

Some Thoughts on Recent Federal Initiatives: Artificial Intelligence and Indigenous Technology

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Abstract

In the recent push to link tribal communities in the US to high-speed internet services, the Federal Communications Commission has sought the input and cooperation of Indigenous people via the creation of its Native Nations Communications Task Force. Almost simultaneously, the Biden Administration has undertaken a new White House Indigenous Knowledge Initiative, formulated in consultation with tribal leaders beginning with the 2021 White House Tribal Nations Summit. The two initiatives might seem coincidental, but the opportunity afforded to Indigenous people in the US to evaluate the complex impacts Artificial Intelligence may have upon their traditional values is crucial. After many generations of suppression of their traditional thought, tribes have a chance to bring their worldviews into the discussions about impacts of such poorly regulated technologies as social media and the larger issues of artificial intelligence. This paper will explain a few of the more pressing issues that tribal nations might consider in their efforts to indigenize artificial intelligence, which should be a crucial element in their ongoing processes of self-determination. It is the third in a series of papers on internet impacts upon Indigenous communities by this author that have been presented at the WSSA Annual Conference. Two are now available in the Indigenous Policy Journal “Articles” section online.

In recent White House initiatives by US Presidents Obama and Biden, Native Americans have become a focus of a concerted effort to include them in the on-going technological and economic development of the country. At the same time, traditional knowledge of tribal nations have received a strong endorsement as the basis of cultural identity of tribal nations that should not only be protected, but relied upon for present and future policy in the US. In both the creation of the Native Nations Communications Task Force and the White House Indigenous Knowledge Initiative, Native peoples seem to be the beneficiaries of some thoughtful efforts by government officials to not only support the continuing policies of self-determination, but to bring that support into the new age of inclusion and mutual respect. In doing so, the benefits of the budding technologies of internet and computer intelligence are to be made more available across “Indian country” as a new level of respect and protection is to emerge from federal recognition of the issues surrounding traditional knowledge of Native people.

First, in the case of the Native Nations Communications Task Force, tribal representatives are joining with federal officials of the Federal Communications Commission, internet industry experts and others to bridge the “digital divide” by assuring broadband services throughout Indian country.¹ It is mainly an effort to build the physical infrastructure and professional capacity for tribal nations to connect to the internet in ways that will strengthen their abilities to function in today’s cyber-dominated political and economic lifestyle in the US while retaining the status that Native nations now enjoy. As sovereign peoples under the self-determination policies that have emerged since the 1970’s, tribal nations are thus to be supported by the best

¹ “Chairwoman Rosenworcel Announces New Appointments to the Native Nations Communications Task Force.” Public Notice, Federal Communications Commission, February 2, 2022.

internet technologies available in their daily acts of governing and serving their peoples' social, political and economic needs.

That admirable goal of extending the very best broadband internet capabilities is, however, slightly tainted. The internet is dominated by several huge corporations, often referred to as Big Tech in the industry. Facebook/Meta, Microsoft, Amazon, Apple and Google and others depend upon a business model that is now well known as surveillance capitalism, the gathering of the personal data of users for the purpose of selling that data to advertisers, political operatives and any others they are willing to do business with. That is the reason they provide their platforms to users for free. It is an extremely profitable business model that preys upon the personal information of users who innocently click "accept" on privacy and user agreements when they first use internet services. Advertisers and political agents can thus buy extremely dependable data about not just our interests and backgrounds, but our psychological and emotional profiles as well in order to use behavior modification techniques on users for profit and/or political propaganda. As this and the other two papers by this author show, Native nations may have the opportunity to demand changes to that business model to protect their own sovereignty as new broadband services come to Indian country.

Secondly, as President Biden reinstated the White House Tribal Nations Summit in 2021, the White House Indigenous Knowledge Initiative was announced to guide all federal agencies in their activities in Indian country.² The fact that traditional thought remains a bulwark of identity for many indigenous people gives one pause to consider both the benefits of narrowing the digital divide across Indian country and maintaining and strengthening traditional values among tribal communities. But that initiative goes farther, at the urging of many tribal leaders, including the National Congress of American Indians.³ It also requires an elevated consultation process with tribes that seems to reach towards the levels intended in the UN's 2007 Declaration of the Rights of Indigenous Peoples (UNDRIP). Article 32 of that declaration provides two sections that are especially vital to this initiative:

- 1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.*
- 2. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.*

² "White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies," Pubic Notice, The White House, December 1, 2022. <https://www.whitehouse.gov/ceq/news-updates/2022/12/01/white-house-releases-first-of-a-kind-indigenous-knowledge-guidance-for-federal-agencies/>. Accessed 14 March 2023.

³ Melanie Lenart, "Indigenous Knowledge Goes to Washington: The Biden Administration is pledging to incorporate traditional knowledge into federal policy-making. Tribal leaders support the move, but say guidelines must be carefully written to protect 'sacred and sensitive' information." *Native Science Report*. A publication of American Science and Engineering Society, February 8, 2022. <https://nativesciencereport.org/2022/02/indigenous-knowledge-goes-to-washington/>, accessed 14 March 2023.

3. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.⁴

Biden emphasized the commitment of his administration to those standards as a nation-to-nation, two-way communications consultation process when tribal interests are involved in federal actions. He did so without mention of the UNDRIP, in a political atmosphere where his party and the Republican Party are locked in a conflict that may determine not only the future of democracy in the US, but the future of federal commitment to indigenous self-determination. That concern is important background for these initiatives, since Republicans have not emphasized a commitment to that policy recently.

The two federal initiatives seem to signal merely a renewed Democratic Party commitment to self-determination and sovereignty of tribal nations since the Republican Party has not endorsed the measures. Democratic presidents seem determined to build an atmosphere of mutual trust and respect, since President Clinton began the recognition of “Tribal Nations” in 1994 by creating what was then called the Tribal Nations Conference. Before that time, federal officials had seemingly intentionally avoided the word “nation” in referring to tribes. The gathering of hundreds of Native leaders at the White House was then revived by President Obama in 2009 as an annual Tribal Nations Summit. Of course, as the Trump Administration’s refusal to hold Native Nations Summits during his administration casts some doubt upon how binding such initiatives might be into the future, unless Congress acts to enshrine the idea of a summit into federal law. Still, tribes have begun to build upon the opportunities and to evaluate the threats that might arise in crucial areas of tribal development.

Another caveat to these initiatives is whether this means there will be prior, informed consent on the level where tribes may veto federal or corporate actions within their homelands. After all, consultation in its narrow sense has come to mean merely informing tribes of actions that might impact them in past versions of the “consultation” processes. Biden also issued Executive Order 13175 which sets otherwise high standards of consultation, emphasizing among federal executive department, but leaving the idea of opting out unmentioned. Among the sweeping provisions, the order says

Throughout a consultation, the head of each agency, or appropriate representatives, shall recognize and respect Tribal self-government and sovereignty; identify and consider Tribal treaty rights, reserved rights, and other rights; respect and elevate Indigenous Knowledge, including cultural norms and practices relevant to such consultations; and meet the responsibilities that arise from the unique legal relationship between the Federal Government and Tribal governments.⁵

⁴ “Declaration of the Rights of Indigenous People,” United Nations.
https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf. Accessed 14 March 2023.

⁵ Memorandum on Uniform Standards for Tribal Consultation, Order of the President of the US, Nov. 30, 2022.

