

The Psychedelic Surge and its Threats to Native American Communities

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*The psychedelic substances market is preparing to outpace the legal cannabis market in the United States by 2027. The country's federal policies are not prepared to protect Native Americans in the potential acquisition of their traditional resources such as peyote (*Lophophora williamsii*), a small and spineless cactus that contains psychoactive alkaloids. Through case studies of biopiracy instances in the United States and around the world, this paper demonstrates the vulnerability of Indigenous Knowledge and resources and advocates for its protection as the popularity of psychedelics surges. These cases prove how easily and recklessly Indigenous Knowledge and resources are exploited, barring Indigenous people from accessing them due to new patent rights, laws, or scarcity. President Biden pledged to incorporate Indigenous Knowledge in federal research and policymaking in 2022, but due to the lack of a Tribal consultation model and international agreements signed to protect Native Americans, the administration risks enabling further exploitation of these invaluable resources in the United States.*

I. Introduction

America is surging into psychedelic research. An unprecedented amount of funding is being allocated to psychedelic research to bring promising discoveries to the field of mental health.⁶²⁰ However, to many Native Americans, the

⁶¹⁹ Brandeis University Undergraduate, Class of 2024.

⁶²⁰ "Johns Hopkins Center for Psychedelic and Consciousness Research," Johns Hopkins Medicine, accessed November 9, 2023,



powerful healing properties of the psychoactive plant peyote have been known and used in religious ceremonies for thousands of years.⁶²¹ As more research is done, policymakers and more than half of American voters begin to wake up to the wealth of benefits that many currently illegal substances may bring to American society.⁶²² Although exciting to many, this phenomenon causes concern for many traditional peyote users. Many believe peyote should remain a closed practice, and staunchly oppose genetic manipulation of the plant and commercialization of what many Native Americans consider an “ancestor and a living relative.”⁶²³ Even more pressing is the threat of biopiracy, the act of taking knowledge and genetic resources from Indigenous communities without consent or compensation.⁶²⁴ Companies and individuals have historically used United States patent law to gain the sole right to produce and distribute medical plants that have long been part of the Traditional Knowledge of Indigenous people. The legalization of psychedelics has the potential to improve countless American lives; however, numerous protections need to be established to protect Native American sovereignty over their traditional resource. The United States has signed the United Nations Declaration on the Rights of Indigenous Peoples

<https://www.hopkinsmedicine.org/psychiatry/research/psychedelics-research>

⁶²¹ James D. Muneta, “Peyote Crisis Confronting Modern Indigenous Peoples: The Declining Peyote Population and a Demand for Conservation,” *American Indian Law Journal* 9, no. 1 (December 23, 2020), 139.

⁶²² Catherine Ho, “Majority of U.S. Voters Support Therapeutic Use of Psychedelic Drugs,” *San Francisco Chronicle*, July 13, 2023, <https://www.sfchronicle.com/bayarea/article/majority-u-s-voters-support-the-therapeutic-use-18197873.php>.

⁶²³ Louis Sahagun, “Legalization Efforts Spur ‘Peyote Crisis’; As Cities Move to Allow Psychedelic Plants, Some Native Americans Cry Foul,” *Los Angeles Times*, May 17, 2020.

⁶²⁴ John Reid, “Biopiracy: The Struggle for Traditional Knowledge Rights,” *American Indian Law Review* 34 (2009).



(UNDRIP), but has yet to meaningfully ratify it. In doing so, the United States would be obligated to prioritize Native American voices by improving its Tribal consultation model by establishing free, prior, and informed consent (FPIC) standards. In addition to UNDRIP, the United States must sign and uphold international agreements such as the Nagoya Protocol to protect the rights of Native Americans.

Led by emerging medical studies funded by the United States National Institutes of Health⁶²⁵ and the United States Department of Veterans Affairs, a 21st century term, “psychedelic renaissance,” has been coined to describe this new period of acceptance of psychedelics.⁶²⁶ Psychedelics are psychoactive substances that are either lab-made or naturally occurring in plants. Peyote, methylenedioxy-methamphetamine (MDMA), ayahuasca, psilocybin, and lysergic acid diethylamide (LSD) are common psychedelic drugs.⁶²⁷ Consumption of these drugs generally does not lead to dependence or addiction.⁶²⁸ From 2007 to 2020, 105 registered clinical trials took place around the world examining the use of psychedelic drugs.⁶²⁹ Notably, Johns Hopkins Medicine

⁶²⁵ Brian S. Barnett, Sloane E. Parker, and Jeremy Weleff, “United States National Institutes of Health Grant Funding for Psychedelic-Assisted Therapy Clinical Trials from 2006–2020,” *International Journal of Drug Policy* 99 (January 2022): 103473, <https://pubmed.ncbi.nlm.nih.gov/34624734/>.

⁶²⁶ “Correa, Bergman Applaud House-Passage of Their Amendment Pushing VA to Study Impact of Psychedelics on Veterans: United States Congressman Lou Correa of California,” Congressman Correa, July 27, 2023, <https://correa.house.gov/news/press-releases/correa-bergman-applaud-house-passage-of-their-amendment-pushing-va-to-study-impact-of-psychedelics-on-veterans>.

