determination, Governance and the Data Challenge for Indigenous Nations in the United States*, 8 *INT’L INDIGENOUS POL’Y J.*, 1, 5–6 (2017).

7. *Id.* at 6.

8. *Id.*

9. *Id.*

10. Tahu Kukutai & John Taylor, *Data sovereignty for indigenous peoples: current practice and future needs*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 1, 7 (Tahu Kukutai & John Taylor eds., 2016).

11. Joanna Radin, “*Digital Natives*”: *How Medical and Indigenous Histories Matter for Big Data*, 32 *OSIRIS* 43, 62 (2017) (referring to comments by Rebecca Lemov and Dan Bouk).

12. *Id.*

13. *Id.*

exercising its sovereignty to protect the interests of its members, and some tribal leaders might even consider this a sacred responsibility.¹⁴

The discourse about Indigenous data sovereignty demonstrates that tribal governments are seeking a corrective for past wrongs, as well as to develop a more equitable structure of data governance for the future.¹⁵ The existing legal and policy frameworks for data governance, however, are rooted in the same power structures that inform national and international decision-making. Indigenous peoples do not have the same standing as nation-states to control the acquisition and use of information at the national and global levels.¹⁶ On the other hand, federally-recognized tribal governments do possess the authority to enact laws at the tribal level. Although jurisdictional limitations may exist, tribal laws can help inform analogous federal and state policies governing data, for example, by defining what constitutes “tribal data” and what would be appropriate ways to secure tribal consent to collection, use or disposition of such data.

This essay discusses tribal claims to data sovereignty and informational privacy, examining the nature of the respective claims, as well as how tribal governments can exercise effective authority over the collection and use of data about the community and its members. This is a complex and multifaceted inquiry, and this essay provides only an initial analysis for consideration. As Kukutai and Taylor note, Indigenous data sovereignty raises “a wide-ranging set of issues, from legal and ethical dimensions around data storage, ownership, access and consent, to intellectual property rights and practical considerations about how data are used in the context of research, policy and practice.”¹⁷ The issues are raised, in part, because of past research misconduct that harmed Indigenous peoples and their members.¹⁸ The main purpose of this essay is to identify the legal principles that control data governance within domestic and international law and explore how tribal sovereignty is impacted by these principles and their associated policies. This essay argues for a critical look at the structures for data governance and the need for intergovernmental cooperation between tribal, federal and state governments and their agencies. Governance of emerging technologies presents new challenges for governments throughout the

14. Desi Rodriguez-Lonebear, *Building a Data Revolution in Indian Country*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 253, 268 (Tahu Kukutai & John Taylor eds., 2016) (citing interview with a tribal leader).

15. Kukutai & Taylor, *supra* note 10, at 4–5.

16. *Id.* at 1–3.

17. *Id.* at 2.

18. See *infra* notes 213–21 and accompanying text (discussing the claim of the Havasupai Tribe and its members against Arizona State University and the Arizona Board of Regents in connection with the unauthorized use of physical samples and other data taken from tribal members for use in a diabetes study, as well as a similar case involving an Indigenous nation in British Columbia).

world, necessitating cooperation and collective action.¹⁹ Tribal governments within the United States are poised to become leaders in the participatory design of more fair and effective governance structures for digital data.

Part I of the essay explores the issue of data sovereignty comparatively, framing the concept within its global and national contexts, and then discussing the rights of tribal governments and other Indigenous peoples. Part II of the essay examines the various claims that are comprised within the movement toward “Indigenous data sovereignty,” as well as the current context of data governance by tribal governments. Part III of the essay discusses three substantive areas of research that test out the reach of these principles. The essay concludes with recommendations for actions that tribal governments can take to enhance their ability to exercise governance authority over their data.

II. DATA SOVEREIGNTY: NATIONAL, GLOBAL, AND TRIBAL

The principle of territorial sovereignty is paramount within international law and secures the right of nation-states to exercise exclusive governance authority over matters within their territory.²⁰ Within the United States, tribal governments exercise sovereignty over their reservation and other trust lands, and, in some ways, they have an analogous status to foreign nations.²¹ Tribal governments preexisted the United States, and they are not part of the constitutional compact that governs the federal government and the states.²² In fact, many tribal nations have treaties with the United States, and the treaties recognize the sovereign status of Native nations, as well as their territorial boundaries.²³ Even today, tribal reservation lands are jurisdictionally distinct from the states that now encompass them. For this reason, Indigenous data sovereignty is best understood within the context of United States Federal Indian law and the construction of tribal sovereignty, as well as international human rights law and the construction of the rights of Indigenous peoples.

19. This point was made by Dr. Katina Michaels, Professor at ASU’s School for the Future of Innovation in Society, at a recent conference on Governance of Emerging Technologies and Sciences in the opening panel entitled “Technology: The End of Democracy?” which detailed the massive scale of governance challenges raised by technologies such as Artificial Intelligence. Beus Center for Law and Society, Phoenix, AZ (May 22, 2019).

20. See Wallace Coffey & Rebecca Tsosie, *Rethinking the Tribal Sovereignty Doctrine: Cultural Sovereignty and the Collective Future of Indian Nations*, 12 STAN. L. & POL’Y REV. 191, 192 (2011) (discussing the central principles of the tribal sovereignty doctrine within Federal Indian law).

21. *Id.* at 192–93.

22. *Id.* at 192.

23. *Id.* at 192.

A. *Data Sovereignty and Nation-States*

At the international level, “data sovereignty” means “managing information in a way that is consistent with the laws, practices and customs of the nation-state in which it is located.”²⁴ As Professor Andrew Woods points out, nation-states exercise their sovereignty by controlling data within their territory, particularly in association with the physical infrastructure used to house data.²⁵ The United States Government, for example, controls the nation’s physical network architecture, including the fiber optic cables, servers, and computers within its territory.²⁶ By virtue of its physical access to fiber optic cables, the National Security Agency can surveil internet traffic as part of its “upstream program.”²⁷

National governments exercise data sovereignty in various ways, including to censor offensive content, monitor online activity, and bar access by other sovereigns.²⁸ What data sovereignty looks like in a given country reflects that nation’s norms and values, and, not surprisingly, there are marked differences among nations.²⁹ The interaction of sovereign governments with private companies also influences the issue of data governance.³⁰ Private companies, such as Google, tend to dominate the global economy, and they do business in many nations.³¹ Data sovereignty means that a particular country, such as China, can require companies to abide by local law as a condition of doing business in its markets.³² In fact, China requires companies to provide the state with physical access to their data.³³ The nation-state therefore controls the people and the property as it administers access to the data.³⁴

When a nation-state seeks to regulate private companies by requiring access to data (for example, in an association with its effort to find evidence for a criminal prosecution), the state can enjoin the company from operating its business within national borders until it complies.³⁵ Because American companies tend to dominate the global market, they endorse data policy

24. Snipp, *supra* note 3, at 39.

25. Andrew Keane Woods, *Litigating Data Sovereignty*, 128 *YALE L.J.* 328, 361–62 (2018).

26. *Id.* at 361.

27. Craig Timberg, *NSA Slide Shows Surveillance of Undersea Cables*, *WASH. POST*, Jul. 10, 2013, <https://perma.cc/76TW-3W89>.

28. Woods, *supra* note 25, at 361.

29. Snipp, *supra* note 3, at 39–40.

30. *Id.*

31. Woods, *supra* note 25, at 361.

32. *Id.* at 361–62.

33. Snipp, *supra* note 3, at 40; Miguel Helft & David Barboza, *Google Shuts China Site in Dispute Over Censorship*, *N.Y. TIMES*, Mar. 22, 2010, <https://perma.cc/98F3-D4PH>.

34. Snipp, *supra* note 3, at 40; Helft & Barboza, *supra* note 33.

35. Woods, *supra* note 25, at 362–63.

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norms favoring free speech, privacy, and entrepreneurship.³⁶ Due to the digital nature of information technology, however, the rules governing data in one jurisdiction are likely to collide with the rules that apply in other jurisdictions.³⁷ In these cases, courts must give mutual recognition and deference to each sovereign, perhaps balancing interests or applying the doctrine of comity.³⁸

As Professor Woods notes with respect to internet governance, there are two competing visions of data governance that operate today.³⁹ The “cosmopolitan ideal” endorses maximum freedom and an “open internet” governed by a global set of rules that would apply uniformly throughout the world.⁴⁰ The “sovereign-difference” ideal, on the other hand, supports the notion that the internet should continue to operate in accordance with local norms, customs and rules.⁴¹ The differences among countries are notable in the area of hate speech, where most countries favor regulating extreme content, and the “United States is on its own when it comes to managing violent and racist speech online.”⁴² The United States endorses the cosmopolitan ideal because it serves the values of autonomy and freedom of speech. The justification for the sovereign difference ideal is linked to the international law norm requiring deference to a sovereign nation’s authority within its territory. While the United States benefits locally from this principle, the sovereign difference ideal also requires respect for the more restrictive policies favored by many other nations.

According to Professor Woods, the idea that sovereignty is an overriding principle of international law requiring deference in all cases is not sufficient to justify local control.⁴³ A more refined argument, he posits, would be that “data is just another globally distributed good” and, therefore, should be subject to the general rules of international law, including sovereign deference.⁴⁴ However, Professor Woods claims that the strongest argument is that sovereign deference “represents the best possible hope for global governance of the internet” because it encourages governments to negotiate with one another and facilitate mutual cooperation, rather than fragmentation.⁴⁵

36. *Id.* at 367–68.

37. *Id.* at 367–69.

38. *Id.* at 371–73.

39. *Id.* at 367.

40. *Id.*

41. *Id.* at 367–68.

42. Cecilia Kang, *Can Tech Companies Silence Hate Speech?*, N.Y. TIMES, Apr. 22, 2019, at B1.

43. Woods, *supra* note 25, at 386–94.

44. *Id.* at 371.

45. *Id.*

The doctrine of comity encourages cooperation among sovereigns, and there is a powerful interface between comity and the sovereign-difference ideal.⁴⁶ Broadly speaking, Professor Woods offers several examples where interjurisdictional cooperation is needed to regulate data: (1) where the law enforcement agency within one jurisdiction seeks access to data stored in another jurisdiction; (2) where the government has issued a take-down order for extremist content, for example, a website containing hate speech in countries where such speech is unlawful or posting graphic photos that jeopardize privacy rights or public decency; and (3) where the government seeks to delist or delink content that violates intellectual property rights.⁴⁷

In each of these cases, the government is regulating data as information in the exercise of its national authority.⁴⁸ The sovereign-difference principle can be invoked in cases of interjurisdictional conflict, but naturally, this requires nation-states to work cooperatively to resolve the conflict because each set of rules is valid and accorded deference.⁴⁹

As the next section of this essay demonstrates, these issues and principles are also potentially useful in the construction of “Indigenous data sovereignty,” at least with respect to federally-recognized tribal governments in the United States. At a foundational level, tribal governments exercise jurisdiction over their territory, inclusive of their reservation and other trust lands.⁵⁰ Like all governments, tribal governments seek access to the internet and mobile phone technology for members living on the reservation, and these technologies provide very useful methods to harness data.⁵¹ Data is commonly gathered and shared through mobile phone applications, for example, but it is unclear how this should occur for consumers living on a reservation.⁵² The analogy to taxation of internet purchases gives one view of the complex challenges. Typically, states cannot tax tribal members for purchases made on the reservation.⁵³ However, if the member makes a purchase on Amazon from his or her computer on the reservation, the state sales tax may be assessed by virtue of the tribal member’s postal zip code.⁵⁴ There is currently no way to sort this out using the standard online technology, and the jurisdictional rules, although applicable, are likely not enforceable.