Though there are some details that should concern tribes, these initiatives give special moment to the opportunity to consider deeply how Artificial Intelligence (AI), developed for and from a worldview largely foreign to tribal traditions, presents unique challenges for indigenous people today. This paper is dedicated to that effort with the hopes that it can offer some useful analysis of those threats and opportunities as tribal nations extend their traditional values deeply into the age of artificial intelligence. This author hopes traditional thought and values might be relied upon to consider some highly technological aspects of AI. In addition, some relevant conceptual developments that have arisen in indigenous studies will be employed to help frame consideration of some of the exploitive aspects of AI.

In thinking about the future, in this case the future of Indigenous society and thought, one is humbled by the many twists of chance that are likely to shatter the logic of any forecasting. Yet it seems crucial to try to imagine how the current trajectory of rapidly developing artificial intelligence will affect indigenous peoples as AI presents new opportunities of a better life along with new threats of cultural assimilation and invasive surveillance capitalism. If and when General Artificial Intelligence is made available in the current largely unregulated realm of the internet, tribal people will need to prepare for some incredibly diverse impacts in their use. Nearly unregulated control over this new intellectual, psychological, commercial and political tool is wielded by corporate oligarchical structures of the US and global economy. Surveillance capitalism⁶ has been the business model for the development processes of the internet and indigenous nations are not as yet in a position to control meaningful portions of the development of the AI that is emerging. As will be discussed, that situation belies any self-determination among indigenous nations over AI, though that glaring issue could become a focus of indigenization of the phenomenon if tribal people can maintain authority over how AI and GAI are deployed in Indian country, especially if they can create their own high level of programming that mitigates some of the exploitive scraping of user data so rampant on the internet.

To begin the discussion, it is important to consider what role “technology” has played in the traditions of Indigenous communities in order to discover effective strategies for dealing with impacts of innovations on tribal values. Tribal peoples have been devastated by near-extinction via new diseases, communities have sometimes been atomized by policies and intentional neglect in the face of attacks from outside, and they have had to adapt to new, imposed technologies in order to remain a people, united by some pretty powerful and inspiring characteristics of tribalism. Can those tribes still harness those characteristics as the almost seamless internet of things and hyper-commercial villains of the internet stalk their members?

When one realizes that purveyors of surveillance capitalism’s algorithms not only gather data on a user’s searches and social associations, but also can collect data on behaviors,

⁶ This author has written two papers on the issues of internet use in indigenous communities, using some of the analysis that follows here. Please see Richard M. Wheelock, “Internet Media and Tribal Sovereignty: Some Thoughts on Rapidly Changing Perceptions,” paper submitted in the American Indian Studies Section of the 63rd Annual Western Social Science Association Conference (a virtual conference during Covid-19 restrictions), 22 March, 2021. And Richard M. Wheelock, “Indigenous Spectrum Sovereignty: Creating a Place in Virtual Space?”, presented at the 64th Annual Western Social Science Conference, Denver, CO., 31 March, 2022. Both papers have been published as “articles” online in the *Indigenous Policy Journal*, Vol 33, No. 1, Spring, 2022. <https://www.indigenouspolicy.org/index.php/ipj/issue/view/46>. (Not peer reviewed). Accessed 14 March 2023.

personality characteristics including subconscious emotional responses to stimuli, and flaws in one's personal defenses, one is forced to wonder whether any human is safe using the 'net. Algorithmic spies sell data to advertisers and political agents who attack our psychological self, using so-called behavior modification techniques that reward certain responses in "users" and punish others in subliminal ways that are difficult to even notice as we use our smart phones or do our research for a paper we hope to publish. Few people seem to realize that a personality profile of each of us can be easily developed using those algorithms. In American mass society, government spying⁷ on its citizens has long been a well-known threat, with many calling for oversight against it.⁸ But in the corporate economic sphere where citizens meet artificial intelligence, little meaningful regulation has arisen under current de-regulation regimes. While data-scrappers claim they remove the identity of individuals in their analysis, the ability of their algorithms to classify data into categories that are used to target very specific groups of the overall global user pool make that assurance flimsy, to say the least. User and privacy agreements of Tech corporations force users to quickly surrender any rights they have on their private information for corporate exploitation via algorithmic analysis for sale to advertisers or political agents. Users are forced to allow that collection and analysis or opt out of internet usage entirely, since near-monopoly ownership of access to the internet continues. Also, user psychological behaviors are captured while using the services of Alphabet (Google), Amazon, Apple, Meta (Facebook) and Microsoft. Smaller companies are even designed specifically to purchase personal data from Big Tech for specific goals, like political manipulation during elections. The story of Cambridge Analytica and its role in the 2016 US presidential election is instructive in this realm.⁹ It is the business model for Big Tech, which allows users access to their platforms at little or no cost while relying upon algorithmic gathering and analysis of every aspect of user behavior.

With the extension of the internet of things, in fact, practically any device that is connected to the internet is used to gather behavioral data, supposedly to monitor user benefits. "Affective computing" is a term used to develop incredibly detailed psychological profiles of users and can be used to manipulate behavior as well as assess user needs and preferences.¹⁰ It seems no one is exempt from this surveillance, since we all must pass through many environments where internet-connected devices monitor such things as facial recognition, physical cues of emotional behavior, and even mood swings. So far, little regulation or even public review of such surveillance has taken place as corporations maintain "trade secrets" to protect their nearly unlimited authority over the process.

⁷ For existing rules on federal international surveillance, see "Guiding Principles on Government Use of Surveillance Technologies," US State Dept., Mar. 30, 2023, <https://www.state.gov/guiding-principles-on-government-use-of-surveillance-technologies/>, accessed 7 Apr. 2023. Similar philosophies guide national policies.

⁸ Cliff Maloney, Jr. "It's time to End big Government Spying on American Citizens," *The Hill*. 11 Nov. 2017, <https://thehill.com/opinion/white-house/358509-its-time-to-end-big-government-spying-on-american-citizens/>. Accessed 5 Apr. 2023.

⁹ Please see "Cambridge Analytica," *Wikipedia*. https://en.wikipedia.org/wiki/Cambridge_Analytica, Accessed 31 March 2023 for a rather thorough discussion of the impacts of political manipulation of users' data via algorithmic analysis to impact elections.

¹⁰ "Affective Computing," *Wikipedia*. https://en.wikipedia.org/wiki/Affective_computing. Accessed 31 March 2023.

It is especially hard to put the entire picture of surveillance capitalism together, since we all think of ourselves as rational persons, with the power to easily reject any attack on our internal personal character that a computer might wield. Shoshana Zuboff, in her revealing 2019 book *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*,¹¹ pulls no punches in her analysis of the threat posed by unregulated development sponsored by Big Tech and the many smaller internet businesses intent upon using the business model of surveillance capitalism to get very rich very quickly. And, political groups and hackers everywhere can also buy and even gather personal data themselves on internet users in their attempts to influence our behaviors and narrow our possible understandings of the public issues of their choice. It is a dark picture, one that seems almost unapproachable under the current political stalemate in Congress over regulation of any kind in the internet realm. Only the European Union has enacted meaningful regulation¹² of this global network, and that regulation seems a pittance in the emerging din of hyper-commercialism¹³ and targeted political information that has resulted from surveillance capitalism and hyper-commercialism.