⁶²⁷ David E. Nichols, “Psychedelics,” *Pharmacological Reviews* 68, no. 2 (February 3, 2016): 264–355, <https://doi.org/10.1124/pr.115.011478>.

⁶²⁸ Nichols, “Psychedelics,” 264–355.

⁶²⁹ Joshua S Kurtz et al., “The Use of Psychedelics in the Treatment of Medical Conditions: An Analysis of Currently Registered Psychedelics



received a federal grant of nearly \$4 million to research the impacts of psilocybin⁶³⁰ on tobacco addiction in 2021.⁶³¹ A breakthrough study by Johns Hopkins (2022) found that psilocybin relieved symptoms of major depressive disorder for up to a month in adults, and a follow-up study proved that benefits lasted up to a year for some participants.⁶³²

In 2010, the *Journal of Psychopharmacology* found that 83 percent of formerly treatment-resistant patients who underwent two MDMA treatments were cured of PTSD.⁶³³ A long-term follow-up study found the positive results to be stable for 3.5 years.⁶³⁴ In response to the promising results of these studies, the United States Congress unanimously passed an amendment to the Military Construction, Veterans Affairs, and Related Agencies Appropriations Bill in 2023 to encourage the United States Department of Veterans Affairs to utilize federal funding for research of psychedelic therapies to help treat veterans suffering from PTSD.⁶³⁵ A growing proportion of Americans report using psychedelic drugs, and 53 percent of users say they used it therapeutically.⁶³⁶ Fifty-six percent of United States voters also express support for federal regulators to approve the use of psychedelics for prescription use,

Studies in the American Drug Trial Registry,” *Cureus*, September 14, 2022, <https://doi.org/10.7759/cureus.29167>.

⁶³⁰ Psilocybin is a psychedelic chemical compound naturally occurring in some species of fungi.

⁶³¹ Johns Hopkins Medicine “Psychedelic Research.”

⁶³² Natalie Gukasyan et al., “Efficacy and Safety of Psilocybin-Assisted Treatment for Major Depressive Disorder: Prospective 12-Month Follow-Up,” *Journal of Psychopharmacology* 36, no. 2 (2022): 151–58, <https://doi.org/10.1177/02698811211073759>.

⁶³³ MDMA is also known as Ecstasy, a synthetic stimulant and psychedelic drug; Erwin Krediet et al., “Reviewing the Potential of Psychedelics for the Treatment of PTSD,” *International Journal of Neuropsychopharmacology* 23, no. 6 (2020): 385–400, <https://doi.org/10.1093/ijnp/pyaa018>.

⁶³⁴ Krediet et al., “Psychedelics Treatment of PTSD,” 385–400.

⁶³⁵ Congressman Correa “Applaud House-Passing Amendment.”

⁶³⁶ Ho, “Voters Support Therapeutic Use.”



according to a survey by the UC Berkeley Center for the Science of Psychedelics.⁶³⁷ As more studies provide fruitful findings, the psychedelic substances market is projected to rapidly expand, from \$2 billion in 2020 and expected to reach \$10.75 billion by 2027.⁶³⁸ These studies display the increased readiness of the American medical community, government, and general public to accept the legality of psychedelics.

II. Peyote in Native American Communities

Although the medical community in the United States may only begin to accept the benefits of psychedelic remedies, they have long been understood by Native Americans. Herbal medicines and psychedelics such as peyote have been used for thousands of years by Native Americans as part of their medicinal and spiritual practices and rituals; carbon dating proves that peyote was used 6,000 years ago at an archaeological site in Texas.⁶³⁹ However, many Tribes further claim that peyote has been used by them since time immemorial.⁶⁴⁰ Peyote is often ingested during a night-long ceremony shared by a community involving singing, praying, drumming, and communication with a creator or some other metaphysical entity.⁶⁴¹ Members sit in a tipi or other ceremonial structure facing a crescent-shaped altar with a fire. There are four elements to the ceremonies, including praying, singing,

⁶³⁷ Ho, “Voters Support Therapeutic Use.”

⁶³⁸ Phelps, “Investment in Psychedelics.”

⁶³⁹ Muneta, “Peyote Crisis,” 139.

⁶⁴⁰ Fannie Kahan, “The Struggle for Peyote,” in *A Culture’s Catalyst* (University of Manitoba Press, 2016), <https://doi.org/10.1515/9780887555084-007>.

⁶⁴¹ Peter N. Jones, “The Native American Church, Peyote, and Health: Expanding Consciousness for Healing Purposes,” *Contemporary Justice Review* 10, no. 4 (2007): 411–25, <https://doi.org/10.1080/10282580701677477>, 415.



ingestion of peyote, and quiet contemplation.⁶⁴² Ceremonies are usually called by a Tribe to pray for the healing of a sick person or to give thanks for being cured.⁶⁴³ Additionally, ceremonies take place to heal other problems or to pray for a loved one who is away at school or in the military.⁶⁴⁴ According to personal anecdotes, the revelations experienced through these ceremonies can lead to forgiveness, the alleviation of physical and emotional illness, and bonding with others in the community.⁶⁴⁵

As peyote offers both religious, emotional, and physical healing, it has helped countless Native Americans recover from life challenges such as substance abuse, mental illness, homelessness, poverty, and food insecurity.⁶⁴⁶ The tradition of the peyote ceremony strengthens communities through a shared intergenerational ritual, not only by connecting individual community members but also by linking generations through a common experience. Losing this ritual endangers the wellness of individuals, the strength and continuity of their communities, and their religious freedom. However, with the arrival of settlers from the West, this tradition became vulnerable.