46. *Id.* at 372–73.

47. *Id.* at 339–47.

48. *Id.* at 355–56.

49. *Id.* at 359.

50. Coffey & Tsosie, *supra* note 20, at 192–93.

51. Snipp, *supra* note 3, at 51.

52. *Id.*

53. *McClanahan v. State Tax Comm’n of Ariz.*, 411 U.S. 164, 171 (1973).

54. *South Dakota v. Wayfair, Inc.*, 138 S. Ct. 2080 (2018).

In addition, Indigenous data sovereignty has an important intersection with cultural preservation efforts. Tribal governments often have cultural concerns about placing sensitive information into databases that are accessible to the public.⁵⁵ Their understanding of what images and information are inappropriate to be shared relate to their distinctive histories, legal systems, and customary norms.⁵⁶ Tribal legal systems may embody very different understandings of what constitutes “property” and how tangible and intangible items relating to cultural heritage should be treated. These issues are currently under active consideration in meetings of the Intergovernmental Committee of the World Intellectual Property Organization (WIPO), which is considering treaty protection for the categories of Indigenous traditional knowledge, traditional cultural expressions, and genetic resources.⁵⁷ These are all areas where tribal customary law frequently reflects different rules than western intellectual property-rights systems, such as copyright and patent. For this reason, WIPO is contemplating a *sui generis* form of protection for the rights of Indigenous peoples and, perhaps, for other local communities.⁵⁸

Because the legal claims of federally-recognized tribal governments in the United States differ from non-recognized groups, it is necessary to understand the nature of tribal sovereignty within the United States federal system before exploring the nature of Indigenous peoples’ right to self-determination under international human rights law.

B. The Nature of Tribal Sovereignty

American Indian and Alaska Native Nations within the United States exercise inherent sovereignty over their members and their territory. Federally-recognized tribal governments have the capacity to enact laws governing tribal lands and resources, including informational resources, and most have judicial systems to adjudicate civil and criminal cases. Because the inherent sovereign authority of tribal governments is more like that of foreign nations, state courts often invoke the principle of comity to give

55. See Jane Anderson, *Access and Control of Indigenous Knowledge in Libraries and Archives: Ownership and Future Use*, American Library Association and The MacArthur Foundation, Columbia University, New York, May 2005 at 15–17, <https://perma.cc/P4PK-LMVE> (discussing the concerns of Indigenous peoples about information stored in public archives).

56. See *Id.*, at 3 (discussing perspective of an Aboriginal leader in Australia).

57. See generally PROTECTING TRADITIONAL KNOWLEDGE: THE WIPO INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE (Daniel F. Robinson, Ahmed Abdel-Latif, & Pedro Roffe eds., 2017)

58. *Id.*

effect to tribal court judgments and orders.⁵⁹ Many tribal governments entered treaties with the United States Government that recognize their sovereignty over their territory.⁶⁰ State governments generally must abide by those treaties to serve process in Indian country or to extradite a criminal suspect residing in Indian country.⁶¹ Today, tribal governments retain their treaty rights, and they also have the authority to enter intergovernmental agreements with state governments and federal agencies to manage shared resources, such as forests and watersheds.⁶² Tribal, state, and federal law enforcement agencies routinely enter intergovernmental agreements to manage their mutual interest in protecting public safety.⁶³ These principles support the notion that tribal governments can exercise sovereignty over data stored within their territory, as well as data about their members, lands, or resources. To the extent that tribal data becomes a “shared resource” between state or federal governments, or even multiple tribal governments, however, principles of tribal sovereignty would appear to require a negotiated co-management agreement for the database, honoring any relevant restrictions for tribal data.

Federally-recognized tribal governments are in a trust relationship with the United States. The United States Congress has the power to enact laws to protect tribal governments in their exercise of self-government, and the Bureau of Indian Affairs and Indian Health Service operate specific programs to assist tribal governments and tribal members. Reservation lands are generally held in trust by the federal government, although there can be non-Indian fee land on the reservation due to the allotment policy of the nineteenth century and early twentieth century.⁶⁴ The tribal government is the beneficial owner of its trust land, and it is also the presumptive government with the authority to regulate lands within the reservation.⁶⁵ Reservation lands are typically subject to federal and tribal law, and state governments generally lack authority to regulate within Indian country, except in cases where they have a sufficient interest to justify a particular form of regulation, such as taxation of cigarette sales to non-Indian state residents.⁶⁶

59. *E.g.*, Tracy v. Superior Court of Maricopa County, 810 P.2d 1030, 1041 (Ariz. 1990) (en banc) (applying principle of comity to recognize Navajo Nation’s enactment of the Uniform Law to Secure Witnesses from Outside Jurisdiction).

60. Coffey & Tsosie, *supra* note 20, at 192.

61. *E.g.*, State of Ariz. ex rel. Merrill v. Turtle, 413 F.2d 683, 685 (9th Cir. 1969).

62. See Rebecca Tsosie, *The Conflict Between the “Public Trust” and the “Indian Trust” Doctrines: Federal Public Land Policy and Native Nations*, 39 TULSA L. REV. 271, 309–10 (2003).

63. *Id.*

64. See generally Judy Royster, *The Legacy of the Allotment Act*, 27 ARIZ. ST. L.J. 1 (1995).

65. Plains Commerce Bank v. Long Family Land & Cattle Co., 128 S. Ct. 2709, 2723 (citing *Strate v. A-1 Contractors*, 520 U.S. 438, 456 (1997)).

66. See *Worcester v. Georgia*, 31 U.S. 515, 520 (1832) (holding that state of Georgia could not extend its laws to the Cherokee Nation’s territory); *Williams v. Lee*, 358 U.S. 217, 219–20 (1959)

Tribal governments generally regulate reservation lands, although they may lack authority to regulate non-Indian-owned fee land on the reservation.⁶⁷ The United States Supreme Court has determined that tribal governments can exercise civil jurisdiction over non-Indians on fee land, but only when they are in a consensual relationship with the tribe or its members, or when such exercise would be “necessary to protect tribal self-government or internal relations.”⁶⁸

Given these jurisdictional complexities, the exercise of data sovereignty by federally-recognized tribal governments must be considered with respect to the sovereign-difference principle that pertains to data governance among nation-states. However, it should be noted that, within the United States, the exercise of Indigenous data sovereignty could trigger interests of the federal and state governments. Tribal governments are subject to the overriding interests of the United States Government represented by the Supremacy Clause of the United States Constitution.⁶⁹ Congress regulates interstate commerce, foreign affairs, national security, and transboundary resources, such as navigable waterways.⁷⁰ Congress also regulates information technology through the Federal Communications Act, due to its interstate nature, and the Federal Communications Commission implements this law.⁷¹ As such, tribal governments are preempted from regulating information technology in ways that would violate federal law. However, tribal governments have a fair amount of autonomy to legislate in areas where they are not preempted by federal law.

Tribal governments are also protected by the federal trust responsibility, which is intended to secure tribal rights to self-governance.⁷² The federal government’s trust duty could be construed to extend to the protection

(holding that the basic policy of Worcester continues and that owner of Indian trading post must use courts of Navajo Nation to sue a tribal member for defaulting on a debt and could not file action in Arizona state court); *but see* *Washington v. Confederated Tribes of the Colville Reservation*, 447 U.S. 134, 156–57 (1980) (holding that state of Washington can impose sales tax on reservation sales of cigarettes to non-Indians because state has interest in taxing such sales and the tax does not “unnecessarily” intrude upon tribal interests).

67. *E.g.*, *Montana v. United States*, 450 U.S. 544, 564–65 (1981) (holding that Crow Tribe could not regulate hunting and fishing by non-members on fee land within the reservation, although it had this right with respect to tribal trust land and allotments in Indian ownership).

68. *Id.* at 564–66.

69. U.S. CONST. art. I, § 8, cl. 3; U.S. CONST. art. VI, cl. 2; *see also* *Talton v. Mayes*, 163 U.S. 376, 384 (1896) (holding that the Bill of Rights does not apply to tribal governments, but that they are “restrained by the general provisions of the Constitution of the United States”).

70. U.S. CONST. art. I, § 8, cl. 3; *Gibbons v. Ogden*, 22 U.S. 1, 194 (1824) (holding Congress has the power to regulate interstate commerce, factual dispute over navigable waterway between two states).

71. *See* Communications Act of 1934, 47 U.S.C. § 151 (1934), *re-enacted with amendments* Telecommunications Act of 1996 47 U.S.C. § 155(a) (1996) (enacted “for the purpose of regulating interstate and foreign commerce in communication by wire and radio”).

72. *E.g.*, *Nat’l Farmers Union Ins. Companies v. Crow Tribe of Indians*, 471 U.S. 845, 856 (1985).

of data in the possession of federal agencies that concerns tribal governments and their members. For example, in *Utah v. United States Department of Interior*,⁷³ the Tenth Circuit Court of Appeals upheld a federal district court ruling protecting key terms of a lease between the Skull Valley Band of Goshute Indians and a group of utility companies from disclosure under the Federal Freedom of Information Act (FOIA).⁷⁴ In this case, the lease allowed the companies to store 40,000 tons of spent nuclear fuel on tribal land. The BIA had approved the lease and, upon the State's request, provided a redacted copy of the lease.⁷⁵ The State appealed, seeking full disclosure of the lease terms, and the federal courts denied this request on the basis of the FOIA exemption protecting "trade secrets and commercial or financial information obtained from a person and privileged or confidential."⁷⁶ However, the lines on this are not always clear. Third parties have a right to access federal agency data under FOIA, unless it falls into a protected category of information that provides a privilege against discovery (such as attorney work-product) or is specifically excluded by a statutory exemption.⁷⁷ The Supreme Court has held that there is no categorical exclusion for information obtained through the federal-tribal trust relationship.⁷⁸

Additionally, many Indigenous groups are not protected by the federal trust responsibility, such as state-recognized tribes that lack federal recognition and non-recognized tribes that seek federal and/or state recognition. Indigenous peoples who lack federal recognition also lack the ability to make laws and apply them to a trust territory. They are also unlikely to have the authority to protect the interests of tribal members to the extent that these interests are separate and distinct from the interests of all citizens (such as privacy) and assuming that the federal or state government is unwilling to extend the rules that are applicable to federally-recognized tribal governments.⁷⁹

Within the United States, Indigenous data sovereignty is complicated by these variations in the political and legal status of the respective groups. Although this essay focuses on the rights of federally-recognized tribes, I acknowledge that there are multiple issues that affect Indigenous peoples generally, and federally-recognized tribes currently are in the strongest po-

73. 256 F.3d 967 (10th Cir. 2001).

74. *Id.* at 971.

75. *Id.* at 968.

76. *Id.* at 969.

77. *See* Dept. of Interior v. Klamath Water Users Protective Ass'n, 121 S. Ct. 1060, 1065 (2001) (holding that records in this case did not fit within exemption for "inter-agency" or "intra-agency" memorandums or letters).

78. *Id.* at 1069.