Some think that Zuboff and others over-estimate the power of these behavior modification techniques and instead see the major threat of unregulated AI as some version of hacking. The fact that thousands of personal data and identity details might be hacked is more of a threat in their view. Cory Doctorow, for example even opines that Big Tech, like Amazon, Facebook /Meta, Google/Alphabet, Apple and Microsoft need to be broken up under anti-trust laws so they don't actually get larger as they attempt to adapt to any new regulations that might be enacted. He also feels that Big Tech is guilty of exaggerating the effectiveness of its behavior modification techniques in order to overcharge prospective advertisers or political organizations who hope to gain very predictable outcomes for their micro-targeted advertising, aimed at specific segments of the overall user population.¹⁴ Either way, the problem is that few users seem to be aware of the depth of the data-gathering they are subjected to as they use the many applications on their devices, which have become so much a part of their intimate relationships and their daily work and leisure lives. Momentum for establishing regulations is suddenly accelerating as this paper is written, as quite a number of initiatives await consideration by Congress as this paper is written.¹⁵

¹¹ Note especially Zuboff's Chapter Ten "Make them Dance," pp. 292-327 for her evaluations of the advanced levels of behavior modifications currently possible using data from surveillance capital's processes. Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, (New York: Public Affairs, 2019).

¹²"General Data Protection Regulation," *Wikipedia*. Accessed 4 April 2023.

¹³ For a rather thorough development of the concept of hyper-commercialism, see Robert W. McChesney, *The Problem of the Media: U.S. Communication Politics in the 21st Century*. New York, Monthly Review Press, 2004, p. 158-168.

¹⁴ Cory Doctorow, *How to Destroy Surveillance Capitalism*, New York: Stonesong Digital, L.L.C 2020, p.

¹⁵ Melissa Heikkeila, "Suddenly Everyone Wants to Talk about How to Regulate AI," *The Algorithm*. MIT Technology Review, 22 May 2023. This very recent email service to this author lists the many congressional initiatives that seem to be getting more attention since the very recent announcement of the release of such AI services as ChatGPT to the public.

The Rapid Development of New Artificial Intelligence – Artificial General Intelligence

It is also difficult to keep up with the rapid development and public availability of AI and now, General Artificial Intelligence. Very recently, *Time Magazine* has reported on the steady, then sudden, developments in the technology involved. In an article in its February 27-March 6 issue, the magazine reported that even in creative processes, usually reserved for humans, AI is fully capable of accomplish human-like “thinking.” Andrew R. Chow and Billy Perrigo report that

As profit takes precedence over safety, some technologists and philosophers warn of existential risk. The explicit goal of many of these AI companies – including OpenAI – is to create an Artificial General Intelligence, or AGI, that can think and learn more efficiently than humans. If future AIs gain the ability to rapidly improve themselves without human intervention, they could potentially wipe out humanity. An oft-cited thought experiment is that of an AI that, following a command to maximize the number of paper clips it can produce, makes itself into a world-domination superintelligence that harvests all the carbon at its disposal, including from all life on earth. In a 2022 survey of AI researchers, nearly half of the respondents said that there was a 10% or greater chance that AI could lead to such a catastrophe.¹⁶

The level of danger to mass society and to smaller groups like tribes and to the many individuals involved is obvious here. Rapid changes in the social relationships and the economic environment have been traumatic in the past experience over generations of indigenous peoples; but especially for people born before the development of the internet, the storm of changes are likely to become dizzying. For tribal elders especially, cultural and social isolation could be exacerbated. Since much valuable traditional knowledge is experience-based, tribes face many such challenges at a new pace in the years ahead. As Vine Deloria, Jr. prophetically observed in 1997 in a short video produced for the film series “In the Light of Reference,” released in 2001,

...I don't think you can take the psychological pressure of being in a situation where you start out being a human being, you start adding these extensions to yourself and finally you find yourself part of a machine and there's no way to get out. I don't think people are built for that psychologically and I think it's going to blow.¹⁷

Deloria's comments were aimed the general problem of the over-technologizing of American life, and even included a comment that he thought people were likely to go into the streets and start shooting each other because of the psychological strain involved. He said that no one can stop technology's rapid development because individuals make a decision to use new devices or concepts for convenience, and entire technological systems are adopted without much thought as

¹⁶ Andrew R. Chow and Billy Perrigo, “The AI Arms Race is Changing Everything: Tech Companies are Betting Big on AI. Are they Making the Same Old Mistakes?” *Time*, 27 Feb. – 6 Mar., 2023, p. 52.

¹⁷ Vine Deloria, Jr., “Vine Deloria, Jr. on Technology's Toll,” Video. Sacred Land Film Project, 1997. YouTube, <https://www.youtube.com/watch?v=x-XGnk4VbeA>. Accessed 16 March, 2023.

to the consequences beyond the opportunity for huge revenues. One might add that engaging, corporate-sponsored campaigns tout new technology in extremely positive terms, making the adoption process almost seamless. A kind of arms race among users results, where one's social and economic competitors force one to use technologies in order to keep up. It is a pessimistic take on today's rapid development of technology as extensions of humans, which is especially poignant as AI now challenges the human brain that first created it for dominance in future human endeavors.

It is also instructive to note that corporations in charge of the GAI processes have rushed ahead of any meaningful regulation and released new programs to the public in the interest of profits over safety. In fact, as some of the larger players in the development of GAI called for a slow-down in its development, other smaller corporate players rushed ahead, threatening the possible copyrighting and monopolization of the technology Microsoft and others were planning to accomplish.¹⁸ That forced a kind of arms race among corporations that quickly obviated any slow-down among competing corporations that might allow fuller evaluation of social consequences of the release of first-draft levels of the technology. As a result, emerging GAI programs are becoming widely available without needed review. DALL-E2 by OpenAI and Chat-GPT have already been released to the public, making "us" the guinea pigs for research with uncertain results.¹⁹ As this paper is written, insiders in the tech industry are warning of an imminent security disaster if AI chatbots continue without regulation.²⁰ Those same corporations in whom the Supreme Court of the US has recognized "personhood" under the law²¹ are clearly operating beyond the law in ways no person would be allowed to do, risking the public safety in ways few can fully imagine.

Traditional Knowledge and AI: Threats and Opportunities

Meanwhile, the federal government, through the initiatives of President Biden's administration, has reinvigorated its attempts to recognize the inherent cultural rights of indigenous peoples in its policy developments reaching across the Executive Branch. The 2022 announcement of its Indigenous Knowledge Initiative has been heralded as a new page in the government-to-government relationship tribes themselves have sought since first contacts. According to the announcement, tribal people have been involved extensively in the new "guidance" for federal agencies as they frame policies that explicitly deal with consultation about and reliance upon traditional knowledge. Indigenous peoples have participated in efforts of the White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) in developing the guidance.

¹⁸ Chow, Perrigo, p. "Machine Learning Warning," *Time*, Jan. 30/Feb 6, 2023, p. 54.

¹⁹ Chow, Perrigo, p. 55.

²⁰ Melissa Heikkila, "Three ways AI Chatbots are a Security Disaster," *MIT Technology Review*. 3 April 2023. https://www.technologyreview.com/2023/04/03/1070893/three-ways-ai-chatbots-are-a-security-disaster/?truid=&mc_cid=51107816df&mc_eid=e06d413fff, accessed 3 Apr, 2023.

²¹ Since 1820, the US Supreme Court has issued at least ten decisions that have built the idea that corporations are "persons" under the law and should have the rights of persons. Please see <https://www.alternet.org/2014/07/10-supreme-court-rulings-turned-corporations-people>. Accessed 16 March 2023.