European conquerors and their descendants have long been critical of peyote and its religious uses by Indigenous people. When the Spanish Conquistadors arrived on the land in 1492, they tried to eradicate the plant entirely.⁶⁴⁷ As the Natives reported visiting God when using peyote, the Spanish identified it as a threat to the priesthood of their Catholic

⁶⁴² Jones, “Native American Church,” 415.

⁶⁴³ Jones, “Native American Church,” 415.

⁶⁴⁴ Jones, “Native American Church,” 415.

⁶⁴⁵ Jones, “Native American Church,” 415.

⁶⁴⁶ Muneta, “Peyote Crisis,” 172–173.

⁶⁴⁷ Michael Pollan, “Chapter 4: Mescaline,” *How to Change Your Mind*, directed by Alison Ellwood and Lucy Walker, 2022, Netflix.



faith.⁶⁴⁸ In 1620, the Roman Catholic Church deemed peyote “an evil to be rooted out in the New World.”⁶⁴⁹ During the Mexican Inquisition, the plant was labeled the “diabolical root” and was a “heretical perversity opposed to the purity and integrity of our Holy Catholic faith.”⁶⁵⁰ From the start of Western colonization of the land, Indigenous rights to peyote have been imperiled.

After thousands of years of Native American use of peyote, Congress passed the Indian Religious Crime Code of 1883, enforcing the imprisonment and withholding of government rations from anyone in possession of peyote.⁶⁵¹ The legislation stated that “dances and so-called religious ceremonies, shall be considered ‘Indian offenses’... cognizable by the court of Indian offenses.”⁶⁵² Upon losing the ability to legally practice these traditional and spiritual rituals, the alienation of Native Americans and their cultures became codified in law. This law forced these practices to move underground out of threat of persecution. It fragmented the passing down of Indigenous Knowledge from one generation to the next, severing a connection between past and present. This infringement of Indigenous rights to peyote fractured identity, sovereignty, community connection, spirituality, healing, and freedom.⁶⁵³

As of the 1994 Amendment of the American Indian Religious Freedom Act (AIRFA), Native American Church of North America (NACNA) members alone are legally allowed to use peyote for solely religious purposes.⁶⁵⁴ The potential mainstream legalization of the plant raises concerns for many

⁶⁴⁸ Pollan, “Mescaline.”

⁶⁴⁹ Muneta, “Peyote Crisis,” 139.

⁶⁵⁰ Pollan, “Mescaline.”

⁶⁵¹ Muneta, “Peyote Crisis,” 140.

⁶⁵² Muneta, “Peyote Crisis,” 140.

⁶⁵³ Muneta, “Peyote Crisis,” 140.

⁶⁵⁴ Muneta, “Peyote Crisis,” 139.



Indigenous people, especially in the wave of decriminalization of other psychedelics such as psilocybin. Colorado became the first state to legalize psilocybin for therapeutic uses in 2019, and Oregon followed in 2020.⁶⁵⁵ Based on data from the trajectory of cannabis legalization, it is projected that most states will have passed legislation legalizing psychedelics by 2033–2037.⁶⁵⁶

Nonprofit organizations such as Decriminalize Nature have emerged in recent years, aiming to grant the healing properties of natural hallucinogens including peyote accessible to all.⁶⁵⁷ Some Native Americans, including Navajo spiritual leader Steven Benally, beg outsiders to “leave peyote alone” and ask, “is that too much to ask?”⁶⁵⁸ Benally claims that “the spiritual healing power peyote offers is only attainable through Native American protocol,” and that the illegality of the plant for non-Natives “is one of the few federal laws on our side... We want to hold on to it.”⁶⁵⁹ Benally is one voice of many who believe that peyote should remain inaccessible to the general public. From his perspective, peyote usage is a closed practice and should only be ingested ceremonially with the proper protocol traditionally performed by Tribes. The concept of a closed practice asks only members of a certain culture to perform traditional practices as a way of preserving the culture and practices and often the sanctity centered around them. Closed practices for some cultures are a way of self-protection against colonial infiltration, especially if the group suffers from a history of settler colonialism.

⁶⁵⁵ Joshua S. Siegel et al., “Psychedelic Drug Legislative Reform and Legalization in the US,” *JAMA Psychiatry* 80, no. 1 (January 1, 2023): 77, <https://doi.org/10.1001/jamapsychiatry.2022.4101>.

⁶⁵⁶ Siegel et al., “Psychedelic Drug Legislative Reform,” 80.

⁶⁵⁷ Sahagun, “Legalization Efforts.”

⁶⁵⁸ Sahagun, “Legalization Efforts.”

⁶⁵⁹ Sahagun, “Legalization Efforts.”