79. *See generally* Mark D. Myers, *Federal Recognition of Indian Tribes in the United States*, 12 STAN. L. & POL'Y REV. 271, 276 (2001).

sition to exert their particular interests in regulating data. The construct of “Indigenous data sovereignty” as a broader human rights principle is one way to more broadly protect the interests of all Indigenous peoples.

C. *Indigenous Peoples and the Right to Self-Determination*

In 2007, the United Nations General Assembly adopted the Declaration on the Rights of Indigenous Peoples after more than twenty-five years of active negotiation among nation-states and representatives of Indigenous peoples throughout the world.⁸⁰ The document is important because it represents the consensus agreement of nation-states that Indigenous peoples are “peoples” with the same right to self-determination enjoyed by all other peoples. Prior to this, international human rights law equated Indigenous peoples with “ethnic and religious minorities,” who have certain human rights to enjoy their culture and practice their religions in common with other group members, but lack the political right to self-government.⁸¹

The right to self-determination is a moral right that belongs to individuals and to collective groups who constitute a “people.”⁸² Under international human rights law, all “peoples” have a political right to govern themselves autonomously and to freely consent to political arrangements with other governments.⁸³ The Declaration on the Rights of Indigenous Peoples tracks the language of the United Nations Covenant on Civil and Political Rights to validate that “Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.”⁸⁴ The Declaration also provides that, in exercising the right to self-determination, Indigenous peoples “have the right to autonomy or self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions.”⁸⁵

Consequently, the right to self-determination for Indigenous peoples is a right to *domestic* self-determination.⁸⁶ Indigenous peoples exercise their right to self-determination within the nation-states that encompass them. They do not have the right to secede and become independent nations, because this would impair national boundaries and the territorial integrity of

80. Declaration on the Rights of Indigenous Peoples (adopted 2 October 2007 UNGA Res 61/295) (UNDRIP).

81. See International Covenant on Civil and Political Rights art. 27, Dec. 16, 1966, 999 U.N.T.S. 179 (entered into force Mar. 23, 1967) (describing rights of ethnic and religious minority groups).

82. International Covenant on Civil and Political Rights art. 1, Dec. 16, 1966, 999 U.N.T.S. 173 (entered into force Mar. 23, 1967).

83. *Id.*

84. UNDRIP, *supra* note 80, at art. 3.

85. *Id.* at art. 4.

86. *Id.* at art. 46.

the nation-states.⁸⁷ The nation-states have several duties, which are specified in the document.⁸⁸ The primary duties are to protect the right of Indigenous peoples to exercise self-government, while also ensuring that group members enjoy equal rights as citizens of the national governments.⁸⁹ The nation-states must take action to ensure these distinctive sets of rights, and also take corrective action to alleviate harms caused by past policies designed to obliterate tribal identity and appropriate tribal lands and resources.⁹⁰

There are various models to effectuate Indigenous self-determination, including the tribal sovereignty model used by the United States.⁹¹ In some cases, collaborative or joint management might be required due to the shared nature of resources such as forests and waters.⁹² Indigenous self-government can be expressed through a corporate form, rather than a tribal form, such as the Alaska Native corporations.⁹³ Indigenous self-government can also be expressed through intertribal organizations, such as an Indian Healthcare Board, Education Commission, or Intertribal Court of Appeals. In these cases, a particular group's inherent right to sovereignty may or may not be explicitly recognized by the nation-state.⁹⁴ The Declaration suggests that Indigenous people have the right to self-determination, nonetheless, and therefore, their collective interests must be recognized and accommodated by the nation-state.⁹⁵

The various articles of the Declaration describe substantive areas where nation-states must protect the interests of Indigenous peoples. Among these is Article 31, which provides that:

Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicine, knowledge of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts.⁹⁶

87. *Id.*

88. See Megan Davis, *Data and the United Nations Declaration on the Rights of Indigenous Peoples*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 25, 34 (Tahu Kukutai & John Taylor eds., 2016) (providing an excellent summary of these duties and specifically linking them to issues of data sovereignty for Indigenous peoples in other countries).

89. *Id.*

90. Rebecca Tsosie, *Reconceptualizing Tribal Rights: Can Self-Determination Be Actualized Within the U.S. Constitutional Structure?*, 15 *LEWIS & CLARK L. REV.* 923, 929–30, 942, 948 (2011).

91. *Id.* at 930–31.

92. *Id.* at 932–33.

93. *Id.* at 932.

94. *Id.* at 931–32.

95. Davis, *supra* note 88, at 34.

96. UNDRIP, *supra* note 80, at art. 31.

Article 31 further provides that Indigenous peoples have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, raising the issue of informational privacy, and specifically how data should be housed and whether it should be made accessible to third parties.⁹⁷ According to Victoria Tauli-Corpuz, the United Nations' Special Rapporteur on the Rights of Indigenous Peoples, Article 31 should be linked with the concept of data sovereignty and discussions of tribal data.⁹⁸ Although Article 31 does not specifically outline a right to data sovereignty, this can be inferred from the text defining Indigenous peoples' right to their knowledge and technologies, as well as their need to transfer Indigenous knowledge and cultural heritage to future generations.

III. CONSTRUCTING INDIGENOUS DATA SOVEREIGNTY

According to Desi Rodriguez-Lonebear, Indigenous data sovereignty constitutes the “right and ability of tribes to develop their own systems for gathering and using data by external actors.”⁹⁹ This baseline definition encompasses several claims, which are broadly applicable to Indigenous peoples throughout the world, and which I will discuss below. This definition also serves as the impetus for policy development by the federally-recognized tribal governments within the United States, many of whom recently participated in NCAI's study on tribal data practices, which is the first study of its kind and is also discussed below.¹⁰⁰

A. *The Claims Encompassed within Indigenous Data Sovereignty*

At a foundational level, Indigenous data sovereignty is an advocacy movement intended to build the capacity of Indigenous peoples to exercise their political right to self-determination in an era where government policy is “data-driven” and where data sets are increasingly shared and combined in order to enable “machine learning” and artificial intelligence.¹⁰¹

Dr. Stephanie Carroll Rainie and Desi Rodriguez-Lonebear of the University of Arizona have exercised powerful leadership toward Indigenous data sovereignty, and they started the United States Indigenous Data Sovereignty Network (USIDSN), working in collaboration with representatives from the global Indigenous data sovereignty movement, led by Indigenous

97. *Id.*

98. Tauli-Corpuz, *supra* note 2, at xxii–xxiii.

99. Rodriguez-Lonebear, *supra* note 14, at 259.

100. National Congress of American Indians, *The State of Tribal Data Capacity in Indian Country: Key Findings from the Survey of Tribal Data Practices* (2018).

101. Radin, *supra* note 11, at 51–52 (discussing those uses of “Big Data”).

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scholars in Australia and New Zealand.¹⁰² In June 2018, the group convened in Australia for an Indigenous Data Sovereignty Summit and adopted the following definition: “Indigenous Data Sovereignty is a global movement concerned with the right of Indigenous peoples to govern the creation, collection, ownership and application of their data.”¹⁰³

The group broadly defined “data” as “a cultural, strategic and economic asset for Indigenous Peoples.”¹⁰⁴ The term “data” refers to “information or knowledge, in any format or medium, which is about and may affect Indigenous peoples both collectively and individually.”¹⁰⁵ The group considers data sovereignty to be a right that stems from “inherent self-governance authority and is recognized by the United Nations Declaration on the Rights of Indigenous Peoples, to exercise ownership over their data.”¹⁰⁶ This right also comprises the right to “govern the creation, collection, access, analysis, interpretation, management, dissemination and reuse of the data.”¹⁰⁷

The normative principles are that data should be used in ways that benefit Indigenous peoples and that data on or about Indigenous peoples should reflect Indigenous priorities and values.¹⁰⁸ Similarly, Indigenous peoples should have a right to opt into data structures that support these aspirations and “not participate in data processes inconsistent with the [data sovereignty Summit] principles.”¹⁰⁹

As an advocacy statement, the IDSN statement presents an ideal starting place to analyze the claims for Indigenous data sovereignty. There are many nuances to be resolved, however, if these aspirations are to receive legal effect. No government owns all of the data (information) within its territory or by or about the nation. The term “tribal data” will require careful delineation if it is to serve as a source of enforceable legal rights. Although Article 31 of the UN Declaration provides a conceptual basis for linking tribal data to larger rights of Indigenous peoples to protect their cultural heritage, there is nothing within the UN Declaration that would support a claim to ownership of data on a broad scale, with respect to any

102. See Native Nations Institute at the University of Arizona, *US Indigenous Data Sovereignty Network*, <https://perma.cc/3W4H-C5CR> (last visited Jan. 10, 2019); see also Stephanie Rainie, Desie Rodriguez-Lonebear, and Andrew Martinez, Policy Brief: Data Governance for Native Nation Rebuilding (Native Nations Institute, 2017), posted on website.

103. Open Communique from the Indigenous Data Sovereignty Summit, Canberra, ACT, to all individuals involved in data and data infrastructure in Australia, *Indigenous Data Sovereignty* (June 20, 2018), <https://perma.cc/8VPR-9TTL>.

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. *Id.*

particular Indigenous peoples. In fact, within the United States, tribal governments may exercise autonomy over their members and reservation, even if they are part of a larger “people.” Accordingly, the Cheyenne River Sioux Nation has the ability to regulate data differently than the Rosebud Sioux Nation or the Oglala Lakota Nation, even though all of these tribal governments are part of the Lakota people.

As a legal construct, Indigenous data sovereignty is primarily about protecting each tribal government’s right to regulate data within its territory—and arguably about its members—as well as protecting Indigenous peoples more broadly from harmful or exploitive policies of the encompassing nation-state. In the first case, data sovereignty is used to build tribal capacity to exercise self-determination.¹¹⁰ In the latter case, data sovereignty is invoked to require changes in national or international law that might be necessary to accord “equality” of citizenship or to protect the Indigenous group’s right to self-government.¹¹¹

Both objectives appear to be central to the Indigenous Sovereignty movement.¹¹² According to Dr. Walter, Indigenous data sovereignty is the corrective to the “data of disregard” generated by settler governments because it allows Indigenous peoples to govern the interpretation and use of data about them and prevent misuses of information that harm the group.¹¹³ Additionally, in the hands of Indigenous communities, data can foster nation-building by empowering Indigenous peoples to gather their own data and generate information that can be used to formulate strategies and obtain resources.¹¹⁴ In the text that follows, I will develop the two respective claims.

1. *The Need to Overcome Data Inequity, Racism, and Marginalization*

As many proponents of Indigenous data sovereignty point out, data gathered by the national government can reflect the dominant society’s biases, for example, the need to demonstrate “disparities” between the Indigenous and non-Indigenous populations.¹¹⁵ Dr. Maggie Walter describes this as a “data of disregard” in which indigeneity is used as a “predictor varia-

110. Maggie Walter, *Data Politics and Indigenous Representation in Australian Statistics*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 79, xxii (Tahu Kukutai & John Taylor eds., 2016).

111. *Id.*

112. *Id.*

113. *Id.* at 80 (describing this as “Five D” Data collected by national government about Indigenous peoples to demonstrate “disparity, deprivation, disadvantage, dysfunction, and difference”). Dr. Maggie Walter also gave a lecture on this topic at the University of Arizona on September 5, 2018, which the author attended.

114. *Id.* at 94. (describing impacts of data governance by national government, which minimized recognition of tribal sovereignty over Indigenous lands).