To Develop the guidance, OSTP and CEQ led a working group of more than 25 federal departments and agencies. The White House engaged more than a thousand individuals, organizations, and Tribal Nations on elevating Indigenous Knowledge in federal decision making. Engagement included Nation-to-Nation Consultation, meetings and input from more than 100 Federally Recognized Tribes, public listening sessions, Native Hawaiian and Pacific Islander Roundtables, a Native and Indigenous Youth Roundtable, conference outreach, and dozens of individual meetings with others with experience and expertise on Indigenous Knowledge. In summer 2022, a draft of the guidance was released to Tribal Nations for consultation. Input from that consultation has shaped the final guidance.²²

It seems the Biden Administration is meeting the UNDRIP guidelines as directly as it can, making some headway on the federal responsibility incurred when the US finally did endorse the UNDRIP several years after the adoption of the Declaration by all but four nation-states in the UN. That commitment will meet some interesting challenges in the years ahead as AI becomes ever more present in the lives of both indigenous people and members of the mass society that surrounds Indian country. In light of the impending problems of AI security and surveillance capitalism and the impacts on traditional thought patterns, it may be too good to be true.

Artificial Intelligence Meets Traditional Knowledge in Our Times

Once one realizes the threat surveillance capitalism under new GAI developments is to individuals, it becomes more understandable how it also can also become a threat to tribal sovereignty and, potentially, to traditional knowledge of tribes, if misapplied. People in the mass society, in fact, may have fewer cultural resources in their daily lives than tribes do in protecting their individualized lifestyles from scrutiny and exploitation. For instance, mass society does not champion extended kinship structures that can be relied upon to help its members resist behavior modification techniques. Tribal nations retain crucial aspects of their culture and, as a result of their experiences with colonization, community members and tribal employees may also have developed useful political skills in the self-determination era since the late 1960's. It is crucial now to consider how indigenous peoples have maintained social, cultural and spiritual aspects of peoplehood despite the many genocidal forces lined up against them since contact with European colonizers on order to anticipate their meeting of entirely new levels of interaction with computer internet technologies and AI.

One way to frame an analysis of the interplay between tribal traditional knowledge and the nearly all-encompassing techno-environment of AI is to use a model of tribalism developed by a Cherokee anthropologist. In the 1960's, Robert K. Thomas adapted several anthropological definitions of tribalism into what he apologetically called the "Ideal Tribe," a compilation of salient features he considered crucial for indigenous people themselves to consider in the rapidly

²²“White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies,” Pubic Notice, The White House, December 1, 2022. <https://www.whitehouse.gov/ceq/news-updates/2022/12/01/white-house-releases-first-of-a-kind-indigenous-knowledge-guidance-for-federal-agencies/>. Accessed 14 March 2023.

developing policies emerging after the discredited federal Termination Policy of the 1950's. He was a bit apologetic about his model, saying it was a generalized view of latent tendencies of the tribes he had familiarity with and was only useful when one carefully considered the amazing diversity of tribes of North America. He also cautioned that the model is limited in that tribes of the 1960's had already been drastically impacted by colonization policies and each of the five features he delineated in the model might be hard to find in some reservation communities. Still, it provides a view of Native tribalism in North America today that helps us escape the popular usage of the term "tribal" that has come to mean those groups in mass society who happen to share allegiance to popular images, such as sports fans following a specific team's fortunes or political groups who isolate themselves from those with conflicting views. Thomas produced the model at the dawn of the Self-Determination policies that have since resulted in what today is called tribal sovereignty in the legal and cultural sense. He presented his model of tribalism with the hope that tribal people could rely upon a common set of characteristics to review as they fashioned their own future in the self-determination era. It consists of five features of shared value within a small community of people who shared a long history based upon reciprocal relationships. I have also added a few of my own ideas to Thomas' analysis which I hope helps update and adapt the model to current trends. New technologies, in this case, artificial intelligence or even general artificial intelligence, can be considered as they impact each of these characteristics. Here is the model:

**Some Characteristics of the
Ideal Tribe
An American Indian Perspective
(Adapted from comments by Robert K. Thomas)²³**

This model shows some characteristics of traditional tribes in a somewhat extreme form so that the distinctive nature of tribalism can be better understood. Thomas always stressed that these are "tendencies" of tribal structure that existed at "contact" and that modern tribes in the United States have been transformed in many ways, making it necessary to study specific tribes to see how well the model matches their experiences.

1. Kinship - Based Structuring –

- Practically all community activities rely upon Kinship organization
- "Institutions" are almost entirely made up of relatives taking personal responsibility for the tending of social obligations.
- A person's status in the community is a function of one's maturity and standing as a relative, in addition to, or in some cases in spite of, one's achievements.
- The sense of "relatedness" is often extended to many other beings besides humans.

²³Robert K. Thomas, classroom materials, presented in the course "Dynamics of American Indian Society," AIS 502 AX, American Indian Studies Master's Degree Program, Univ. of AZ, Tucson, Fall, 1983. The model was cited by this author in Richard M Wheelock, "The 'Ideal Tribe' and 'Mass Society' in Tribal Communications Research," *A Good Cherokee, A Good Anthropologist: Papers in Honor of Robert K. Thomas*. Steve Pavlik, ed., Los Angeles: UCLA Indian Studies Center, 1998. Pages 127-148.

2. Sacred Tradition (oral, tribal language) -

- “Instructions” are “given” at emergence, defining the People’s responsibilities and place in the cosmos. Ceremonies are required to maintain harmony in that “given” world. Co-Participation is an important ethic of this system.
- Relationships of respect to many other “beings” of the universe are often clearly defined
- Violations of the proper behaviors can bring about dire consequences, often in the form of illness or other suffering of the individual or among one’s kinfolk.

3. Sacred Society -

- This “given” society provides instructions for fulfilling the responsibilities within the community of humans, too
- A person learns the respect necessary to live in harmony with others from kinfolk, often face-to-face in an “oral environment.” Social controls include teasing, ostracism
- Again, violations of the respectful relationships can bring on dire consequences. Participation in ceremonies and kinship obligations is necessary for harmony

4. Responsiveness to Natural Environment

- There are many living, conscious “beings” in the natural environment, each requiring proper respect, so that mutually beneficial relationships may continue. Ceremonies cement those relationships.
- The People have a sacred homeland, given to them at the time of emergence, where they will fare well. This land is especially receptive to them.
- Specific sacred places carry special, sacred significance, as places of devotion, prayer and sacrifice for individual and community renewal

5. Closed and Bounded -

- Since individuals are defined by their obligations to relatives, membership and participation in the group is necessary.
- “New” members must be initiated or adopted into the kinship structure.

As broadband AI comes into their communities, tribes continue to maintain many of these characteristics as a basis to their identities and in meeting their responsibilities to creation. In doing so, they follow generations of ancestors who have had to adapt to hostile policies and social conditions. Another indigenous studies conceptual device developed by the author of this paper, is the idea of “coping” in the indigenous world. It provides a helpful bridge for understanding today’s adaptive processes in tribal communities.

Another Native American and Indigenous Studies Tool: Tribal Coping Strategies

Native and Indigenous Studies college-level courses like those at Fort Lewis College, have developed teaching and analytic tools to help students and others understand the challenges indigenous peoples have faced and will face into the future. Colonial policies have always been met by adaptations among the People, allowing continued tribal relationships among humans and with the forces and beings in the natural world. Tribal people continue to meet their

responsibilities to coming generations. The following Native and Indigenous Studies analytical tool was developed at Fort Lewis College with input from many students and from faculty research. It is an attempt to account for how tribal groups have survived historically since contact with European colonizers.