In a commercialist society, many traditional peyote users fear what could happen if the sacred plant becomes accessible to the general public. Dawn Davis, a member of the Shoshone-Bannock Tribes, worries about any “cultivation of peyote outside of the ancient terrain it shares with Indigenous people” and that “it is a step toward hybridization and commercialization.”⁶⁶⁰ She is concerned that this reborn national interest in psychedelic experiences reminds her of the 1960s when peyote was illegally bought and sold to non-Natives. This illegal activity decreased access to Native Americans and led many non-Natives to profit from the illegal exploitation of the sacred plant. Although to most Americans peyote is just a psychoactive plant, Davis explains that “to us, peyote is an ancestor and a living relative,” holding immense spiritual significance.⁶⁶¹ For this reason, the hybridization and commercialization of it poses serious concerns.

However, some Native Americans believe that the use of the plant should not be restricted to Native Americans alone. Indigenous leaders such as Comanche William Voelker claim that the decriminalization of peyote may be best for all.⁶⁶² Voelker is also the director of the nonprofit group Sia, which is dedicated to the preservation of eagle feathers. He argues that “it wouldn't be very humble of us to claim exclusive ownership to peyote and prevent others from using it. It wasn't just given to us.”⁶⁶³ However, in opening up the practice to outsiders, there should be intentional respect for the plant and consideration for its conservation needs. Miriam Volat, a soil scientist and co-director of the RiverStyx Foundation, which funds psychedelic research while simultaneously collaborating with Tribes to contribute to the conservation of peyote argues that “instead of saying, ‘[y]ou owe us this plant, the

⁶⁶⁰ Sahagun, “Legalization Efforts.”

⁶⁶¹ Sahagun, “Legalization Efforts.”

⁶⁶² Sahagun, “Legalization Efforts.”

⁶⁶³ Sahagun, “Legalization Efforts.”



decriminalization movement should be saying, “[w]e’d like to help you take care of your sacred medicine.”⁶⁶⁴ Researchers should work with Tribal leaders to ensure respectful use of the sacred plant.

However, Native Americans have previously witnessed an exploitative pattern of their traditional resources. Jon Brady, the former president of the Native American Church of North America (NACNA), worries that

[a] lot of people want to tap into [peyote] because they see the potential, the almighty dollar ... They’ve done that to a lot of our medicines already ... This is kind of the last of our medicines of our Native American people, so we’re trying every avenue to have its protection.⁶⁶⁵

According to Brady, with the influence of capital, peyote will inevitably become exploited if it becomes legal for all. He believes that NACNA “should not have to fight endless efforts to decriminalize Peyote,” and that “it requires that the federal government to anticipate and act to cease states’ usurpation of American Indian religious rights.”⁶⁶⁶ Brady argues that legalization and decriminalization of peyote violates the religious right of peyote as outlined in the 1994 Amendment of the American Indian Religious Freedom Act (AIRFA). He therefore instigates the federal government to initiate actions to prevent states’ legalization or decriminalization efforts.

⁶⁶⁴ Sahagun, “Legalization Efforts.”

⁶⁶⁵ Hallie Golden, “Inside the Battle to Save the Sacred Peyote Ceremony: ‘We’re in Dire Straits,’” *The Guardian*, December 9, 2022, www.theguardian.com/us-news/2022/dec/09/peyote-native-american-medicine-nacna-federal-protection.

⁶⁶⁶ Jon Brady, “Strengthening the Indigenous Communities Through Cultural and Environmental Preservation” (Testimony before the House Natural Resources Committee, United States Congress, November 8, 2021), 2.



However, as the federal government falls short on meeting many necessary protections for Native Americans, many Tribal governments are empowered to implement their own legislation for protecting their cultural property. Indigenous rights scholar Angela Riley is concerned that “in an age of globalization...property and quasi-property can spread across the world...in a matter of moments.”⁶⁶⁷ Once Indigenous cultural ideas and practices gain exposure, they are subject to appropriation and exploitation, and therefore need protection. Although Tribal law has limited jurisdiction, its development or revitalization is uniquely capable of accommodating the specific needs and circumstances of each Tribe.⁶⁶⁸ Therefore, Tribes can determine how to protect themselves within each cultural context and normative framework. As Tribal law gains prevalence, it will gain legitimacy and standing in American courts.⁶⁶⁹ Riley advocates for a tiered system approach of incorporating international, national, and Tribal law to protect cultural property.⁶⁷⁰ However, Tribal law must be the foundation.⁶⁷¹

III. The Threat of Biopiracy

Many Indigenous communities in the United States and abroad have historically been exploited by biopiracy, executed by individuals and companies. This process often involves using patent law to grant the patent holder the sole right to manufacture and distribute a plant. Consequently, Indigenous people are criminalized for using the plant in their traditional way if they lose their rights to it.

⁶⁶⁷ Angela R. Riley, “‘Straight Stealing’: Towards an Indigenous System of Cultural Property Protection,” *Washington Law Review*, 2005, 69–164, 79.

⁶⁶⁸ Riley, “Straight Stealing.”

⁶⁶⁹ Riley, “Straight Stealing.”

⁶⁷⁰ Riley, “Straight Stealing.”

⁶⁷¹ Riley, “Straight Stealing.”