115. *Id.* at 80–81 (Tahu Kukutai & John Taylor eds., 2016).

ble” to describe risk or likelihood of problems, for example, related to health, educational achievement, incarceration: disadvantage, disparity, difference.¹¹⁶ In this case, the dominant society’s cultural narrative controls the process of gathering data and determines the content of the study.¹¹⁷ The data can be used “against” Indigenous peoples in many ways, not the least of which is to link them with criminality, susceptibility to disease, or vulnerability.¹¹⁸ Researchers are not “accountable” for these harms. They receive the benefit of using the data without having any liability for the harm that falls upon the community.¹¹⁹

The problem of data inequity is pervasive and tracks global movements of colonialism and domination of Indigenous peoples. Lonebear notes that “marginalized populations across the globe continue to face glaring data inequities.”¹²⁰ In the United States, data inequity for Indigenous peoples means that there is a lack of relevant information about Native populations, which constrains tribal governments from the ability to engage in appropriate planning and community development.¹²¹ It also means that tribal governments are in a state of “data dependence.”¹²² Rather than being able to generate and use their own data, tribal governments are typically dependent upon data generated by federal, state and local governments and collected for their specific purposes.¹²³ This data is not necessarily accurate or relevant to the needs of tribal communities.

Additionally, there is a need to identify a consistent “statistical data standard” to govern the collection and reporting of American Indian population data across agencies.¹²⁴ According to Lonebear, the United States does not have such a standard, and this is partially attributable to its historical practices.¹²⁵ As Lonebear demonstrates, tribes were affirmatively excluded from the United States Census prior to 1924, when Congress passed legislation naturalizing American Indian people to U.S. citizenship.¹²⁶ The federal government sometimes sponsored “tribal census counts” as a means to determine how many Indians were eligible to take distributions of tribal

116. THINK DIGITAL FUTURES: DATA OF DISREGARD (2ser 107.3 radio broadcast) (audio at <https://perma.cc/87N9-ZHA9>).

117. See Walter, *supra* note 11510, at 80–82.

118. *Id.* at 83, 86.

119. *Id.* at 85.

120. Desi Rodriguez-Lonebear, *Building a data revolution in Indian Country*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 253, 253 (Tahu Kukutai & John Taylor eds., 2016).

121. *Id.* at 254, 259.

122. *Id.* at 258.

123. *Id.* at 259.

124. *Id.*

125. *Id.*

126. *Id.* at 257.

funds or services.¹²⁷ Indian agents might also undertake a census to see how many “Indian males” were needed to satisfy a treaty provision requiring that a certain percentage of eligible adult males consent to further cessions of tribal lands.¹²⁸ The accuracy of 19th century census counts has been contested in modern land claims litigation, alleging that federal officials undercounted the total population and sometimes miscounted by including persons who were not even tribal members.¹²⁹

A further issue is how data is linked more broadly to American Indian or Alaska Native populations, rather than specifically to particular tribal nations. If the data is identified as “Indigenous” or “American Indian,” rather than linked to a specific tribal group, what rights would attach? For example there is no list of who is “Aboriginal” in Australia, challenging the ability of Indigenous peoples in that country to control their data.¹³⁰ Similarly, in some countries, such as Mexico, “Indigenous identity” is linked to language, rather than blood quantum or descent.¹³¹ The definition used by the national government may negate the actual identities of Indigenous persons in that country¹³² and preclude them from controlling their data. Some version of this problem also exists in the United States in relation to Native Hawaiian people and members of non-recognized tribal groups. It may also extend to Indians who are not enrolled as tribal citizens, if enrollment is the primary criterion for a census count.¹³³ Many Indians, even those living on-reservation, are not enrolled as tribal citizens, and federal courts are increasingly suspicious of “ancestry-based” definitions of who is “American Indian” or “Indigenous,” seeing those as “racial” descriptors, rather than political designations.¹³⁴

127. *Id.* at 262.

128. *See Lone Wolf v. Hitchcock*, 187 U.S. 553 (1903); *United States v. Sioux Nation*, 448 U.S. 371 (1980) (Addressing a treaty which required $\frac{3}{4}$ of adult males to consent, but in fact, less than “10% of the adult male Sioux population” signed the “agreement” that was enacted into law in 1877 removing the Black Hills and a significant portion of the 1868 Treaty reservation).

129. *See Lone Wolf v. Hitchcock*, 187 U.S. 553 (1903) (regarding deficiencies in United States government’s disposition of treaty lands belonging to the Kiowa, Comanche and Apache tribes pursuant to the Treaty of Medicine Lodge, which required the consent of “at least three fourths of all the adult male Indians occupying the reservation” before any further land cessions could be made); *United States v. Sioux Nation*, 448 U.S. 371 (1980) (federal negotiators in fact secured consent of only 10% of adult male Sioux Indians, rather than the three-fourths required by the 1868 Treaty of Fort Laramie, and used this alleged “agreement” with the Sioux people to motivate Congress to enact a statute in 1877 that appropriated most of the Tribe’s treaty guaranteed land, including the sacred Black Hills, the origin place of the Lakota Sioux people, without any effort to give equivalent value for the land).

130. Walter, *supra* note 1130.

131. Snipp, *supra* note 3, at 41.

132. *Id.*

133. *Id.* at 49–50.

134. *See Rice v. Cayetano*, 528 U.S. 495 (2000) (striking down Hawaii’s attempt to restrict election of trustees for Office of Hawaiian Affairs to persons of Hawaiian descent because the state was using “ancestry as a proxy for race” and therefore violating the 15th amendment, which prohibits use of race

In sum, dependence upon other governments to define Indigenous identity and collect data about Indigenous populations runs contrary to the goal of Indigenous self-determination. According to Lonebear, less than 2% of data about tribal populations in the United States is generated by the tribes themselves, while the remaining 98% of sources “span the U.S. Census, administrative agencies such as the BIA and HUD, national surveys and numerous scholarly references.”¹³⁵ Lonebear asserts that this is not an acceptable foundation for tribal self-determination, and she argues that Indigenous data sovereignty is crucial for “nation-building.”¹³⁶

2. *Indigenous Data Sovereignty as Nation-Building*

Indigenous data sovereignty is about who defines and controls data about Indigenous peoples.¹³⁷ Lonebear asserts that “[d]ata sovereignty is about tribal control: control over who, what, when, where and why for all data projects pertaining to tribal citizens and resources.”¹³⁸ Although the ultimate goal might be “by us for us,” Lonebear states that the reality is that many tribes lack the expertise and resources necessary to do this.¹³⁹ So, there is also a need to secure trained staff to undertake these functions.¹⁴⁰ This raises the issue of data capacity: because tribes currently have limited capacity to undertake the range of studies needed to produce the data that they need, they require access to the data produced by other governments and entities.¹⁴¹

At a fundamental level, data is knowledge, and that knowledge is produced through a sequence of processes, including the following aspects of a research study: (1) a decision-maker identifies the need for information and creates study questions designed to elicit certain facts; (2) the study is funded; (3) the study begins and information is gathered; (4) the information gathered is interpreted or analyzed; (5) the findings or conclusions of the study are released as “fact”; (6) the study is “archived” and made acces-

as a criterion for the right to vote); *Brackeen v. Zinke*, 338 F. Supp. 3d 514 (2018) (district court in Texas finds the Indian Child Welfare Act unconstitutional partly because the statute encompasses children who are only marginally “Indian” in terms of ancestry and lack defined political ties with tribe).

135. Lonebear, *supra* note 120, at 259.

136. *Id.*

137. *Id.* at 259, 267.

138. *Id.* at 267.

139. *Id.*

140. *Id.* at 268.

141. *Id.* at 267.

sible to others; (7) the data from the study may or may not be used by other researchers for their independent studies (defined as “reuse”).¹⁴²

At each step of the process, the type of knowledge generated and produced is subject to influence by external entities. This reflects a central challenge of data governance in settler societies, which is “who has the power and authority to make rules and decisions about the design, interpretation, validation, ownership, access to, and use of data.”¹⁴³ Maggie Walter notes that data produced by national governments in “First World colonized nations,” such as the United States, Canada, Australia and New Zealand, uses population numbers to signify portrayals of Indigenous peoples.¹⁴⁴ The numbers are purportedly “neutral,” but in fact should be “understood as human artefacts, imbued with meaning.”¹⁴⁵ The meaning derived from statistics on the deficiencies and disparities of Indigenous peoples, for example, reflects the “social norms, values, and racial hierarchy” of the settler society.¹⁴⁶ Walter draws on Edward Bonilla-Silva’s work to describe how “claims for non-white inferiority” can be made in the present-day by reference to “neutral statistics,” allowing for the persistence of “racism” but “without racists.”¹⁴⁷

This powerful insight supports Lonebear’s assertion that tribal governments should develop their own tribal data sources.¹⁴⁸ According to Lonebear, “Tribal data are perhaps the most valuable tools of self-determination because they drive tribal nation building by tribes for tribes.”¹⁴⁹ Tribal governments can use Indigenous research methodologies to design and implement their studies, thereby securing the data needed for nation building.¹⁵⁰ In the meantime, the federal governments should ensure “improved collection of official statistics on tribal citizens” and identify ways to “make those statistics maximally useful to tribes.”¹⁵¹

Building Indigenous data capacity will require governing protocols and the ability to negotiate Indigenous data sovereignty with the entities

142. Dr. Maggie Walter, Dr. Stephanie Rainie, and Michelle Deshong, Ph.D. Candidate, Fulbright Scholar, presentations on *Indigenous Data Sovereignty and the Governance of Indigenous Data at Academic Institutions*, University of Arizona, Tucson, AZ (Sept. 5, 2018).

143. Diane E. Smith, *Governing data and data for governance: the everyday practice of Indigenous sovereignty*, in *INDIGENOUS DATA SOVEREIGNTY: TOWARD AN AGENDA* 117, 119 (Tahu Kukutai & John Taylor eds., 2016).

144. Walter, *supra* note 110, at 79–80.

145. *Id.* at 79.

146. *Id.* at 80.

147. *Id.* at 83–84 (citing EDWARD BONILLA-SILVA, *RACISM WITHOUT RACISTS: COLOUR-BLIND RACISM AND THE PERSISTENCE OF RACIAL INEQUALITY IN THE UNITED STATES*, (3d ed. 2010)).

148. Lonebear, *supra* note 120, at 261.

149. *Id.* at 265.

150. *Id.*

151. *Id.* at 261.

that control national or provincial and state data statistics. To the extent that tribal data sets are combined with other data sets, there will be issues regarding data storage. Data could be housed in a central national repository with access limited by an agreement with tribal governments. Some tribal governments would prefer a community repository on tribal lands, allowing for territorial regulation by the tribal government and data-sharing by various agencies within the tribal government. Others might favor legal agreements between a tribe and a researcher, which contractually place ownership of data with the tribal government. These are issues for tribal governments to resolve in conversation with other governments, with researchers, and with research institutions and their review boards. Database security is a significant component of Indigenous data sovereignty.