Coping in Indigenous Communities

While individual Native people may seek their destinies in their own ways, tribal nations must work to maintain a sense of shared identity despite the pressures of the mass society that surrounds them. Here are a few ways tribes have maintained a SHARED sense of their own “*peoplehood*” over the centuries.

-Enclavement – A process accomplished among members of a community where clear cultural and social boundaries are agreed upon and enforced by social pressure and other means. That strategy allows the community to reject some innovations entirely while providing internal cohesion in separate localized land areas, such as reservations or barrios in the US.

-**Compartmentalization** – This process allows one to categorize some elements of experience as “ours” or as “theirs,” the domain of outsiders. It allows an individual to pass from the tribal community values for a period of time and fully participate in the activities demanded by mass society, then return to the community and its values without undue social and psychological crisis. It allows tribal members to remain good, upstanding members of the community even if one needs to leave the community for a period of time for economic or other reasons.

-**Nativization/Indigenization** – The need to deal with cultural, economic, social or other changes within a community may mean the community creates standards of how innovations will fit among existing traditions. Indigenization means an innovation will be adopted in an adaptive form that does not conflict with existing traditions. Some forms have been sacralized by being included in the oral traditions.

-**Religious/Spiritual Movements** within communities – Many tribes have sought spiritual resolutions to the conflicts brought on by colonization. Native forms of Christianity or new ceremonies at least somewhat consistent with traditions might become normalized among all or portions of a tribal group.

-**Intertribal Alliances/Pan-Indianism** – Allying with other indigenous peoples as a way to survive amid powerful outside forces or, in the modern era of self-determination, to lobby for legal rights might characterize this coping strategy. Regional organizations like Northwest Indian Fisheries and national organizations like the National Congress of American Indians are examples. Potentially, indigenous peoples around the world can find common principles and political solidarity.

-**Language and Culture Preservation/Renewal/Resurgence** – this internal strategy is well under way among most tribal nations today. Vital elements of traditional culture and traditional thought are retained, especially in tribal schools and on-going, reinvigorated traditional events.

-Activism and Decolonization – In the current milieu, this strategy has involved organizing among indigenous people and their allies to confront injustice toward indigenous people and indigenous rights in public ways. Decolonization means the rejection by the community or by individuals of imposed models seen as inappropriate for indigenous survival and application of models that reinforce traditions and adaptations of the group in maintaining a specific indigenous/tribal identity.

-Economic Self-Sufficiency – escaping the problem of being economic hostages to non-indigenous economic structures, including federal largess, is the idea here. Dependence is not a good position from which to achieve self-determination.

-Seeking Mutual Respect – Pluralism – Communicating in an environment of mutual respect with non-indigenous people and even other tribal nations and teaching outsiders about respectful protocols can lead to common grounds with outsiders. Conditions of non-interference in tribal affairs by members of the mass society is the hoped-for result, even as indigenous peoples participate meaningfully in the mass societies that surround them.

Of course, several of the strategies in this “coping” model might be employed simultaneously or in some kind of rotation over a span of time in order to meet challenging circumstances. For group decisions of the magnitude of dealing with AI, though, an indeterminant span of time would seem to be required for consensus to emerge among the People. To fit AI into the “sacred society” of the ideal tribal model, group cohesion would seem to require either formal or even informal group adaptation for some elements of AI to be “indigenized” fully. As AI and broadband internet programs can also be very helpful in coping in most of the elements of the model, tribal groups are already utilizing internet processes in many, many appropriate ways, as examples reveal later in this paper.

Are Artificial Intelligence and Broadband internet “Appropriate Technology” for Tribes?

It is interesting to consider on-going partnerships in global economics that have implications for the extension of AI into indigenous communities. Most initiatives in that sphere of development have focused on a useful definition of the term “appropriate.” For instance, one author has advanced an attractive-sounding definition. A quoted section of Francis Vanek’s *Field Guide to Appropriate Technology*, (2003) in *ScienceDirect.com* puts it this way:

Appropriate technology is defined as any object, process, ideas, or practice that enhances human fulfillment through satisfaction of human needs. A technology is deemed to be appropriate when it is compatible with local, cultural, and economic conditions (i.e., the human, material and cultural resources of the economy), and utilizes locally available materials and energy resources, with tools and processes maintained and operationally controlled by the local population. Technology is considered thus “appropriate” to the extent that it is consistent with the cultural, social, economic, and political institutions of the society in which it is used. Abubakar N. Abdullalli has suggested that appropriate technology should be self-sustaining, cause little cultural

*disruption, and should ensure the relevance of technology to the welfare of the local population.*²⁴

This definition relies upon the work of several scholars involved in international-level planning and it is not really clear how it reflects the actual aspirations of communities it might be applied to, but it serves an important function for this paper. It includes a reference to Abubaker N. Abdullalli,²⁵ whose background is in economic development in Africa. For the Native peoples of the US, it is instructive to apply the definition to AI and its anticipated uses by tribes here. Many might say that AI seems “appropriate,” as it often appears to cause little disruption to the traditions and other aspects of tribal identity as it comes to Indian country. The critique of this author, though, points out the potential dangers of surveillance capitalism and data security problems that AI poses, which must be factored into any conception of appropriateness. It seems that if those dangers can be ameliorated, AI would be acceptable to tribes. Of course, that is what this paper suggests. If AI and emerging GAI can be rescued from those major drawbacks and placed under the direct control of the communities who will nativize it, it is likely to be a boon to future development and continuation of tribal traditional thought. So the question becomes, how can the problems of surveillance capitalism and data security be solved. In an earlier papers by this author, government regulation seems to stand out as the best response. But that solution also seems to be blocked by political stalemates over the very idea of government regulation, leaving the industry to regulate itself in the interest of its users, not a viable solution when huge corporate profits hang in the balance.

The idea of appropriate technology also has a few other, common-sense implications.

An often-mentioned test of appropriateness is whether the innovation in question really is a significant enough tool for actually improving human fulfillment over the long-term.²⁶ This question is value-laden, too, of course, and subject to one’s or a group’s impressions in the moment. Whether AI actually improves the quality of life in ways that balance our relationships with the natural world and with each other is a difficult question, too. Those basic questions of the costs and benefits of adopting new technologies come down to individual and community judgments, which seem to be rarely consciously made. Instead, people use technologies for the short-term benefits that come to them in the moment, as Deloria’s video quote “Technology’s Toll” emphasizes earlier in this paper. Since AI is made available so broadly, there seems to be little community control over whether or how it will be adapted to local needs or whether tribal traditions can be reinforced in the process of individuals’ usages. It is the conundrum of our times and an important point to be raised among members as tribes build their own uses of AI on newly-available broadband. One hopes tribes will have the needed time to consider a few of these problems as AI comes to their communities via the FCC’s Native Nations Communications

²⁴ “Overview: What is as Appropriate Technology?” *ScienceDirect*. <https://www.sciencedirect.com/topics/social-sciences/appropriate-technology>. Accessed 5 Apr. 2023.

²⁵ See his profile at “Abubakar N. Abdullalli” *LinkedIn*, <https://ng.linkedin.com/in/abubakarabdullahi>. Accessed 5 Apr. 2023.

²⁶ For a very quick look at one evaluation of quality-of-life issues, see Seth Bontrager, “Does Technology Actually Improve Quality of Life?” *ST112 A2018, A Colby Community Web Site*. 7 Feb 2018. Accessed 5 Apr. 2023. One can post one’s own comments to the opinion-driven site. The site is included here to emphasize that the subjective evaluation of technological benefits is open to everyone.

