

DREAMS, STORIES, AND MEDICINE GARDENS: A CASE STUDY ON INDIGENOUS
KNOWLEDGE SHARING THROUGH A WORK EXCHANGE
IN THE BUFFALO NATIONS

by
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ABSTRACT

Restoring and expanding Indigenous knowledge systems after centuries of settler-colonial violence against Indigenous Peoples, cultures, and worldview in the United States (US), can contribute to the resilience of the food system in the extreme change of the Anthropocene. To explore this, this thesis presents an intrinsic case study on how traditional ecological knowledge is shared between Indigenous land-stewards (ranchers, gardeners, farmers, gatherers, hunters, fishers, food processors) in the Northern Great Plains and Rocky Mountains of the US when they meet in the setting of a paired work exchange on each other's lands. Indigenous research methods were chosen to guide an understanding of the occurrence of knowledge-transfer from the exchange. Data was gathered through story-sharing circles, conversations and by shadowing the exchanges by participating in work tasks and was processed by combining both Western and Indigenous methods of analysis. To identify themes, the conversations, stories, and observations were coded. The codes were then reapplied to the original narratives to honor the storyteller and preserve the relational integrity of each story. The deeper understanding of findings was then conveyed with abstract paintings, whose symbols are informed by the stories and conversations that occurred during the exchange. While four key themes emerged from the exploration of how knowledge is shared, the theme of healing generational trauma by returning to traditions and culture was most central, emerging in every conversation. The depth of the connection shared between the two participants, highlights the potential work-exchanges hold to empower Indigenous stewards and knowledge.

CHAPTER ONE

INTRODUCTION

Research Background

The globalized food system, driven by an expansion of monetary and physical yield, is insufficient in its ability to feed the planet sustainably (Mason & Lang, 2017). A sustainable food system is one that can feed people in a way that is protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable, nutritionally adequate, safe and healthy; while optimizing natural and human resources for present and future generations of people. The current globalized food system fails to meet this standard, as it functions at the expense of extreme resource extraction, the exploitation of human labor, eroding biodiversity, cultural knowledge, practices, and skills; and significantly contributes to the climate crisis (Gómez-Baggethun et al., 2013; Mason & Lang, 2017).

In the Northern Great Plains and Rocky Mountains of the United States (US), where this study took place, the failures of a globalized food system are acutely experienced in tribal communities throughout. Central to system disruption in this region, was the mass eradication of the American bison (*Bison bison*), the kinship species (Falcon Ramaker, 2021) at the center of the Great Plains food and eco-system. The loss of the bison (hereof buffalo) was one of many acts of domination over Indigenous Peoples and food that has contributed to the erosion of biodiversity, diverse cultural knowledge systems and escalated climate change (Taschereau Mamers, 2020). The legacy of the mass-extraction of the buffalo is felt in the health of the communities and ecosystems. With the amounting pressure of climate change, how Indigenous knowledge can be shared in a globalized and contemporary context will determine the resilience of the food system (Gómez-Baggethun et al., 2013).

Resilience examines the capacity of a given system to withstand shocks before collapsing or changing to a different state (Downey, 2010). This includes observing slow-moving variables that gradually generate stress on a system over time. For example, the mass extraction of resources driven by the global food system is exerting slow pressure on the climate, adversely affecting individual ecosystems worldwide, and bringing us closer to the system's thresholds: the maximum capacity of stress a system can endure before collapsing and transforming into a different state (Downey, 2010).

Examples of resilient food systems, that have both fed their human populations and contributed to the health of the environment, exist around the world in the thousands of Indigenous cultures that have grown in relationship with their local ecosystem over millennia (Berkes et al., 1994). Indigenous food systems are distinct in the cultural epistemologies that are braided into their foundation and create traditional ecological knowledge (TEK). TEK is knowledge gained from the relationships of all living beings with one another and their environment, passed through generational time (Berkes et al., 1994). It is a component of Indigenous knowledge that is held by Native Peoples globally and attuned to the specificities of a given location. TEK is intertwined with the cultural paradigms of those who create and continue to practice them. Indigenous knowledge systems and worldviews are foundationally different from those found in the dominant Western culture and cannot be separated from the practices of TEK. In his book, *Research is Ceremony*, Wilson (2020) describes an Indigenous epistemology:

It is important to recognize that the [Indigenous] epistemology includes entire systems of knowledge and relationships. These relationships are with the cosmos around us, as well as with concepts. They, thus, include interpersonal, intrapersonal, environmental, and spiritual relationships, and relationships with ideas. Indigenous epistemology is our cultures, our worldviews, our times, our languages, our histories, our spirituality, and our places in the cosmos. Indigenous epistemology is our systems of knowledge in their context, or in relationship (Wilson, 2020, p. 74).