B. Tribal Data: Access, Ownership, and Equity

In October 2018, the National Congress of American Indians (NCAI) released the first study to survey American Indian and Alaska Native Nations on data access, ownership and equity in Indian country.¹⁵² The NCAI study starts by noting that American Indian and Alaska Native Nations (AI/AN) require reliable information for planning and development, just like other governments.¹⁵³ However, unlike other governments, AI/AN tribes “still rely on incomplete and inadequate data about their citizens and resources,” and this is only one aspect of the “data gap” in Indian country.¹⁵⁴ The researchers find evidence of “vast data inequities,” such as the “largest census undercount of any racial or ethnic group,” as well as the highest incidence of “misidentification in vital and administrative records.”¹⁵⁵ Finally, the report notes the “persistent digital divide” that continues to affect tribal governments in their governance efforts.¹⁵⁶

The survey was distributed to tribal officials from all federally-recognized tribes, and it was also completed by a small group of state-recognized tribes.¹⁵⁷ The study findings were based on the respondents from federally-recognized tribes, which constituted nearly 25% of the 567 federally-recognized groups that received the survey.¹⁵⁸ The tribes represented most of the regions in the country, and most were comprised of 5,000 or fewer tribal members.¹⁵⁹

152. NCAI Policy Research Center, *The State of Tribal Data Capacity in Indian Country: Key Findings from the Survey of Tribal Data Practices*, NATIONAL CONGRESS OF AMERICAN INDIANS 2, (2018).

153. *Id.* at 1.

154. *Id.*

155. *Id.*

156. *Id.*

157. *Id.* at 2–3.

158. *Id.* at 5.

159. *Id.* at 6.

Eighty-three percent of the respondents indicated that it is extremely important for tribes to collect and have access to data on their tribal populations, primarily because this is necessary for grant reporting, to communicate effectively with tribal members, and to set tribal priorities and goals.¹⁶⁰

Respondents indicated that most of the external data that they use comes from the United States Census Bureau, the Bureau of Indian Affairs, the Department of Housing and Urban Development and other federal agencies.¹⁶¹ To a lesser extent, they reported using state and county agency data, as well as data from universities and colleges.¹⁶² Not surprisingly, tribal data practices are largely funded by tribal budgets or by federal grants and contracts.¹⁶³

Tribal representatives expressed concern about protecting the privacy of their tribal citizens with respect to data collection, management and use.¹⁶⁴ Approximately 28% of respondents stated that they had formal mechanisms to approve research on tribal members, such as an institutional review board and committee.¹⁶⁵ Most of the tribes had created a “data hub or central data office” to manage tribal data, and over half of the tribes had the ability to share data between tribal departments.¹⁶⁶

Tribes expressed a broad range of areas in which they need more or better data on tribal members. The greatest need was for cultural information, such as tribal language fluency, and this is perhaps not unexpected, given that such surveys are probably the least likely to be funded by federal grants and the most likely to be perceived as sensitive by tribal members.¹⁶⁷ Respondents also noted the need for data related to health, education, housing, employment, income, household composition, and current contact information.¹⁶⁸

The study indicated that most tribes lack the financial capacity to fund the data activities that they require.¹⁶⁹ However, they also expressed concern about federal, state and local data sources, which are likely to be deficient and/or inaccurate.¹⁷⁰ Although there have been sporadic efforts by federal agencies to collect comprehensive data on a particular issue relevant to Native peoples, for example on tribal justice agencies or Native Ameri-

160. *Id.* at 7.

161. *Id.* at 8.

162. *Id.*

163. *Id.* at 9.

164. *Id.* at 10.

165. *Id.* at 9.

166. *Id.* at 9–10.

167. *Id.* at 11.

168. *Id.*

169. *Id.* at 13.

170. *Id.* at 12.

can housing needs, these are generally one-time efforts linked to a specific need for compliance and/or grant funding.¹⁷¹ Other studies may be funded by state or private organizations interested in issues such as tribal economic development or health disparities, primarily because there is a strong interface between state and tribal service populations and economies.¹⁷² Again, the studies have been directed toward specific groups of tribal governments and specific purposes, so the broader comparative research may be lacking, and the level of detail needed by a tribal government is also likely to be lacking.

The study concludes with a series of recommendations.¹⁷³ The paramount goal is to establish that “ensuring accurate, relevant, and timely tribal data should be considered part of the federal trust responsibility,” and that federal agencies should “provide technical assistance and direct financial support for tribal data practices through official government-to-government consultation.”¹⁷⁴

Building on that recommendation, this essay will survey three areas of particular concern to illustrate the data gaps and issues confronting tribal governments, and the essay will discuss how the federal trust responsibility is implicated by each area and ought to extend to the issue of data collection, use and access.

IV. IMPLEMENTING INDIGENOUS DATA SOVEREIGNTY: THE CHALLENGE OF DATA GOVERNANCE

Tribal governments must work cooperatively with state and local governments, as well as the federal government, in many areas, including law enforcement, healthcare administration, and environmental regulation. Indigenous data sovereignty can be used to identify and respond to the existing gaps, but there will be challenges to effective intergovernmental administration of data and databases, as this section of the essay discusses. Each section starts with a case study and then describes the challenges of data governance.

A. Law Enforcement Data

In the summer of 2018, the body of a young Native woman, Olivia Lone Bear, was found in a pickup truck submerged in a lake by her home

171. See *Id.* at 14 (citing 2002 Bureau of Justice Statistics’ Census of Tribal Justice Agencies and the 2017 Department of Housing and Urban Development’s Assessment of Native American, Alaska Native, and Native Hawaiian Housing Needs).

172. See, e.g., *Id.*

173. *Id.* at 16.

174. *Id.*

on the Fort Berthold Reservation in North Dakota.¹⁷⁵ Olivia was the mother of five young children, and she had been “missing” since October 25, 2017.¹⁷⁶ Her family had asked tribal, state and federal law enforcement authorities to search the water as well as the lands within the 1 million-acre reservation.¹⁷⁷ The various law enforcement agencies divided their jurisdiction over the land search, but none would assume responsibility for the water search.¹⁷⁸ The tribal law enforcement officers started the land search immediately after Olivia disappeared, but they could only search the water if they had criminal jurisdiction, which would occur only if both the victim and perpetrator were Native.¹⁷⁹ No one knew how or why Olivia disappeared. The State disclaimed jurisdiction over the 1 million-acre reservation, except for a crime that involved only a non-Indian victim and a non-Indian perpetrator.¹⁸⁰ However, it was ultimately the Williams County law enforcement officers who sent divers into the lake adjacent to Olivia’s home after nine months, and they located her body.¹⁸¹

Olivia’s tragic story gives us important information about the lack of coordination among law enforcement agencies that has contributed to a set of alarming statistics. According to existing data surveys, Native women are murdered at rates 10 times higher than the national average in many counties on or adjacent to reservation lands.¹⁸² The rate of murder is likely to be higher because Native women also “go missing” at very high rates.¹⁸³ If they are “missing,” they are technically not murder victims—yet who keeps the data on “missing” Native women?

May 5, 2018 was designated as the “National Day of Awareness for Missing and Murdered Indigenous Women and Girls.”¹⁸⁴ A 2018 High Country news story documents that, in the State of Washington, Native Americans are less than two percent of the population, but represent over

175. Jack Dura, *Olivia Lone Bear’s Family Awaits Autopsy Results After Funeral*, BISMARCK TRIBUNE (Aug. 15, 2018), <https://perma.cc/X9TD-V5SJ>.

176. Amy Goodman, *Body of Olivia Lone Bear Found in N. Dakota as Native Women Face Crisis of Murders, Disappearances*, DEMOCRACY NOW (Aug. 3, 2018), <https://perma.cc/X8HM-S3SA>; Mike McCleary, *Olivia Lone Bear Case Awaits Answers after 14 Months*, BISMARCK TRIBUNE (Aug. 15, 2018), <https://perma.cc/MF6L-3K83>.

177. *Id.*

178. *Id.*

179. *Id.*

180. *See Id.*

181. *Id.*

182. Ronet Bachman et al., *VIOLENCE AGAINST AMERICAN INDIAN AND ALASKA NATIVE WOMEN AND THE CRIMINAL JUSTICE RESPONSE: WHAT IS KNOWN* 5 (2008) <https://perma.cc/6RPF-XKYJ>.

183. Goodman, *supra* note 197.

184. Graham Lee Brewer, *The Crisis of Murdered and Missing Indigenous Women: The Response to a Disproportionate Problem is Falling Short*, HIGH COUNTRY NEWS (May 4, 2018), <https://perma.cc/Y2D4-GP6L>.

five percent of its missing persons cases.¹⁸⁵ State lawmakers are just now considering how to collect the data that would help state, local and tribal law enforcement authorities understand more about the problem. According to State Representative Gina McCabe, “there is currently no comprehensive data collection system for reporting or tracking missing Native American women.”¹⁸⁶ In March 2018, Governor Inslee signed a bill to assist with the crisis of missing and murdered women in the State of Washington.¹⁸⁷ Other states are also examining the issue and taking action. For example, Arizona Governor Doug Ducey recently signed a bill that will create an Arizona Task Force on Missing and Murdered Indigenous Women.¹⁸⁸ The Task Force will bring together a multidisciplinary team of state and tribal representatives to establish standardized methods for gathering data in these cases, as they arise in Arizona.¹⁸⁹

The U.S. Department of Justice operates a publicly accessible database, which currently lists 144 cases of Native American women reported missing and 22 cases of “Native American female unidentified remains.”¹⁹⁰ The undercount is staggering. In Canada, a much less populous country, the Royal Canadian Mounted Police released a 2013 report indicating 1,181 missing or murdered aboriginal women.¹⁹¹ Annita Lucchesi, a Native American doctoral student, used both data sets to start assembling her own list of missing and murdered Indigenous women in the U.S. and Canada, which as of 2018, numbered 2,501 persons.¹⁹² She has since created an online database for this on-going work.¹⁹³

In 2018, the United States Senate Committee on Indian Affairs approved Savanna’s Act, a bill named for another young Native American woman who went “missing” in 2017 and whose mutilated body was later found, after her brutal murder.¹⁹⁴ The bill was not enacted that session, yet

185. *Id.*

186. *Id.*

187. 2018 Wash. Sess. Laws SHB 2951.SL; *see also* Rachel Sun, *New Washington Law Aims to Help Find Missing Native American Women*, THE SPOKESMAN-REVIEW (April 2, 2018), <https://perma.cc/P69M-LT3P>.

188. Grace Oldham, *Ducey Signs Bill into Law that Will Study Missing, Murdered Indigenous Women*, THE ARIZONA REPUBLIC (May 14, 2019), <https://perma.cc/69HC-2RC>.

189. *Id.*

190. Nat’l Inst. of Justice, *National Missing and Unidentified Persons System (NamUs)*, <https://perma.cc/7CUJ-8K6S> (last visited June 8, 2019).

191. Royal Canadian Mounted Police, *MISSING AND MURDERED ABORIGINAL WOMEN: A NATIONAL OPERATIONAL OVERVIEW 3* <https://perma.cc/T6H8-575P>.

192. Mary Anette Pember, *Mapping Out Missing and Murdered Native Women: I Would Want My Story to Have Meaning*, REWIRE.NEWS (Apr. 27, 2018), <https://perma.cc/24J9-KGTD>.

193. *Id.*; *see also* Anita Lucchesi, *Missing & Murdered Indigenous Women Database*, <https://perma.cc/UTV3-D325> (last visited January 25, 2019).