Task Force route. Anticipating and coping with the changes it will bring to Indian country will be the challenge.

As broadband AI becomes more and more available, even in rural tribal communities, tribal people will continue to make some form of adaptation when circumstances demand it. Again, individual indigenous people often make their own adaptations as they compartmentalize their daily activities between what is traditional and what is demanded of the mass society. Tribal groups, though, share an identity based upon generations of experiences that will require a degree of indigenized or nativized conceptual adaptation that tribal members collectively can fit into their existing tribal patterns. Cameras, smart phones and the perceived atmosphere they create may need to be dealt with in ceremonies. Many tribes have banned long banned cameras, recording devices or other technologies from specific ceremonies to assure that sacred moments are not disrupted or appropriated. That kind of adaptation could be considered to come under the enclavement concern listed in the coping model, giving students and others the chance to think of their own tribal traditions as they work to fit new technologies, like AI into their communities.

For this short paper, it is useful to consider the new “environment” created by one aspect of AI: social media. Facebook, Tic Tok and smartphones, especially take the user into an entirely different mental and psychological reality, leaving the interpersonal, face-to-face oral moment almost entirely and creating another kind of place for users. The zombie-like behaviors of smartphone users are obvious, as users exit their social communications for the internet ether. While there, users project a persona partially of their own choosing and partially a result of characteristics they have revealed in earlier postings where other users might discover them. Thus, they create a strange new kind of being, an avatar, not available to users before the advent of the technology. One can even purchase applications that can help edit the very persona a user projects in an attempt to rescue one’s online reputation, editing derogatory information that will otherwise remain on the internet in some form for years.²⁷ For a person who was born before social media and smartphones, such change has been startling, even a bit disorienting. For a tribal person deeply involved in one’s traditions, though, there are ways to adapt and still meet one’s obligations and opportunities within traditional lifestyles, provided the group accepts those kinds of personal adaptations.

The author of this paper leaves the reader to imagine how one’s own tribal group can adapt to the many aspects of the emerging General Artificial Intelligence. How might a tribe adapt to virtual reality games that seem to glorify the destruction of nature without any reciprocal actions like ceremonies portrayed? How can tribal users express cultural values online without ridicule or harassment from unseen hackers and trolls? Should sacred information be protected from appropriation by banning any reference to it online? Interestingly, the White House Initiative on Traditional Knowledge has already anticipated many of these questions during its consultation process before its announcement. According to co-author Dr. Karletta Chief, a

²⁷One service that helps individuals rescue their own reputation is Defamation Defenders, <https://defamationdefenders.com/content-removal/>, accessed 31 March 2023. There are many others, revealing the degree to which careless users and others must attend to their online “personas.”

University of Arizona climate researcher and member of the Diné (Navajo Nation) whose many research projects often involve tribes,

“When we’re talking about traditional knowledges, they are knowledge that belong to a community, and the community is the one that decides whether or not it should be included in the climate research, whether it should be published, and who should have access to that information. The community may be willing to share that information for a certain reason for a specific purpose, but they may not be wanting that information to be publicly available to the whole world.”²⁸

One might wonder how that information, once placed online, can be kept from public scrutiny. Perhaps some password or firewall processes could be created, but such an adaptation will take some careful planning to avoid unintended consequences. Of course, tribal knowledge holders can withhold information from computer systems, assuring they remain in the environment of oral traditions.

Indigenizing/Nativizing Artificial Intelligence and General Artificial Intelligence

Native American and Indigenous Studies concepts like the “Ideal Tribe” and the “Coping in Indian Country,” models outlined above can be useful in evaluating how tribal peoples might deal with rapidly developing challenges to tribalism of AI in their home communities. Those communities, whether they are reservation homelands or urban centers, are the locus of identity for many today. Of course, the processes of indigenization of computer programs have been underway in tribal communities for some time, but the urgent need is upon us to clarify what limitations are needed as tribes themselves take over portions of the internet services their members use. Since AI mimics and even exceeds human mental processes, especially as GAI emerges, the very internal thinking and modes of thought of all people are not only being extended for beneficial purposes, but are being exploited by hyper-commercialism and even by unscrupulous hackers of all stripes. Whether we are aware of it or not, AI’s current development is at a critical juncture in the survival of tribal peoples everywhere. As so many have observed, tribal culture, language and identity is always only one generation from extinction. To assure that future generations can knowledgeably exercise their sovereignty as peoples, today’s generations must begin to anticipate the likely consequences of their adaptations of AI for tribal uses. To ignore this dictum would be to violate our generation’s responsibilities, many indigenous traditions teach. The long-cited need to think about how our actions might impact our peoples seven generations into the future should be considered now. As indigenous scholars, we can

²⁸ “White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies,” Pubic Notice, The White House, December 1, 2022. <https://www.whitehouse.gov/ceq/news-updates/2022/12/01/white-house-releases-first-of-a-kind-indigenous-knowledge-guidance-for-federal-agencies/>. Accessed 14 March 2023.

²⁸ Melanie Lenart, “Indigenous Knowledge Goes to Washington: The Biden Administration is pledging to incorporate traditional knowledge into federal policy-making. Tribal leaders support the move, but say guidelines must be carefully written to protect ‘sacred and sensitive’ information.” *Native Science Report*. A publication of Sisseton Wahpeton College, funded by Nat’l. Sci. Foundation, grant no. 1838993, February 8, 2022. <https://nativesciencereport.org/2022/02/indigenous-knowledge-goes-to-washington/>, accessed 14 March 2023.

assist our leaders as they struggle to make AI a servant of tribal community development, not a master of our peoples. An online video featuring Navajo scholar Darrah Blackwater, who is involved with the fight for spectrum sovereignty, is very helpful in understanding the challenges of bridging the digital divide in Indian country and indigenizing the internet.²⁹ With leadership from scholars like her, communities can get deeply into the issues surrounding the indigenization of the internet. Readers should watch this video, cited in the footnote below, as a way to clarify the processes now underway. Blackwater is among the indigenous scholars and many others that have taken some vital steps to meet this generation's responsibilities.

A Few Examples of Indigenizing portions of the Internet

Meanwhile, a few examples of the on-going efforts of tribal people to indigenize portions of existing internet services in Indian country are instructive. First, this author was struck by the value of internet products produced by members of the Oneida Nation in Wisconsin, of which this author is a member. With very limited resources, individual members have made use of the internet to express traditional values, political analysis of current conditions the People face and educational materials that have value for both the Oneida people and their nearby neighbors as well as the broad, global network of the internet.

One teaching and philosophical video,³⁰ produced by Artley Skenandore, PhD., principal and athletic director for the Oneida Tribal School (Onuyote? aka Tsi Tuwatilahunyunit'hu), outlines an epistemology so crucial to the teaching and learning of generations of Oneidas and, by extension to all peoples about elements of the natural universe to which we are related. Specific values, including the Kanahelatunksla, the traditional opening acknowledgement of gratitude for beneficial relations with the elements of life-giving forces of nature and the relations among the People are featured. Then, some formal diagrams are presented in a digitized slide show narrated by Skenandore in both the Oneida language and English with the intention of sharing traditional values so vital to Oneida survival. Skenandore's emphasis on sharing traditional concepts broadly through an "indigenous lens" on internet media is instructive for those of us who live far from our homelands yet remain nearby in our sense of solidarity thanks to his gift of knowledge. It is a powerful adaptation of internet media, making inexpensive, yet potentially far-reaching technology into a conduit for tribal traditions. Readers can find the URL for the video in footnotes for this paper.