This process often involves pharmaceutical companies using Indigenous Knowledge to identify medicinal plants. Indigenous Knowledge is a body of knowledge, observations, practices, philosophies, and beliefs developed by Indigenous people, passed down from generation to generation, based on lived experiences, and interactions with the environment.⁶⁷² As pharmaceutical companies seek treatments in plants such as psychedelics, the research process is lengthy and expensive. Using Indigenous Knowledge of medicinal plants instead of discovering them individually increases efficiency by over 400 percent.⁶⁷³ Therefore, the world market for medicinal plants discovered by Indigenous communities is valued at up to \$43 billion.⁶⁷⁴

The United States has a history of lenient patent laws, allowing the biopiracy of many plants and their medicinal applications. In 1995, a United States patent was granted to two researchers at the University of Mississippi Medical Center filed for the oral and topical use of turmeric powder from India as a surgical wound and ulcer healing agent.⁶⁷⁵ This was allowed despite the fact that evidence of ancient Ayurvedic texts on traditional Indian medicine, books about home remedies. Simultaneously, previous scientific publications proved that turmeric has been known and used as a wound healer long before the University of Mississippi Medical Center even existed.⁶⁷⁶ Similarly, in 1993, American company AgriDyne received a United States patent for the use of neem oil extract as an insecticide and fungicide in the United States

⁶⁷² “Indigenous Knowledge and Traditional Ecological Knowledge,” National Parks Service, accessed February 29, 2024, <https://www.nps.gov/subjects/tek/description.htm>.

⁶⁷³ Reid, “Biopiracy.”

⁶⁷⁴ Reid, “Biopiracy.”

⁶⁷⁵ K. S. Jayaraman, “US Patent Office Withdraws Patent on Indian Herb,” *Nature* 389, no. 6646 (1997), <https://doi.org/10.1038/37838>.

⁶⁷⁶ Jayaraman, “Patent on Indian Herb.”



and the European Union.⁶⁷⁷ Neem is a tree that has been used in India for over two thousand years as a medicine, cosmetic, and insect repellent. Once the patent was approved and came into effect, the European Union struck it down for lack of novelty because it had proof of traditional usage, although the patent was upheld in the United States. The Indian government spent nearly six million dollars fighting these cases.⁶⁷⁸

Lack of novelty can help protect these resources when backed by Indigenous Knowledge of these resources. However, especially seen with historically marginalized people, novelty can often be difficult to prove. For an invention to be patented in the United States, it needs to be qualified as a novel invention. To be novel, “it either could not have been known or used by others in the United States or have previously been patented or described in a printed publication in the United States or a foreign country.”⁶⁷⁹ Therefore, if a medicinal plant is known to Indigenous people or published, it *should* be protected from patenting. However, with lack of publishing, it can be challenging to prove if it is known by Indigenous people. Additionally, by tweaking a minor part of the plant or the procedure in which the plant is used for medicinal purposes, novelty can be justified, especially against historically marginalized people.⁶⁸⁰ Most Indigenous Knowledge on medicinal resources is not written or published and is instead passed down orally, which increases the vulnerability of patenting by non-Natives. If the traditional Indian documents on turmeric were officially published and reviewed by the United States patent office, India would not have needed to spend millions of dollars fighting the case.⁶⁸¹

⁶⁷⁷ Reid, “Biopiracy,” 89.

⁶⁷⁸ Reid, “Biopiracy,” 90.

⁶⁷⁹ Reid, “Biopiracy,” 82.

⁶⁸⁰ Reid, “Biopiracy,” 92.

⁶⁸¹ Reid, “Biopiracy,” 90.



Following the turmeric and neem cases, India's National Institute of Science Communication and Information Resources (NISCIR) started collecting information on 130,000 traditional Indian medicinal products to publish in a database. The European Patent Office (EPO) entered an agreement with India to gain access before granting any patents involving botanical knowledge to the database to help prevent future cases like these.⁶⁸² This was a progressive step towards preventing biopiracy, as if the knowledge of a plant's medicine uses has been previously published, it cannot be patented.

Implementing this system with Native American medicine would prove to be almost impossible. Tracking down all Traditional Knowledge on medicinal plants spanning thousands of years and all over the country would be a nearly impossible and costly feat, if possible at all. The database project in India had a budget of \$2 million. Much Indigenous Knowledge is passed down orally and uses different names for plants than what scientists use. Additionally, due to the closed nature of many Native American practices, community members may feel uncomfortable sharing their sacred knowledge that has traditionally only been passed down orally from generation to generation.⁶⁸³

A database may pose additional concerns and may inadvertently subject this knowledge to further biopiracy. An estimated 4,000 plants with medicinal properties have been patented on plants that are already known.⁶⁸⁴ Therefore, Traditional Knowledge could more easily be obtained and copied. It is also subject to being misconstrued or distorted and then patented. For example, a United States Patent was granted for a solution of leaves from the aloe vera plant and water that was documented in Indian literature.⁶⁸⁵ The patent was granted

⁶⁸² Reid, "Biopiracy," 91.

⁶⁸³ Reid, "Biopiracy," 82.

⁶⁸⁴ Reid, "Biopiracy," 92.