194. AP Posting, *U.S. Senate Committee on Indian Affairs Approved Savanna’s Act*, VALLEY NEWS LIVE (Nov. 15, 2018), <https://perma.cc/9NZE-FEFT>.

was reintroduced in 2019, sponsored by Senator Lisa Murkowski (R-AK), and if passed, would expand tribal access to federal crime databases and establish uniform protocols for handling cases of missing and murdered Native Americans.¹⁹⁵ It would also require annual reports to Congress on the number of missing and murdered Native American women.¹⁹⁶ The Seattle-based Urban Indian Health Institute released a report the same week citing the work of its research team that indicated that there were over 500 missing persons and homicide cases involving Native women in 71 cities.¹⁹⁷ The cases were identified through public records requests and media reports.¹⁹⁸ The researchers stated that the figure is likely an undercount “because some police departments in cities with substantial Native American populations, including Albuquerque, did not respond to their requests” and because “Native American women are often incorrectly identified as belonging to another race.”¹⁹⁹ The report recommends improvement in data collection training and standards.²⁰⁰

Christopher Chaney, a member of the Seneca-Cayuga Nation, who serves as unit Chief for the FBI Office of the General Counsel’s Criminal Justice Information Law Unit, has written on tribal data sovereignty, noting that “the law has not kept pace with the rapid evolution of technology.”²⁰¹ Chaney finds that tribal governments are enacting tribal data laws to meet the need of the government and its members to access reliable data to fulfill law enforcement needs.²⁰² The 2010 Tribal Law and Order Act (TLOA) required tribal governments to have access to the Federal Bureau of Investigation databases, which are housed in the FBI’s Criminal Justice Information Services (CJIS) Division in West Virginia.²⁰³

The CJIS maintains 21 criminal databases, most of which contain data important to tribal governments.²⁰⁴ For example, there are databases identifying fugitives, missing persons, registered sex offenders, and persons subject to domestic violence protection orders.²⁰⁵ All of these sources of infor-

195. See Savanna’s Act, S. 227, 116th Cong. (2019–2020).

196. *Id.*

197. Annita Lucchesi, *Missing and Murdered Indigenous Women & Girls: A Snapshot of Data from Urban Cities in the United States*, URBAN INDIAN HEALTH INSTITUTE, at 7 (2017); AP Posting, *supra* note 194.

198. *Id.* at 4. AP Posting, *supra* note 194.

199. AP Posting, *supra* note 194; Lucchesi, *supra* note 197, at 1, 14, 22.

200. *Id.*; AP Posting, *supra* note 194.

201. Christopher B. Chaney, *Data Sovereignty in Tribal Governance: Is the Law Keeping Pace with Technology?* TRIBALNET MAGAZINE 12 (Fall 2018) <https://perma.cc/PKK4-RAGC>.

202. *Id.*

203. *Id.*

204. Christopher B. Chaney, *Data Sovereignty and the Tribal Law and Order Act*, THE FEDERAL LAWYER 24 (Apr., 2018) <https://perma.cc/F9G3-VR4T> (describing the various criminal databases within the FBI’s CJIS division).

205. *Id.* at 24.

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mation are potentially useful to tribal police officers, and could also be useful to tribal governments seeking to do background checks on potential employees. The TLOA was intended to facilitate effective partnerships between state, local, federal and tribal law enforcement agencies.²⁰⁶ The CJIS favors “shared management” by the various law enforcement agencies and has created four nonfederal working groups, as well as a Tribal Task Force, to facilitate cooperation among governments and their representative agencies and offices.²⁰⁷

The FBI CJIS Uniform Crime Reporting Program issues an annual Crime in the United States report, and tribal jurisdiction law enforcement data is included in this report.²⁰⁸ Accurate data depends upon the input from tribal law enforcement agencies. According to Chaney, tribal law enforcement agencies that receive funding from the BIA Office of Justice Services are required to report crime data to the BIA, and the TLOA requires the BIA to forward the data to the FBI CJIS UCR program on a tribe-by-tribe basis.²⁰⁹ The FBI also operates specialized programs enabling law enforcement agencies to share data and these may be utilized by tribal governments.²¹⁰ In addition, federal law authorizes tribal governments in some circumstances to have access to the FBI’s fingerprint files, for example, when they hire individuals who will be working around children or occupying positions of authority as casino officials.²¹¹

The TLOA model is an example of the federal government building upon the trust responsibility to include tribal law enforcement agencies within the federal law enforcement data system. Notably, tribal governments are recognized as holding sovereignty over data collected by tribal law enforcement officers, and the act of sharing this data is incentivized by federal law, but still depends upon tribal consent.²¹² Some tribal governments may be hesitant to broadly share tribal law enforcement data, due to troubled histories with local and state law enforcement officers and tribal residents. Historical context influences the likelihood of data-sharing, as the next section of this essay illustrates.

B. Health Data

In 2004, national attention focused on a lawsuit filed by the Havasupai Tribe against Arizona State University and the Arizona Board of Regents

206. *Id.* at 23.

207. *Id.* at 24.

208. *Id.*

209. *Id.*; 25 U.S.C. § 2802(c)(15) (2010).

210. Chaney, *supra* note 204, at 25.

211. *Id.*

212. *Id.* at 24.

for alleged research misconduct in association with a diabetes research project undertaken by an ASU faculty member, who subsequently moved to the University of Arizona.²¹³ The Tribe alleged that physical samples (blood, tissue, handprints) and genealogy information taken from tribal members during the diabetes study had later been shared with researchers at other institutions for other purposes, including investigations of population origin and migration, and schizophrenia, which were not authorized as part of the diabetes study.²¹⁴ The Tribe asserted that these uses violated human subjects research protocols requiring informed consent, and that they were harmful to the Tribe and its members because they stigmatized the Tribe and were also culturally offensive because they challenged the Tribe's own origin stories and attempted to advance other theories of human origins.²¹⁵ The researcher claimed that she had done nothing wrong because data-sharing was common practice among biomedical researchers at the time, but it was clear that the researchers had not obtained consent for the reuse of the data, particularly in ways that were antithetical to the Tribe's interests and cultural belief system.²¹⁶ The case ultimately settled out of court²¹⁷ and ASU repatriated the physical samples and paid a sum of damages to the Tribe and the affected members, and also undertook several initiatives designed to assist the Tribe. However, the case caused many tribes, including the Navajo Nation, to ban genetic research and posed significant barriers to biomedical researchers seeking to work in tribal communities.²¹⁸

In Canada, a similar case involving the Nuu-chah-nulth First Nation in British Columbia, Canada, arose, when the blood samples taken from tribal members were shared with other researchers without the Tribe's knowledge or consent, and that case also resulted in the return of the blood samples.²¹⁹ The Canadian Institutes of Health Research (CIHR) then engaged in an extensive consultation process with Indigenous communities to develop new protocols for researchers undertaking studies with tribal members.²²⁰ The CIHR guidelines required "reconsent for multiple uses of samples, ac-

213. Rebecca Tsosie, *Cultural Challenges to Biotechnology: Native American Genetic Resources and the Concept of Cultural Harm*, 35(3), JOURNAL OF LAW MEDICINE AND ETHICS 396, 396 (2017); Rosalina James et al., *Exploring Pathways to Trust: A Tribal Perspective on Data Sharing*, 16(11), GENETIC MEDICINE 820 (2014).

214. Tsosie, *supra* note 213, at 396.

215. *Id.*; see generally *Tilousi v. Arizona State U.*, 04-CV-1290-PCT-FJM, 2005 WL 6199562, at *2 (D. Ariz. Mar. 3, 2005) (later action that gives background information on the case against the University and its professors).

216. Snipp, *supra* note 3, at 49.

217. Amy Harmon, *Indian Tribe Wins Fight to Limit Research of its DNA*, NEW YORK TIMES (April 21, 2010), <https://perma.cc/JQ6E-VRFS>.

218. *Id.*; Sara Reardon, *Navajo Nation Reconsiders Ban on Genetic Research*, NATURE (Oct. 6, 2017), <https://perma.cc/3E4D-6E9L>.

219. James et al., *supra* note 213 at 822.

220. *Id.*

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knowledge of intellectual property (IP) rights, and protection of Indigenous rights in cultural and sacred knowledge.”²²¹

In the United States, the National Institutes of Health (NIH) data-sharing policies are intended to maximize public benefit derived from genetic studies by increasing research efficiency and use of a “pooled data resource” for future studies.²²² However, the NIH engaged in extensive review of its processes in the wake of the Havasupai case to assess tribal interests and the federal trust obligation to protect the sovereign rights of tribal governments.²²³ There are several issues that arise with genetic research, involving research agreements, the collection, management and secondary use of research data, and the policies concerning access to data stored in federal repositories.²²⁴

The NIH released a Request for Information (RFI) on October 10, 2018 on three specific proposed provisions within their draft NIH Data Management and Sharing Policy.²²⁵ The provisions concern three areas: (1) the definition of “Scientific Data”; (2) the requirements for Data Management and Sharing Plans; and (3) optimal timing for implementing the policy.²²⁶ On that same day, the NCAI distributed a set of recommendations for tribal leaders.²²⁷ In brief, they recommended that the definition of “scientific data” should be modified to include “data used to support scholarly publications and presentations.”²²⁸ Because scholarly presentations often occur prior to a researcher’s publication of the research study, these presentations can also be used to advance the field of knowledge, and should also be under the governance authority of the tribe. Currently, the NIH Common Rule provides that researchers who use federal funding must follow tribal research codes, which are often more restrictive than the Common Rule.²²⁹ Thus, the definitions within tribal research codes, including the definition of “data,” should be binding upon researchers who seek to work with the tribe and tribal members.

NCAI also recommends that all plans involving research and scientific data with American Indian and Alaska Native tribes should include specific

221. *Id.*

222. *Id.* at 820.

223. *Id.* at 820.

224. *Id.* at 820.

225. NOT-OD-19-015: *Request for Information (RFI) on Proposed Provisions for a Draft Data Management and Sharing Policy for NIH Funded or Supported Research*, NATIONAL INSTITUTE OF HEALTH (Oct. 10, 2018), <https://perma.cc/5WAF-YF3T>.

226. *Id.*

227. Email from NCAI Policy Research Center to Author, *NIH Request for Information: Proposed Provisions for a Draft NIH Data Management and Sharing Policy for NIH Funded or Supported Research* (Dec. 10, 2018) (copy on file with MONTANA LAW REVIEW).

228. *Id.*

229. 45 C.F.R. 690.101 (2017).

information on how the plan complies with tribal research codes, document official tribal approval for the plan, and should describe in detail how the plan implements tribal requirements on data management and sharing to “ensure that tribal nation(s) and their citizens, lands, and resources are protected” along with how the plan will implement any tribal restrictions to data sharing.²³⁰ NCAI recommends that the NIH staff should find plans unacceptable if they do not meet these requirements.²³¹

In addition, NCAI recommends that these restrictions should be operative anytime the data includes “data and information from American Indian and Alaska Native tribes and individuals.”²³² The researcher should describe in detail how the data was obtained and whether there is documentation of tribal approval for the plan for data sharing.²³³ The Tribe should govern each element of the plan, including the types of data to be collected and shared, any relevant associated data to be shared, the method of how the data will be processed or analyzed and the standards to be used in data collection and sharing.²³⁴ Tribal governments have continuously asserted that the NIH should engage in a formal consultation process with AI/AN tribal governments prior to adopting any official policy on data sharing.²³⁵

The legal and ethical issues for tribal communities working with biomedical researchers continue to emerge, given new forms of genomic research, for example those associated with the NIH “precision medicine” Initiative, which is directed at aligning medical interventions with a patient’s specific genome.²³⁶ Stanford University and the University of Arizona are among the research institutions that have secured grant funding from the NIH Precision Medicine Initiative.²³⁷ The projects require sampling and pooled data, so the participation of tribal members in these studies is seen as necessary to serve the mission of the NIH to “reduce health disparities” in marginalized populations, including Native Americans, but it

230. Email from NCAI Policy Research Center, *supra* note 227.

231. *Id.*

232. *Id.*

233. *Id.*

234. *Id.*

235. James, *supra* note 213, at 828; and the NCAI Policy Research Update, *supra* note 227, specifies that a public request for “comment” is not the same as the consultation required by federal law to effectuate the trust responsibility.