A second online video reveals the battles over Oneida tribal sovereignty and federal recognition of the tribe, continuously waged against the tribe by the Village of Hobart as it challenges the

²⁹Darah Blackwater, "Indigenize the Internet: How to close the Digital Divide by Respecting Tribal Sovereignty" Univ. of Ariz.. Native Nations Institute, Indigenous Governance Database, 2020. Online video, <https://www.nnigovernance.arizona.edu/indigenize-internet-how-close-digital-divide-respecting-tribal-sovereignty-darrah-blackwater>, accessed 5 Apr. 2023.

³⁰Artley Skenandore, "Learning Journey Diagrams in Supporting Transformation," <https://youtu.be/jE0LkzI1u4Y>. Accessed 3 April, 2023.

very right for the Oneida reservation to exist under federal law. The video³¹ was produced by a local FM radio station and features Rebecca Webster, an assistant professor in the American Indian studies department at the University of Minnesota, Duluth, and a former senior staff attorney for the Oneida Nation. She explains the tribe's legal defense and the history of the case for both tribal members and the general public in order to clarify and advocate for the tribe's status as a federally-recognized tribe. The tribe's status was confirmed by the Seventh Circuit Court of Appeals in 2020, after a high-profile legal battle begun in 2016 and much earlier in other challenges brought by Hobart in different cases. The public bruhaha created by the cases demanded a statement for the record on local radio in addition to Webster's timely book³² on the subject in order to maintain local and other relationships and to clarify details for tribal members. Publishing the online video accompanying the radio broadcast and the book reveals a multi-media campaign to assure that the tribe's sovereign rights to exist under law is understood and respected, despite aggressive attempts by outsiders to use federal and other courts to destroy the nation. The legal standing of many tribes would have been in question had the Village of Hobart won the case. Internet technology, then, can be made use of to extend the range of other media in furthering mutual respect and understanding between tribes and the mass society. Please check the URL for this internet product in the footnotes below.

Many indigenous peoples have found ways to enlist the internet in support of their interests. To illustrate the international level of internet sovereignty for indigenous people, a third example, this one from Australia, is included here. Indigenous Technology is a website based in Australia that serves internet needs of aboriginal peoples there. The site is sponsored by familiar commercial internet corporations and other major global corporate businesses, as well as more local businesses, the University of Sidney, and the Australian government. According to the site,

*Indigenous Technology is an inclusive innovator. A 100% Indigenous-owned and operated IT company led by Australian Indigenous Muriwari woman, Cheryl Bailey from Muriwari Country, Weilmoringle. We provide tailored solutions to our clients in corporate and government sectors, as well as Indigenous and mainstream businesses. Our highly experienced team are the ideal Indigenous supply partner for your business and have a wealth of technical and delivery skill combined with a deep cultural and practical understanding of the unique challenges faced by Aboriginal and Torres Strait Islander businesses, and those businesses looking for an Indigenous service delivery partner.*³³

The site is very new with a number of services provided to businesses and to indigenous people designed to improve computer literacy among the indigenous peoples of Australia in addition to offering business opportunities for indigenous businesses and those hoping to do business with indigenous communities. The emphasis here is that commercial interests can form ethical, non-

³¹Lina Tran, "An insider's view of the legal battle between Oneida Nation and village of Hobart," WUWM, 98.7 FM NPR Radio, Milwaukee, WI, 1 March, 2022.

³²Rebecca M. Webster, *In Defense of Sovereignty: Protecting the Oneida Nation's Inherent Right to Self-Determination*, with James R. Bittorf, William Gollnick, Fredrick E. Hoxie, Arlinda Locklear and James W. Oberly. Milwaukee: UW Press, 2022.

³³ Indigenous Technology, <https://www.indigenoustechnology.com.au/>, accessed 3 April 2023.

exploitive relationships with indigenous peoples without the ravages of surveillance capitalism. One can hope that relationships among the indigenous peoples of Australia and well as those with the general public will build upon that goal of mutual respect. Again, the URL for the site is in the footnotes below.

One other example of innovative adaptations of internet uses for indigenous people is an application for aboriginal youth. #thismymob in an app designed by indigenous computer engineers in Australia. It connects aboriginal youth to their traditional relatives. Its associated website describes the hash tag app this way:

“Creator and Noongar engineer Professor Chris Lawrence told NITV News the app has two integral elements. The first element focuses on social connection, providing a safe place for Aboriginal and Torres Strait Islanders people online. “This is where people can keep in touch with their extended family and extended mob. They can share information, meet new people and notify others of events going on in their community,” he explained. Prof Lawrence also says he hopes the app also becomes a meeting place to discuss land rights, enabling Indigenous people to “use a modern platform to talk about an age-old issue. Having a sense of digital land rights is so important for our mob. This app will keep people in the know and able to safely and privately talk about the issue,” he said. In addition, the app includes an ‘Elders feature’, for users to contact Elders for advice or support. “A person may not have their Elders anymore, so we’re creating a substitute mob for people who can be Elders for others around the mob,” Prof Lawrence said. Prof Lawrence also explained the app could potentially open up economic opportunities, as people could use it as a platform to promote their communities for tourism, their music for gigs, or their artwork for sale. The second part of the app is a digital portal that connects Indigenous users with government, industry and organisational information. Prof Lawrence hopes this feature helps Indigenous users overcome some of the barriers impeding access to important services.”³⁴

It is an example of indigenous design, an approach to indigenous connections to the internet that could well be a model for the communities in the US as well. Its success reveals how indigenous innovations can strengthen connections to traditional knowledge across generations. Readers are encouraged to use the URL in the footnote to access this site as well.

³⁴ Amelia Dunn, “#Thismymob: The First Ever App Connecting Indigenous People Digitally.” 19 July 2018. <https://www.sbs.com.au/nitv/article/thismymob-the-first-ever-app-connecting-indigenous-people-digitally/g4ldmaepw>, accessed 5 Apr. 2023.

Indigenous Traditional Thought – and states of mind – in Today’s World

As indigenous innovators create excellent new online products it seems that online technology is readily adaptable to appropriate uses in tribal communities. Still, it is also important to continue the discussion of the potential impacts of AI into the future. As with so many areas of indigenous thought, Vine Deloria, Jr. helps us frame the discussion on traditional thought and AI technology. In his book chapter “Traditional Technology,”³⁵ Deloria provides an analysis that emphasizes an entirely different understanding of technology than Western thought comprehends.