⁶⁸⁵ Reid, "Biopiracy," 92.



on the grounds that the solution used only chlorinated water.⁶⁸⁶ By changing one element such as the kind of water or the temperature of the water, the practice is then eligible to be patented. The United States often exercises leniency when defining novelty; therefore, companies that pirate and profit from Indigenous resources often rely on United States patent law.

In 1974, the founder of the International Plant Medicine Corporation based in California, Loren Miller, traveled to Ecuador, where he obtained samples of ayahuasca from a local Indigenous tribe. Ayahuasca is a psychoactive plant that has been used by Indigenous South Americans and is often administered by a shaman in a long healing ceremony for its therapeutic and medicinal benefits.⁶⁸⁷ The plant is sacred to many Indigenous South Americans; the name translates from Quechua as the vine of “souls.”⁶⁸⁸ Miller took samples back to California to reproduce and study for its potential uses in cancer treatment and psychotherapy. In 1986, Miller obtained United States Plant Patent No. 5,571 for the specific strain, awarding him the exclusive right to grow and sell it.⁶⁸⁹ In a statement, Miller claimed: “If this patent was causing any harm to the Indigenous people, I would have it canceled myself.”⁶⁹⁰

However, in 1994, the Amazon Alliance, Center for International Environmental Law, and Coordinating Body of Indigenous Organizations of the Amazon Basin challenged the patent. They were successful on the basis that the strain was no

⁶⁸⁶ Reid, “Biopiracy,” 92.

⁶⁸⁷ Jonathan Hamill et al., “Ayahuasca: Psychological and Physiologic Effects, Pharmacology and Potential Uses in Addiction and Mental Illness,” *Current Neuropharmacology* 17, no. 2 (January 7, 2019): 108–28, <https://doi.org/10.2174/1570159x16666180125095902>.

⁶⁸⁸ Sara V. Press, “Ayahuasca on Trial,” *History of Pharmacy and Pharmaceuticals* 63, no. 2 (2022): 328–53, <https://doi.org/10.3368/hopp.63.2.328>, 329.

⁶⁸⁹ Press, “Ayahuasca on Trial,” 329.

⁶⁹⁰ Press, “Ayahuasca on Trial,” 352.



different from the original form of the plant that Miller collected and therefore lacked novelty. In 1999, the United States Patent and Trademark Office revoked the patent. However, Miller succeeded in his patent reinstatement in 2001 based on evidence that the shapes of the leaves and stems of his breed were novel.⁶⁹¹ Miller left many Indigenous people concerned with his actions, despite his supposed good intentions to study the beneficial uses of a plant. Miller's patent reinstatement by the United States after protests and legal action from Indigenous-led groups demonstrates the unwillingness to listen to and consider Indigenous voices in these matters. This case demonstrates again how lenient patent law in the United States can be, and how easily novelty can be proven.

In 2022, San Francisco-based company Journey Colab, which uses psychedelics to study addiction treatment, obtained a patent for lab-made mescaline (the active ingredient in peyote). However, it became the first company of its kind to publish a patent non-assertion pledge. This means that the company vowed to not sue Indigenous people for patent infringement for using peyote in their traditional way.⁶⁹² Additionally, Journey Colab established The Journey Reciprocity Trust, devoting a small portion of the company's founding equity to Indigenous communities; however, the company does not specify which Indigenous communities and whether they are solely ones that use peyote.⁶⁹³ Although this initiative is a progressive addition to studying psychedelics for medical research and innovation in mental health care, it is unclear to what extent Indigenous communities were

⁶⁹¹ Press, "Ayahuasca on Trial," 331.

⁶⁹² "The Journey Colab Reciprocity Trust," Journey Colab, accessed November 9, 2023,

<https://www.journeycolab.com/the-journey-colab-reciprocity-trust>.

⁶⁹³ Journey Colab, "Reciprocity Trust."



thoroughly consulted, and whether they provided consent and are receiving benefits from this process.

Hopefully, companies continue to follow this precedent. However, there are no regulations or incentives to follow suit. A non-assertion pledge is not required, enforceable by law, or even encouraged. As psychedelic lab research accelerates companies continue to receive patents, the federal government must have a role in protecting the rights of Indigenous people to not be sued for patent infringement for using their crucial traditional resource of peyote.

IV. The Federal Government's Role

Protected by the patent laws of the United States, private companies can become the new gatekeepers of Indigenous Knowledge and resources. As this surge in psychedelic research accelerates, policies need to be implemented quickly to protect against exploitation and biopiracy of Indigenous resources such as peyote on United States soil. Patent law leniency jeopardizes the autonomy of Indigenous people's right to use peyote if companies gain the right to peyote or mescaline.

New medical research of psychedelics spearheads potential progress in the mental health medical field. Discoveries in psychedelics have the potential to improve countless lives. Many supporters of these initiatives argue that no more roadblocks or limitations should be placed on these endeavors.⁶⁹⁴ However, "progress" in the United States often comes at the expense of Native American livelihoods.⁶⁹⁵

⁶⁹⁴ Alicia Victoria Lozano, "Candidates Who Support Psychedelics as Medicine Get a Political Action Committee," NBCNews.com, March 20, 2023, <https://www.nbcnews.com/news/us-news/candidates-support-psychedelics-medicine-get-political-action-committee-rcna75295>.