236. *Precision Medicine Initiative and Cancer Research*, NATIONAL CANCER INSTITUTE (Jan. 30, 2015), <https://perma.cc/H5CK-JU56>.

237. Kris Newby, *Health Disparities Research Center Launched with \$11.5 Million Grant*, STANFORD MED. NEWS CTR. (Apr. 19, 2016) <https://perma.cc/M2DC-DPHZ>; *Project Information, RESEARCH PORTFOLIO ONLINE REPORTING TOOLS* (Jan. 1, 2018, 8:58 PM MST), <https://perma.cc/8J9M-223T>.

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also raises the need for tribal consultation and specific protocols to discharge the trust responsibility.²³⁸

Federally-funded research studies will generally require a formal consultation process and restrictions upon data sharing.²³⁹ However, this may not be true for state-funded health research.

State health agencies also undertake health research, often through community health boards and agencies that serve both urban and rural populations. There are many Native Americans living in large urban areas, such as Los Angeles, Seattle, Albuquerque, Phoenix, and Portland.²⁴⁰ Some are enrolled members of federally-recognized tribes, some are not enrolled, some are members of state-recognized tribes, and some have Native Hawaiian ancestry. State health studies may require physical samples or behavioral health information, and they may include tribal data if relevant to the particular study (such as whether tribal healing modalities are effective in dealing with substance issues, such as opioid addiction). In those cases, it is not always clear what the state's obligations are. The individual participants will always have privacy rights that protect their individual identities, but some of the data is likely to trigger tribal concerns over data governance. The structures for cooperation are not as robust with respect to state/tribal healthcare systems as they are for tribal/federal systems, although there are very similar needs and concerns. In fact, state laws and policies might require collection of physical samples, such as newborn blood spots, that trigger cultural concerns similar to those expressed by the Havasupai Tribe.

There are many unresolved questions for state governments related to Indigenous data sovereignty. Do community healthcare clinics that are “tribally serving” have the right to assert Indigenous data sovereignty as a collective group? Are the informational privacy concerns of tribal governments met by having data “de-identified” for the individual participant? Do federally-recognized tribes, as beneficiaries of the federal trust responsibility, possess greater protections than Indigenous peoples that lack that status? Do states have any special legal or ethical obligations to Indigenous peoples more broadly? Clearly, there is a profound need for cooperative frameworks for consultation and respectful co-management of data by state/local governments, tribal governments, and the various educational institutions working on biomedical technologies.

238. *Project Information*, RESEARCH PORTFOLIO ONLINE REPORTING TOOLS (Jan. 1, 2018) <https://perma.cc/8J9M-223T>.

239. *e.g.*, *NIH Data Sharing Policy and Implementation Guidance*, National Institutes of Health (June 8, 2019) <https://perma.cc/DPIJ284QU>.

240. Matthew Snipp, *The Size and Distribution of the American Indian Population: Fertility, Morality, Migration, and Residence*, CHANGING NUMBERS CHANGING NEEDS AMERICAN INDIAN DEMOGRAPHY AND PUBLIC HEALTH 39 (Gary D. Sandefur, Ronald R. Rindfuss Barney Cohen eds., 1996).

C. Environmental Data

Indian Country Today recently ran a special report that offers a compelling example of the data issues relevant to environmental regulation on the reservation.²⁴¹ The story takes place in Red Valley on the Navajo Nation, near the Chuska Mountains, on lands used as a summer sheep camp for generations by the family of Sally Benally and her daughters, Orlinda Benally and Marlene Begay.²⁴² Within a quarter mile of the family's wood cabin and corrals, is an idle oil well, drilled in 1967, but not used for 18 months.²⁴³ It is one of the ten "idle" oil wells surrounding the cabin.²⁴⁴ The pipelines surrounding the wells sit on top of the dirt, but they are now "ragged and frayed."²⁴⁵ The air smells like "burnt rubber, sulfur and rotten eggs," and the water from the spring in the mountain, once clear, now "runs yellow" at many times, according to residents.²⁴⁶ The family and their neighbors complain of feeling sick, with headaches, nausea, sore throats, and have reached out to the Navajo Nation Environmental Protection Agency, the Navajo Nation Natural Resources Department, the Bureau of Indian Affairs and the Bureau of Land Management, requesting an analysis of air and water quality, but have not yet received a response.²⁴⁷ Clearly, there is an environmental health problem for the Benally family and their neighbors, but what is the solution?

The problem in this case-study is not fracking, which causes similar health effects in residents, but rather, it is the decaying infrastructure of the oil boom of the past century.²⁴⁸ According to the reporter, there are an estimated 3.5 million oil and gas wells in North America, but there is no "federal agency or national organization" that has a cumulative index of the wells, their location, or their status as "inactive" or idle.²⁴⁹ If an oil or gas well is inactive and not capped, it becomes a conduit for the escape of hydrocarbons, such as benzene, salt, and heavy metals (including uranium), into the air and adjacent surface and underground water resources.²⁵⁰ It also emits air pollutants, including hydrogen sulfide, ozone, and methane gas, which are all highly toxic and carcinogenic.²⁵¹ The release of greenhouse

241. Rebecca Clarren, *Special Report: Poison Air at Sheep Camp*, INDIAN COUNTRY TODAY (Sept. 5, 2018), <https://perma.cc/24CD-9EZT>.

242. *Id.*

243. *Id.*

244. *Id.*

245. *Id.*

246. *Id.*

247. *Id.*

248. *Id.*

249. *Id.*

250. *Id.*

251. *Id.*

gases from unused wells is actually a bigger contributor to climate change than hydraulic fracturing.²⁵² The contaminated water from uncapped wells discharges widely, affecting the San Juan River and other rivers, which are running low. The Four Corners region received less than half the normal amount of moisture last winter.²⁵³

The environmental impacts of idle wells are known and documented. In Red Valley, a sign actually warns of “Poison gases” in the vicinity of the wells. According to federal policy, “abandoned wells” should be capped by concrete and sealed when they are no longer in use, and the adjacent land should be restored.²⁵⁴ However, the necessary environmental assessment for abandoned wells and the actual well capping and remediation can cost thousands or even hundreds of thousands of dollars, and most companies will not willingly assume this cost.²⁵⁵ Furthermore, when oil and gas prices are down, the companies save money by letting the wells go idle, only to be reactivated when the prices rise.²⁵⁶

This is a national problem, of course, but the problem is particularly compelling for Indian country. Many oil and gas wells in the United States are on public lands managed by the BLM and other federal agencies²⁵⁷—lands which are not inhabited. In comparison, oil and gas wells on tribal lands are within the sovereign territory of Native nations and affect the permanent homes and livestock range for tribal members.²⁵⁸ There is no place for residents to move when the levels of poisonous gas rise, and in most cases, they lack the resources to temporarily relocate as well. In short, the environmental pollution caused by unused wells jeopardizes the health of tribal members, and the environmental pollution contaminates air and water resources, as well as the livestock that tribal members use for food and subsistence.

Who is monitoring the problem? According to a 2015 report of the Government Accountability Office (GAO), there is no comprehensive inventory of oil and gas wells on tribal lands.²⁵⁹ In the San Juan basin alone, there are more than 500 wells, and “possibly several thousand.”²⁶⁰ BLM is responsible for monitoring oil and gas wells on most tribal lands, and yet

252. *Id.*

253. *Id.*

254. *Id.*

255. *Id.*

256. *Id.*

257. *About the BLM Oil and Gas Program*, United States Department of the Interior Bureau of Land Management, (June 8, 2019), <https://perma.cc/K45Z-88J8>.

258. Clarren, *supra* note 241.

259. *Id.*; *Indian Energy Development: Poor Management by BIA Has Hindered Energy Development on Indian Lands*, GOVERNMENT ACCOUNTABILITY OFFICE, GAO-15-502 at 22–24 (GAO 2015). SEE COMMENT

260. Clarren, *supra* note 241.

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the agency does not have a comprehensive record of reviews conducted to determine the number of active versus idle wells.²⁶¹ The GAO and Interior Department admit that the database used to identify idle wells is inaccurate and incomplete, and the Agency lacks a clear strategy to review the wells.²⁶² One BLM official, who apparently spoke to the reporter under conditions of anonymity, stated that the “agency routinely prioritizes processing drilling permits over monitoring and encouraging companies to plug and clean old wells.”²⁶³

So, who is looking out for the interests of tribal members? The BLM officials are not required to visit inactive wells. Even when they do, they are not required to conduct routine air, soil or water quality testing, and they instead rely on “sight and smell” to determine if an inactive well is leaking methane or other contaminants.²⁶⁴ One inspector stated that “Whether tribal resources are protected really comes down to how loudly . . . a tribe advocat[es] for themselves with BIA and BLM.”²⁶⁵ If the harm is not documented, then there is little that a tribe can do to require “compliance” with prevailing pollution control limitations.

Tribal governments vary in their capacity to exercise adequate environmental regulatory oversight, and data acquisition and management is pivotal to any successful environmental regulatory program. The Navajo Nation has its own Environmental Protection Agency,²⁶⁶ but still coordinates regulatory oversight with the BIA and the BLM. The Southern Ute tribal government created its own oil and gas corporation, Red Willow Production Company, twenty-six years ago and took over management of leases and regulatory responsibilities that were formerly under the authority of the BIA and BLM.²⁶⁷ The Southern Ute Tribe maintains that this is more protective and also affords economic gain to the tribe by ensuring that lease revenues go back to the Tribe.²⁶⁸ The tribal government is invested in oil and gas drilling enterprises throughout the country, and is exploring development of the shale formation that underlies the reservation and has the potential for 1,500 additional oil and gas wells.²⁶⁹

261. *Id.*

262. *Id.*

263. *Id.*

264. *See Id.*

265. *Id.*

266. *See* Rebecca Tsosie, *Climate Change, Sustainability and Globalization: Charting the Future of Indigenous Environmental Self-Determination*, 4 ENV'T'L & ENERGY L. & POL'Y J. 188, 214 (2009).

267. Clarren, *supra* note 241.

268. *Id.*; Catherine Traywick, *A Tale of Two Tribes: Colorado's Southern Utes Want to Drill as Sioux Battle Pipeline*, *The Denver Post* Oct. 15, 2016, <https://perma.cc/B4PV-FTLN>.

269. Clarren, *supra* note 241.

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Finally, who is accountable for environmental harm once it is documented? Energy companies were required to post bonds before undertaking development, but for oil and gas wells dating back several years, the bonds are largely insufficient (maybe \$8,000—which could be a blanket bond to cover all wells). Many companies have since declared bankruptcy or dissolved their business.²⁷⁰ Thus, no one really has financial accountability or even an estimate of what it would cost to restore reservation lands to their former condition.