A relational worldview was at the heart of my research that explored knowledge in a specific context; I nourished my relationships with participants, to ideas, places, and values and in the process, and gained an awareness of my own cultural conditioning. I tried to hold Wilson's

words in mind as I learned from the relationships that occurred from the experience I co-created with participants and opened myself to a different reality (Hart, 2010). Viewing the world through a web of relationships is also woven into TEK, positioning how people view themselves in relation to their food systems and environments (Berkes et al., 1994; Kovach, 2021).

Indigenous relational knowledge, centered in place and expressed through practices in food, agriculture and culture, is an embodiment of TEK. While TEK shares overlapping values found among cultures globally, such as relationality (Ranalda & Tsosie, 2022), its practices are specific to the distinct culture that created it over millennia within their given ecosystem (Nelson, 2014). One example of TEK in practice is in the slash-and-burn agroecosystem management found in Maya communities¹ across Central America. If applied appropriately, the practice of slashing and burning a section of forest to prepare a field for sowing, generates soil fertility, contributes to plant/animal species management, and serves as a key process in creating one of the most diverse agroecosystems in the world (Downey, 2010; Robbins, 2018).

My thesis explores how TEK is shared between Indigenous food system stakeholders (ranchers, gardeners, farmers, gatherers, hunters, fishers, food processors) in the Northern Great Plains and Rocky Mountains of the United States (US) in the setting of a paired work exchange on each other's lands. The concept of using paired exchanges as a way of facilitating knowledge sharing was inspired by the *Campesino a Campesino* (peasant-to-peasant) movement that emerged in Central America in the 1970s (Holt-Giménez et al., 2010).

The *Campesino a Campesino* (CAC) method of knowledge sharing began with peasant farmers in Guatemala, who sought to empower themselves and their peers by reestablishing traditional and contemporary knowledge on cultivation through firsthand visits to each other's farms. In subsequent years, *campesinos* (peasants) built connections across nations through work exchanges focused on mutual-assistance and collaboration. CAC was eventually adopted as a method for knowledge transfer by *La Vía Campesina* (LVC), an international organization centered on uniting peasants globally, to defend peasant agriculture for food sovereignty (La Vía

¹ While the term “Maya communities” is used here, it must be acknowledged that these are not monolithic or timeless entities. Rather than culturally homogeneous or fixed in eternal continuity, they are shaped by diverse, place-based histories and ongoing transformations—historical, socio-cultural, and ecological (Cocom, 2024).

Campesina, 2025). LVC helped implement the CAC method throughout Central America; through farm visits and collaborative work, peasants shared cultivation techniques, practical skills, and seeds, while working towards national social reform aimed at equitable growth for the *campesino* class. These strong relationships reinvigorated Indigenous knowledge, increased crop yields by 100-400%, and sparked a paradigm shift towards food sovereignty and food system resilience. CAC led to established networks of Indigenous peasants across Guatemala and beyond, and empowered the peasant class (Holt-Giménez, 2006).

Turning to the CAC movement for guidance, as it was led by Indigenous Peoples who empowered their communities as well as those around them (Holt-Giménez, 2006; Watters, 2021), the Steward-to-Steward (STS) program was co-created by Indigenous ranchers, farmers, gardeners, foragers, food producers and/or processors (Stewards) in the Northern Great Plains and Rocky Mountains. This project, funded by the United States Department of Agriculture NextGen grant began in 2023 and is expected to run until 2028. STS utilizes a paired exchange format, modeled after the CAC approach, to facilitate the transfer of knowledge and skills between participants. Once peers are paired, an exchange is organized where one Steward visits the other on their land, reservation, or home to meet and participate in work activities for two days. During a second exchange, the roles reverse, and the participant who originally visited receives the other on their land to host and mentor in work activities. This exchange program was designed to provide participants with the opportunity to gain firsthand experience in diverse methods of food production by engaging directly with other tribal food systems Stewards; as well as to foster a strong network of Native professionals involved in food systems to support each other for years to come.

In the US, there were moments in history that actively interrupted the handing-down of TEK, moments like the passage of the Relocation Act, which removed people from their traditional lands, the Allotment Act, which separated people from their communities and quasi-privatized reservation land, and the Boarding School Era, which separated children from their families, histories and cultures (Child, 2018; Ruppel, 2008). Today, values established by settler-colonialism are braided into the cultural paradigms that surround Indigenous Peoples (Smith, 2022). Narratives around Indigenous Peoples that *other* them or are intended to lead the majority population of the

US to think of Indigenous Peoples through stereotypes are still culturally accepted (Smith, 2022). Such narratives are expressed both at an individual and institutional level, including Western education and research institutions. As Linda Smith (2022, p. 22) states, “The colonizers did not simply design an education system. They designed an education especially to destroy Indigenous cultures, value systems and appearance.” In an attempt of recovering Indigenous methods of knowledge exchange, my study was centered on understanding how knowledge is passed between Indigenous Stewards. The work of scholars grounded in decolonizing academic spaces guided me in choosing methods that aligned with *Indigenous values* to mitigate the power hierarchy inherent between researcher and participant, to empower Indigenous epistemology, and to challenge the legacy of colonization within Western research.