⁶⁹⁵ John Gast, "American Progress," An allegorical female figure of America leads pioneers westward, as they travel on foot, in a stagecoach,



While the pursuit of these new medical advances for Americans accelerates, Native Americans still experience unequal access to health care. The life expectancy of Native Americans is five years shorter than the general United States population.⁶⁹⁶ Native Americans are 20 percent more likely than white Americans to experience colon and lung cancer.⁶⁹⁷ Native Americans are more likely to commit suicide than white Americans, with those under the age of 25 being three times more likely.⁶⁹⁸ The Indian Health Service (IHS) expenditures per patient are three times lower compared to Medicare.⁶⁹⁹ The IHS struggles with the retention and recruitment of professional staff, causing grave limitations and a lack of continuity of care. IHS primary care physicians often feel overworked and are forced to take on a higher degree of patient complexity than they can manage without specialty consultation.⁷⁰⁰ Lack of attention and funding for the IHS from Congress leads to poor health and the premature deaths of Native American individuals. Funding towards research in psychedelics has the potential to deliver transformative health care, however, simultaneously, the Indigenous people of this land still lack the funding and support to meet their basic healthcare needs.

conestoga wagon, and by railroads, where they encounter Native Americans and herds of bison., The Library of Congress, 1872, Autry Museum of the American West, Los Angeles, California,
<https://www.loc.gov/item/97507547/>.

⁶⁹⁶ Gina Kruse et al., “The Indian Health Service and American Indian/Alaska Native Health Outcomes,” *Annual Review of Public Health* 43, no. 1 (2022): 559–76,
<https://doi.org/10.1146/annurev-publhealth-052620-103633>.

⁶⁹⁷ Kruse et al., “The Indian Health Service.”

⁶⁹⁸ Kruse et al., “The Indian Health Service.”

⁶⁹⁹ Desiree L Fox, Ciara D Hansen, and Ann M Miller, “Over-Incarceration of Native Americans: Roots, Inequities, and Solutions,” *Safety and Justice Challenge*, n.d., <https://doi.org/https://safetyandjusticechallenge.org/>, 35.

⁷⁰⁰ Kruse et al., “The Indian Health Service.”



V. Legislation and Agreements

One hundred and forty-four other countries have vowed to take steps against the exploitation of Indigenous resources by signing the Nagoya Protocol on Access and Benefit Sharing.⁷⁰¹ The Nagoya Protocol was established by the United Nations in 2014 to protect Indigenous resources such as peyote, turmeric, and neem against biopiracy. This international treaty stresses working with Indigenous communities to agree upon terms in an informed, consensual manner with an emphasis on benefit sharing. When countries abide by the Nagoya Protocol, Indigenous communities need to consent to the utilization of their traditional knowledge and genetic resources by any government, individual, or company.⁷⁰² Further, they also need to negotiate mutually agreed upon written terms for the equitable and fair sharing of profits and subsequent third-party use.⁷⁰³ Each party may take legislative, administrative, or policy measures to ensure that the terms of their agreement are upheld.

The Nagoya Protocol also promises that Indigenous Knowledge associated with genetic resources is accessed with the prior and informed consent of the Indigenous communities. In addition, under the Protocol, there must be consideration for the Indigenous and local communities' customary laws, community protocols, and procedures. Parties who benefit from the utilization of genetic resources are encouraged to contribute to the conservation efforts and sustainable uses of the resource. Although the Protocol was opened for signatures

⁷⁰¹ “Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity,” United Nations Treaty Collection, n.d., https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XVII-8-b&chapter=27&clang=en.

⁷⁰² United Nations Treaty Collection, “Nagoya Protocol.”

⁷⁰³ United Nations Treaty Collection, “Nagoya Protocol.”



in the United Nations headquarters in New York for a full year, the United States has never signed it.⁷⁰⁴

In 2021, the Biden-Harris administration announced new pledges to support Native American communities and elevate Indigenous Knowledge to inform federal policymaking.⁷⁰⁵ The administration outlined its goals of growing mutually beneficial relationships with Tribal Nations and Indigenous people, as well as “considering, including, and applying Indigenous Knowledge in Federal research, policies, management, and decision making.”⁷⁰⁶ This is a tremendous and properly celebrated achievement in legitimizing Indigenous Knowledge and elevating Indigenous voices in initiatives such as climate resilience and environmental restoration. Along with this statement, the administration vowed to strengthen the Tribal consultation model.⁷⁰⁷ Tribal consultation is the government-to-government dialogue between official representatives of Tribes and Federal agencies to discuss Federal proposals before the Federal agency makes decisions on those proposals.⁷⁰⁸ New consultation training and guidebooks will be created to ensure that Tribal self-government, sovereignty, and rights are respected and upheld. These statements sound promising. However, the

⁷⁰⁴ United Nations Treaty Collection, “Nagoya Protocol.”