*...the knowledge that the old ones attached to their technology demanded that they use their powers sparingly and on the proper occasion. A person could not indiscriminately use powers as we casually use our instruments today. This lesson is important, because today we tend to believe that we can apply technology on a rather indiscriminate basis and we are learning that often we do not really understand the side effects that such use creates.*³⁶

He includes traditional knowledge of planting, herding rather than pursuing game, concepts of relatedness, and even religious ceremonies as kinds of technology in his discussion. Of course, many would include traditional transportation, housing, forest management, medicines, ecological knowledge and many others. Other authors extend the long list of traditional technologies. Jack Weatherford’s 2010 book *Indian Givers: How Native Americans Transformed the World*,³⁷ for instance, documents many amazing tribal technologies of the precontact Americas. To Deloria, the extensions and innovations humans make in the technologies they employ are part of a spiritual set of relationships and covenants made with natural forces, used with great respect and in a limited way so as not to upset balances made at Creation. One can imagine what Deloria, who passed away in 2005, would say about AI and GAI, which spring from a western view of intelligence without regard to balances among humans and with natural beings and forces. Today’s indigenous peoples might carefully assess the threats that arise in any psychological dependence that might arise in continuous use of AI to the detriment of time-trusted traditional modes of communications and expression of oral traditions. Of course, people may well find ways to adapt their own traditions, or vice versa, to AI as our examples above demonstrate. That process is well underway today, but GAI may extend what are isolated dangers in the AI environment now into unknown impacts on traditional thought. In considering those issues, it is comforting to read the works of accomplished, mature young scholars who are deeply involved in decolonizing and therefore indigenizing aspects of AI. In her 2017 book, Yaqui scholar Marisa Elena Duarte quotes Deloria about the circular mentality of mass society in

³⁵Vine Deloria, Jr., “Traditional Technology,” in *Spirit and Reason; The Vine Deloria, Jr. Reader*. Ed. by Barbara Deloria, Kristen Foehner, and Sam Scinta. Golden, CO: Fulcrum Publ., 1999, p. 129-133.

³⁶ Deloria, p. 133.

³⁷ by Jack Weatherford. *Indian Givers: How Native Americans Transformed the World*. NY: Broadway Books, 2010.

creating industrial technology to deal with imbalances created by its earlier technology. She then writes

...rather than presuming that mechanization and digitalization will automatically improve Native ways of being, our goal as Native scientists and Indigenous thinkers is to push back this false logic and understand the nature, goal, and direction of the solution that we are striving for when we do choose to apply digital technologies toward overcoming a particular obstacle in a tribal community. In a sense, careful investigation of the impacts of digital systems is about articulating the boundaries around these systems: their limitations, affordances, requirements, discrete effects, social contexts, and outcomes of their uses.³⁸

Duarte then mentions a number of ways that indigenous values and the specifics of tribal communities are now being discussed in conferences like the Tribal Telecom and Technology Summit, saying meetings should include consideration of social values in internet services as a part of the extension of broadband into Indian country. She notes that “Many systems-scientists in academia come from system-centered background, rather than a human-centered design and engineering background, and as a result, often have little to no familiarity with social theory or the complexity of the so-called human factors shaping the design, uptake and use of digital systems.” She seems to hope that these problems will be overcome as indigenous scholars, take on the “intellectual labor” needed to indigenize the internet in general for tribal purposes. Duarte’s closing comments of the book are measured optimism that tribal communities can find ways to reinforce their values into the lives of future generations and that Native scholars can help with the intellectual and technical challenges that will confront them. Duarte notes that she and probably many others, are determined to maintain an indigenous perspective on rapid technological change, relying upon traditional thought patterns based upon mindsets that are still deeply rooted in tribal traditions.

There are many examples of effective uses tribal people have made of internet services. During the research for this brief paper and the two that preceded it (cited early in this paper), this author found many amazing and profound expressions of tribal identity and many successful start-ups created by imaginative Native people. In that respect, the extension of new broadband into Indian country via the FCC’s Native Nations Communications Tasks force is a likely success. Missing from scholarly analysis is the crucial issue raised in this paper, though. Data sovereignty in the realms of surveillance of users and security of data, seem to get less scrutiny. Can scholars provide the “intellectual labor” that Duarte advocates? Can indigenous scholars and knowledge holders still rely upon their traditions to sustain both a critique of Western knowledge systems and their own understandings as such a discussion evolves? Can mutual respect be its basis? One would think that surveillance capitalism with its focus on deception and manipulation is the wrong business model for that!

³⁸ Marisa Elena Duarte, *Network Sovereignty: Building the Internet Across Indian Country*. Seattle: Univ. of WA Press, 2017, p. 123.

A list of and/or solutions: Many such risks could be avoided by creating federal and tribal law and regulations. A new commitment among CEO's and stockholders to corporate responsibility in its reliance upon surveillance capitalism might arise, despite the profit motives of stockholders. Perhaps "users" could simply drop out of the scheme that keeps these scams going by finding other services that either charge affordable fees or rely upon untargeted advertising. There are a number of centers for making inroads into surveillance capitalism: market solutions, democratic legal solutions (regulation), user solutions, tribal solutions - firewalls for traditional knowledge; informed, careful use of invasive programs, reliance upon the federal trust responsibility to provide safe connections to AI. Perhaps the creation of tribal or intertribal organizations that focus upon these kinds of intellectual and technical critiques could provide alternative models for development across tribal communities.

Tribal tradition might even be a basis for innovation in what cyber-developers hope to find in supercomputing or blockchain computing or the "next big thing," one that sheds the negative aspects of capitalism and relies upon psychic as well as rational, "scientific" processes to imagine new technologies entirely. To that end, a speculative examination that Deloria offered in his analysis of Jung's ideas of traditional knowledge, paralleled with studies of cyber-development in this case, might yet yield a way out of our present computer-assisted plunge into dangerous waters. It's just an idea, but traditional thought process like those Deloria discusses in his analysis of Jungian psychology and the psyche may reveal some new insights on human intelligence. At least that is one goal of unifying knowledge across the disciplines by combining dynamics of mind/matter/spirit/instinct in innovative, as yet unimagined processes.³⁹ Speculative inquiry seems to be a crucial approach to such development.

But let us at least imagine internet services without surveillance capitalism, spam, spyware and malware. As we move ever deeper into the world of supercomputing and meta-experience, we shall need to learn and express and teach our traditions as best we can. Will our efforts in this generation be good enough to maintain the peoplehood of indigenous nations in the world of artificial intelligence? We shall see...

Words of Conclusion: The Future of Artificial Intelligence in Indian Country?

Dealing with the "business model" of the Big Tech, that of "scraping" of user behavioral data, analyzing it with algorithms that are aimed at behavior modification, and selling that information to advertisers and political agents, remains an unfronted problem as broadband reaches into Indian country. It remains the "dirty little secret" of internet technology – and demands resolution among scholars and tribal people. Can tribes use such forums as the Native Nations Communications Task Force of the FCC to demand that internet services that come to them are free of that business model? Can US regulation of the entire Big Tech model remove the abusive surveillance so deeply entrenched in the internet? Can fraud and corruption and misinformation

³⁹ When imagining new approaches to cyber-development, one is admittedly incapable of charting likely avenues of research, but in reading Deloria's writings about Jungian concepts of the psyche, one is struck by the possibilities. Please see Vine Deloria, Jr., *C. G. Jung and the Sioux Traditions: Dreams, Visions, Nature, and the Primitive*. Philip J. Deloria and Jerome S. Bernstein, eds. Wheat Ridge: CO, 2022, esp. p. 80-81.

rampant on social media be dealt with? Will tribal traditional knowledge be protected in the day-to-day uses of the internet by tribal people and outsiders? These are the questions that seem to be slipping through the cracks in the development of internet systems in Indian country. As artificial intelligence morphs into general or generative artificial intelligence, these questions must be considered. The future seems very bright as the internet is indigenized for tribal purposes, including the conveying of traditional knowledge, but so long as the dangers of surveillance capitalism continue and expand with new innovations, a serious situation will only get worse. The Black Box of internet development is opening now – enough that we can see that profit motive, the colonial nature, of the current Big Tech version of AI. We can do better, and it is clear that we, as peoples, must now rely upon our experiences with emerging technology to take on the challenges of artificial intelligence.