The situation with abandoned and unused oil and gas wells mirrors that of abandoned uranium mines. As of 2015, there were over 500 known abandoned uranium mines on the Navajo Nation, and only a few dozen could actually be linked to known owners for purposes of starting an investigation into liability for clean-up.²⁷¹ The Navajo Nation at that time lacked any official access to the CERCLA Superfund because the sites were not formally listed on the National Priorities List.²⁷² Only one site, the Northeast Church Rock site, was in the early stages of remediation, but it was unclear where the heavily contaminated soil could be placed.²⁷³ The Navajo Nation issued a moratorium on new uranium mining within reservation lands.²⁷⁴ However, the State of New Mexico authorized uranium mining on fee lands within the checkerboard area using the newer “In situ” leach technology, propounded as more “safe” but still posing a considerable environmental risk to the aquifer which provides the only source of drinking water to tribal members within the area.²⁷⁵ The population of the checkerboard area is virtually all Navajo, and non-Indian owners use their fee lands for mining and development and not for residential use.²⁷⁶

It is impossible to understand the current issues without reference to the historical context of the problem. In the Southwest, tribal lands have been used for over a century to feed the country’s appetite for cheap energy—mainly by exploitation of fossil fuels—as well as the demand for nuclear weapons and energy. The environmental health consequences of this development are severe and continue to grow as the infrastructure for twentieth century energy development falls into decay, causing widespread

270. *Id.*

271. Rebecca Tsosie, *Indigenous Peoples and the Ethics of Remediation: Redressing the Legacy of Radioactive Contamination for Native Peoples and Native Lands*, 13 SANTA CLARA J. INT’L L. 203 (2015); Brandon Loomis, *Uranium Mine Cleanup on the Navajo Reservation Could Take 100 Years: Uranium is Still a Threat*, ARIZ. REPUBLIC, Aug. 4, 2014, at A1.

272. *Id.* at 207–08; *Uranium Contamination: Overall Scope, Time Frame, and Cost Information Is Needed for Contamination Cleanup on the Navajo Reservation*, GOVERNMENT ACCOUNTABILITY OFFICE, GAO-14-323 12 (GAO 2014).

273. Tsosie, *supra* note 271, at 208; *Uranium Contamination*, *supra* note 272, at 24.

274. Tsosie, *supra* note 271, at 256; *Uranium Contamination*, *supra* note 272, at 12.

275. *Id.*

276. Tsosie, *supra* note 271, at 224.

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air and water pollution on tribal lands. However, rather than dealing with the costs of remediation of abandoned mines, decaying pipelines, and idle oil and gas wells, the federal agencies that oversee energy development continue to prioritize the authorization of new oil and gas wells, and the operation of energy resource extraction through new high pressure (hydraulic fracturing) technologies that also have profound environmental and health effects.

The net result of this gap in data and governmental action is that the foundational systems of survival—land, water, food resources—are in jeopardy and are increasingly vulnerable, given the drought conditions that exacerbate the environmental impacts. Energy resource development and climate change have contributed to the perfect storm that exists in Indian country. Poverty, underdevelopment, and political transition at the national level have caused additional impacts. As this discussion indicates, no single entity has the data to fully understand the problem, and there is no clear mechanism to secure the data or deploy it for the benefit of tribal governments and their members. Indigenous data sovereignty is necessary but requires careful thought as to how tribal data systems and structures will differ from the counterpart structures used by other governments.

For example, in relation to the Red Valley case study, the Navajo tribal members are clearly suffering health impacts and have requested an environmental assessment of the problem. They have requested this of the tribal government, the BIA, and the BLM.²⁷⁷ Who should have the duty to respond? What information should be gathered? Will the information include health data from each of the residents? Once the data is gathered, who should be entrusted to do the analysis and release the findings? What mechanisms exist to protect the information from misuse? Can tribal members trust the tribal government to house, use, and manage the data? How about the BIA or the BLM?

It is likely that the BLM and perhaps the BIA are primarily responding to the current Administration's views about environmental regulatory priorities.²⁷⁸ The priorities of the Navajo Nation may be different. Tribal governments can choose to align themselves with the dominant system's approach, placing the emphasis upon economic benefit, or they can adopt their own approach to ensure that community health and resilience are protected. The final section of this article explores the importance of political and cultural sovereignty to tribal data governance and effective intergovernmental coordination over data.

277. Clarren, *supra* note 241.

278. For example, on Tuesday Dec. 11, 2018 BLM held an auction leasing 150,000 acres of land near Utah's Arches and Canyonlands national parks for fracking, posing significant risks to air and water quality, as well as the protected wildlife and landscape of the national park areas.

V. CONCLUSION: WHAT CAN TRIBAL GOVERNMENTS DO?

Indigenous data sovereignty requires tribal governments to exercise both their political sovereignty and their cultural sovereignty. In the United States, federally-recognized tribal governments have specific legal rights by virtue of their recognized political status. Both Chaney's research and the recent NCAI study indicate that tribal governments are taking action to exercise data sovereignty in several ways.²⁷⁹ Many tribal governments are enacting laws authorizing certain types of tribal governmental databases, for example, case management systems for tribal government personnel dealing with child abuse cases, central data repositories for information on violent crimes on the reservation, data pertaining to racial discrimination against tribal members in border towns, data relevant to tribal culture, history and archaeological resources.²⁸⁰ Tribes are also passing laws dealing with the manner and length of time that the data must be retained.²⁸¹ Chaney also cites tribal laws designed to secure data accuracy, for example, by allowing tribal members to challenge the accuracy of data reported and inserted into a database.²⁸² Many tribes have passed laws restricting dissemination of tribally-retained data, and some even provide penalties for unauthorized release of or access to data within tribal control.²⁸³ Finally, Chaney cites tribes who have passed laws protecting data security and the integrity of tribal databases.²⁸⁴

These are commendable actions in the exercise of political sovereignty. Indigenous data sovereignty, however, also requires the exercise of cultural sovereignty. Many years ago, when I served on the Board of Directors of the Native American Rights Fund, I co-authored an article with my fellow Board Member, Wallace Coffey, who was the long-time Chairman of the Comanche Nation. We were dismayed about the United States Supreme Court's increasingly narrow view about what powers tribal governments have by virtue of their "inherent sovereignty," which equates to a political view of permissible jurisdictional authorities. Instead, we advocated for a vision of "cultural sovereignty" to give life to tribal inherent sovereignty, which is the "effort of Indian nations and Indian people to exercise their own norms and values to structure their collective futures."²⁸⁵ We stated that each group's cultural sovereignty comes from within, and it

279. Chaney, *supra* note 201, at 12.

280. *Id.*

281. *Id.* at 12–13.

282. *Id.* at 13.

283. *Id.*

284. *Id.*

285. Coffey & Tsosie, *supra* note 21, at 196.

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is “up to Indian people to define, assert, protect, and insist upon respect for that right.”²⁸⁶

Along with other tribal leaders and representatives, we later drew upon the concept of cultural sovereignty to form the Working Group on Culturally Unidentified Human Remains, which advocated for repatriation of Native human remains that were not “culturally affiliated” to a contemporary federally-recognized tribe for purposes of NAGPRA, and which were, at that time, argued to be the “property” of the museum or agency that had “custody” of the remains.²⁸⁷ At that time, there were thousands of Native American human remains that were designated as “culturally unidentifiable,” often because museums and agencies had not retained the data necessary to affiliate the remains with modern tribal governments, nor had they undertaken the required consultations in order to “culturally affiliate” the remains.²⁸⁸ Indigenous data sovereignty as cultural sovereignty turned out to be pivotal to gain justice for Indigenous peoples and their ancestors.

Indigenous data sovereignty is powerfully linked to the dynamic of cultural sovereignty. There is a great deal of information in libraries, archives, and records of the state and federal governments about Indigenous peoples. Federal agencies possess valuable data, often secured through required consultations with tribal governments about environmental and, or, cultural resources pursuant to statutes such as the National Environmental Policy Act and the National Historic Preservation Act.²⁸⁹ This information can be used for beneficial purposes or for harmful purposes. It is vitally important for Indigenous peoples to have a role at the decision-making table, and therefore tribal governments have a powerful interest in the participatory design of governance regimes for digital data.

The cultural sovereignty of Indigenous nations is rooted within each nation and is not a product of overt recognition or acceptance by the nation-state. This is clear with Native Hawaiian people, who continue to exercise their cultural sovereignty to protect their lands, resources and culture, despite the lack of federal recognition for their political sovereignty. Governance authority is enhanced when a tribal government has recognized political sovereignty within the United States federal system, but cultural sovereignty dates from time immemorial, and it is always part of Indigenous identity.

286. *Id.*

287. See generally Rebecca Tsosie, *NAGPRA and the Problem of ‘Culturally Unidentifiable’ Human Remains: The Argument for a Human Rights Framework*, 44 ARIZ. ST.L.J. 809, 860 (2012).

288. *Id.*

289. The consultation requirement stems from the Federal government’s trust responsibility and is reflected in various Executive Orders and statutory provisions. See Rebecca Tsosie, *The Conflict between the “Public Trust” and the “Indian Trust” Doctrines: Federal Public Land Policy and Native Nations*, 39 U. TULSA L. REV. 271, 285–88 (2003).

I will conclude this essay with some thoughts that were expressed at a conference on cultural sovereignty that we organized at Arizona State University in 2002 as a dialogue for tribal leaders. One of our speakers was the late Claudeen Bates-Arthur, who served as Attorney General for the Navajo Nation and also served as the legal director of DNA Peoples' Legal Services. She was a graduate of the ASU College of Law and one of the first Native American law graduates to be admitted to practice in Arizona. She was a strong and inspirational leader, but also someone who spoke her truth and dedicated her life to the people.

In order for tribal governments to take on the task of preservation of sovereignty, Bates-Arthur said, tribes must have leaders with knowledge of internal cultural sovereignty and, in addition, must have a vision of preservation for the seventh generation.²⁹⁰ She encouraged us to be mindful of the need to distinguish internal self-images from those that come in from the outside to influence who we are now.²⁹¹

That is really the vital force of traditional knowledge. Claudeen Bates-Arthur spoke of the instructions that were received from the Holy People who gave the Diné people their fundamental laws and philosophy.²⁹² These are the concepts that remain unchanged, despite the intrusions from the outside, and they give the people their identity in each successive generation. They also give life, balance and harmony: "We know how to live and survive as Navajo people because we were given instructions by the Holy People and rules and laws were given for us to follow."²⁹³

Tribal governments have an ownership interest in tribal data and traditional knowledge. They should be central participants in decision-making about data sharing with state, local and federal governments, to the extent necessary to effectuate the goals and interests of tribal governments and their members, and also to implement the federal government's trust responsibility to American Indian and Alaska Native Nations. State governments should be encouraged to give effect to tribal interests in exercising data sovereignty based on something like the "sovereign-difference" principle that Professor Woods has advocated. A collaborative and equitable system of data management is needed for the benefit of Indigenous peoples and their members. It is also needed to produce a more just and inclusive domestic government to serve the interests of all Indigenous peoples and future generations.

290. Claudeen Bates Arthur, *The Role of the Tribal Attorney*, 34 ARIZ. ST. L.J. 21, 24 (2002).

291. *Id.* at 21.

292. *Id.* at 23.

293. *Id.* at 25.

