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The Repercussions of a Hallucinogenic Cactus

Introduction

Peyote, also scientifically known as *L. williamsii*, is a compact, slow-growing cactus with well-pronounced vertical spines around its circumference and tuft, smooth hairs around the body, along with a napiform root system. It is a flowering cactus that unpredictably produces a singular, beautiful fuchsia bloom. The button of the cactus itself contains a chemical known as mescaline with a compound of 2-(3,4,5-trimethoxyphenyl)ethanamine by the entanglement of lysergic acid diethylamide and psilocybin, when which consumed causes a stimulation of serotonin and dopamine receptors and changes in the adrenal medullary function with profound sympathomimetic effects. Peyote is native to Southwestern United States, specifically South Texas and Northern Mexico. Similar to the rest of the cacti family, it flourishes in desert climate (Stork & Schreffler, 2014). The Chihuahuan Desert is where it calls home, with an average precipitation of 9.3 inches and a temperature of 64 degrees Fahrenheit (Gibbens, 1999). The cactus participates in a commensal relationship with Tamaulipeca Calcareous Thornscrub, or *L. cactaceae*, a dense brush that also grows in the region. The thornscrub's canopy provides peyote with an ideal environment for germination, encouraging the population to grow whilst reciprocally receiving protection from predators (Williams, 2012). However, over the last four decades the majority of the plants' population is no longer found in its native biome of the Chihuahuan, but instead through artificial cultivation across the globe.

Within its native habitat, harvesters known as peyoters have been found cutting the cactus too low on the subterranean stem, negatively affecting the regeneration of stems which leads to death for decapitated plants (Terry & Mauseth, 2006). The International Union for Conservation of Nature (IUCN) red list labeled the cactus as extremely vulnerable in 2013 as a direct result of unsustainable harvesting practices (Golden, 2022). However, the cactus has yet to make it onto any federal endangered species list, therefore limiting protection efforts to prevent overharvesting and abuse. This raises the question of whether there is a correlation between the dwindling population of peyote and American environmental politics. Furthermore, this federal inaction raises questions about the continued influence of historical colonial anxieties towards Native Americans who refused to assimilate to Christianity. When considered in relation to the historical context of political ideology regarding controlled substances, one must wonder: is the rationale for failing to protect *L. williamsii* predicated on the stigmatization of dissenting Indigenous Peoples' and the judiciary artifacts of major contending views?

Figure 1

Source: Davis, Dawn. Peyote, *Lophophora williamsii*. 2020. Photograph.

Discussion

Archaeologists have found evidence that suggests peyote has been used in tribal ceremonies of Native Americans since 1000 B.C. with historical records indicating that the Tarahumara tribes were the first to discover it, and later spread among the Cora, Huichol, and Chichimca tribes. A Spanish priest by the name of Bernardino de Sahagun became the first to document the use of it in European records in 1560 (Schultes & Hoffman, 1992). Sahagun's writings became one of the most important factors for the Westernization of peyote consumption in the New World. As knowledge of its usage spread, Spanish missionaries, doctors, and explorers from around the globe began to study peyote's ceremonial usage. By the 20th century, however, the most active ceremonial practitioners were the Kiowa and Comanche tribes, who stemmed the modern "Peyote cult," which was premised on aboriginal medico-religion. It became recognized as a religious sacrament throughout North America which allowed the continuation of the cultural practice, but this new recognition fostered opposition toward the ritual from differing religions and law enforcement. From the rise of the psychedelic era in North America in the 1960s, consumption of hallucinogens such as peyote skyrocketed.

A nationwide ban on peyote was instated by the US federal government in 1970 and it became classified as a Schedule 1 substance under the Controlled Substance Act of 1970 – alongside drugs such as heroin, marijuana, and ecstasy. This ban came after a long history of federal attempts to eradicate its ceremonial usage within tribes, in conjugation with the prohibiting of other cultural ceremonies such as Ghost Dances; the subsequent escalating tensions between the violent colonizers and the dissenting Indigenous Peoples' came to a head at