⁷⁰⁵ “Fact Sheet: Biden-Harris Administration Announces New Actions to Support Indian Country and Native Communities Ahead of the Administration’s Second Tribal Nations Summit,” The White House, November 30, 2022,

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/30/fact-sheet-biden-harris-administration-announces-new-actions-to-support-in-dian-country-and-native-communities-ahead-of-the-administrations-second-tribal-nations-summit/#:~:text=Initiated%20at%20the%202021%20Tribal,promote%20environmental%20sustainability%20and%20the>.

⁷⁰⁶ The White House “Indigenous Knowledge Guidance.”

⁷⁰⁷ The White House “Indigenous Knowledge Guidance.”

⁷⁰⁸ Government-to-government dialogue between official representatives of Tribes and Federal agencies to discuss Federal proposals before the Federal agency makes decisions on those proposals.



guidebook, which was published in 2023, is seriously flawed. It includes tips for consulting with Tribal Nations such as “[a]void using patronizing language when working with Tribes” and “do not mistake kindness, silence, or politeness for consent or agreement,” but does not require obtaining consent from Tribes. In fact, in the 121-page document, requiring consent is only mentioned when it involves removing Native American human remains, cultural items, and archeological resources from Tribal lands.⁷⁰⁹ Therefore, although the federal government may use Traditional Knowledge to guide federal agencies, Native Americans are still powerless to consent to how Indigenous Knowledge is used.⁷¹⁰ Additionally, the federal government is still not required to receive consent from Native Americans about federal proposals involving Tribes.

Free, prior, and informed consent (FPIC) must be implemented in the United States. FPIC is the right of self-determination of Indigenous people, established by the United Nations. Under FPIC, when decisions are made by

⁷⁰⁹ DoD Legacy Resource Management Program, Department of Defense Tribal Engagement Guidebook, 2023.

⁷¹⁰ *Editorial Note*: Here, the author intended to justify the use of capitalizing Indigenous and Traditional Knowledge. These terms are capitalized by the DOI and White House. See the following sources for inspiration of this capitalization: “Departmental Policy on Indigenous Knowledge | Indian Affairs,” accessed March 23, 2024, <https://www.bia.gov/service/tribal-consultations/departamental-policy-indigenous-knowledge>; “Indigenous Knowledge | OSTP,” The White House, accessed March 23, 2024, <https://www.whitehouse.gov/ostp/ostps-teams/climate-and-environment/indigenous-knowledge/>; However, I have also seen literature fail to capitalize Indigenous Knowledge and Traditional Knowledge. See the Harvard Public Health Magazine for recent works without capitalization: Harvard Public Health Magazine and Makepeace Sitlhou Tu Lucy, “How Indigenous Knowledge May Shape the Future of U.S. Policy,” *Harvard Public Health Magazine* (blog), June 5, 2023, <https://harvardpublichealth.org/equity/indigenous-knowledge-to-shape-u-s-a-pproach-to-health-climate/>.



governments that impact Indigenous people, resources, or land, Indigenous people must consent without coercion, intimidation, or manipulation prior to authorization of activities. They must also receive sufficient knowledge about the proposed activities. In the federal government's aim to strengthen ties with Tribal Nations, no effort has been made to implement FPIC. FPIC in Tribal consultation is outlined in Article 19 of the United Nations Declaration On The Rights Of Indigenous Peoples (UNDRIP), declaring that states must consult with and obtain FPIC from Indigenous people "before adopting and implementing legislative or administrative measures that may affect them."⁷¹¹

The United States did not support UNDRIP when it was adopted by the General Assembly in 2007 but later endorsed it in 2010 due to administration change. However, alongside the endorsement came a preface; a document expressing that the Declaration will have limited legal power.⁷¹² The United States announced that instead, the "[d]eclaration expresses aspirations that the United States seeks to achieve."⁷¹³ Although the Biden-Harris administration's steps to improve Tribal consultation display progress, the United States, if it wants to keep its word about aspiring to uphold UNDRIP, must begin to implement FPIC in Tribal consultation.

VI. Conclusion

Before proceeding with the expansion of psychedelic research and legalization, the United States must instate protections for Native American. First, the United States must sign and abide by the Nagoya Protocol. This will codify Native

⁷¹¹ United Nations, United Nations Declaration on the Rights of Indigenous Peoples, 2007.

⁷¹² Jordyn Arndt, "Explanation of Position on 'Rights of Indigenous Peoples'" (New York, New York, November 7, 2019).

⁷¹³ Arndt, "'Rights of Indigenous Peoples.'"



Americans' ability to use peyote without risk of criminalization for patent infringement. It will ensure that Native American people, communities, Indigenous Knowledge, and resources are protected and used under mutually agreed-upon terms. Second, the Biden-Harris administration must fully ratify and abide by UNDRIP. This will require Native Americans to provide free, prior, and informed consent for the use of their resources and Indigenous Knowledge. Tribes and companies must reach mutual agreements on the sharing of benefits, extraction, and use of peyote. Third, Tribal law must be legitimated and considered in matters involving Tribes. Fourth, funding for the IHS including addiction, trauma, and mental health treatment must be increased to mitigate unacceptable disparate health outcomes that leave Native Americans behind. These actions are not just empty promises, statements, or aspirational documents. Native American rights and sovereignty over their traditional resources must not be protected "aspirationally," but protected by no less than United States law.



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