the Wounded Knee Massacre. Since the early 20th century, the federal oppression of Indigenous culture can be seen increasingly in indirect ways through the provision of generalizable legislation that does not explicitly target these populations but has critical implications for them, such as the aforementioned Controlled Substance Act. It is said that in the decade beforehand, law enforcement often patrolled roadless Navajo reservations with the sole purpose of breaking up peyote ceremonials being held by the Indigenous tribe (Sahagun, 2020). The original goal of the act was to serve as a reformation within the Psychedelic era to create a more liberalized drug policy with mandatory minimum sentences for the use of psychoactive drug consumption and penalties for illicit trafficking, giving rise to the Drug Enforcement Administration (Courtwright, 2004). Oppression of religious freedom continued to present itself in the United States, as exemplified by the 1990 Supreme Court case Employment Division, Department of Human Resources of Oregon v. Smith, which entailed two counselors employed by a drug rehabilitation facility who consumed peyote as part of their religious ceremony in the Native American Church. They were later fired on account of work-related misconduct and denied unemployment compensation. The question was raised on whether a state can deny unemployment benefits to a worker for using illegal drugs for religious purposes, and it was argued that the action had violated the First Amendment principle of freedom of religion. The Supreme Court concluded a 6-3 decision for the Department of Human Resources of Oregon, declaring that an individual's religious belief does not exempt them from complying with laws (Oyez, 2023).

In the years after the court ruling the American Indian Religious Freedom Act of 1994 instituted by President Bill Clinton was signed into law. This protected Indigenous Peoples' right to exercise traditional practices through ensured access to sites, use and possession of sacred objects, and ceremonial rites, including the consumption of peyote (42 U.S.C. § 1996). In

accordance with this act, only approximately 250,000 people in the US are granted legal permission to consume peyote, if they so choose. There is an even lesser number that consumes the plant, as it causes extreme gastrointestinal side effects and therefore not always consumed by every NAC member. Despite this small consumer population, legal and illegal harvesting practices are threatening the cactus' dwindling population.

While the creation of 42 U.S.C. § 1996 federally protected the ceremonial use of peyote, it does not safeguard peyote's native habitat. In addition to the impact of harvesting practices, more significant threats include urban development, oil and gas projects, and the movement to legalize its consumption nationwide. Due to its slow-growing nature, the cacti's native population gradually decreased over the years. Furthermore, there is limited to no published data on the quantified impacts of population densities of this cactus, leaving it challenging to assess the extent of the species' endangerment.

The research proceeding *A Tale of Two Cacti* by M. Terry and D. Price analyzes the relationship between peyote and the endangered star cactus, which is also homed in the Tamaulipan thornscrub. With now less than 4,000 plants, it reached the US Fish and Wildlife endangered species list in 1993. As for the estimated amount of peyote left in its natural habitat, I have found no quantitative data of any sort, nor reputable estimates; which shows how little research has been conducted on the topic. Perhaps this issue is surrounded by the fact the majority of the land where peyote resides is privately owned, or possibly due to the fear-mongering of its hallucinogenic factors combined with American politics making research for it inaccessible. While the International Union for the Conservation of Nature (IUCN) has listed peyote as vulnerable and can be found on the International Trade on Endangered Species,

it has yet to make it onto the list specifically within the United States that will enforce protection and contribute to the rehabilitation of the native species populations (Ermakova, et al. 2020).

Conclusion

Although peyote produces a psychedelic protoalkaloid that has an interest to the public for consumption around the globe, it is still a native species to Texas and Northern Mexico and an important part of those arid ecosystems. The federal protection of peyote in its homeland does not present a danger to society, but the neglect to safeguard and rehabilitate threatens an Indigenous cultural tradition that is a vehicle to communicate with Indigenous spiritual cosmologies and ancestors. We can conclude from the aforementioned studies that perhaps its chemical properties of causing human psychosis when consumed is what is limiting its protection. Looking past its hallucinogenic properties and viewing it purely as a plant that is dwindling at a rapid rate may allow federal agencies to protect it as an endangered species. This unique plant, as we have seen earlier, shares a commensalistic relationship with the creosote bush of the Chihuahuan desert and is a native piece of this area. Additionally, its production of 2-(3,4,5-trimethoxyphenyl)ethanamine by the entanglement of lysergic acid diethylamide and psilocybin, is a hallucinogenic property that may be studied and used as a pharmaceutical down the line. Nevertheless, no knowledge can be gained nor tested if *L. williamsii*'s remaining population continues to rapidly diminish.

Work Cited

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