Conceptual Framework

To hold myself accountable and to provide me with clarity on how to honor Indigenous values, I chose to adopt the holographic framework from Māori scholar, Manulani Aluli Meyer (2020), to guide each step of the research. The in-field experiences of both my participants, as well as my own, are interpreted through the triangulated meaning found in this framework. The triangle references the synthesis of body (objective), mind (subjective), and spirit (transspatial, cultural, mystic) in the meaning making process of research. Meyer uses the analogy of a hologram where three beams of light unite into one, illustrating how through the synthesis of body, mind, and spirit, we find life-force and make meaning (Meyer, 2020).

Through this study, I have learned about cultural ways of knowing and how people share (or not share) TEK when they connect with others in a similar lived experience. This research is grounded in an Indigenous epistemology, emphasizing the importance of conducting research that includes, respects, and represents the beliefs and worldviews of cultures that have historically been falsified in Western science (Ranalda & Tsosie, 2022). Epistemology takes on the notion that knowledge is known through the subjective experiences of people (Creswell & Poth, 2016).

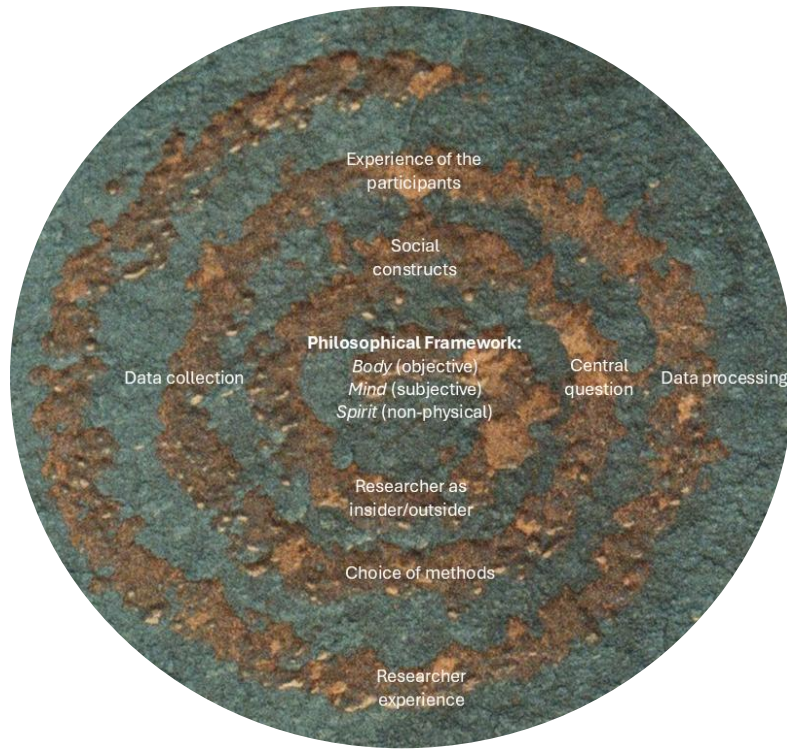


Figure 1: Applied holographic framework; a visual aid. Ancestral Puebloan - generated by the author.

Figure 1 supports an understanding of how the conceptual framework is braided into each component of the study: A spiral symbolizes the cyclical and synchronized motion of learning as knowledge expands outward. At the spiral's center is the holographic framework. As the spiral extends outward, every decision I made in the research process arises from those before it, all anchored by the holographic framework as the foundation. I move from the unity of body/mind/spirit to understanding of how that influences my position/identity, the cultural conditioning I carry, my research question, the choice of methods, data collection, relationship with participants, data processing, and eventually, to my reflections. The applied framework illustrates how I adapted Mayer's (2020) model to guide each research decision and shape the overall narrative.

Delimitations and Limitations

A significant limitation of this study was that, while the CAC movement was established organically, by Indigenous People taking action to support each other as equals, our STS program was developed at and led by a Western academic institution. This context introduces an inherent power dynamic that is culturally exclusive and must be consciously mitigated in every decision (Kovach, 2021; Smith, 2022). For example, *tradition* as a word lacks precise definition and specificity, and giving a clear definition to the word in this thesis presented the risk of positioning myself as the arbiter of what qualifies as tradition when I am an outsider looking in. This tension was one of the greatest flaws of my research. Despite my best efforts to mitigate power dynamics, my research question is imbued with a power hierarchy by asking how traditional knowledge is shared, even though I am an outsider to the communities who generously collaborated with me.

Balancing the needs of study participants with the requirements of the grant posed challenges. For example, it was difficult to claim building meaningful relationships with participants and their communities while adhering to the timeline of the grant.

Aligning the goals and the timeline of an ambitious project with the circumstances on the reservations such as impoverishment and the associated lack of resources presented a further challenge in this study. Indigenous Peoples are among the most immiserated peoples globally, having endured centuries of carefully attuned violence against them, physically, emotionally, politically, and even against their worldviews and ideas (Brown-Rice, 2013). In the US, Indigenous Peoples are one of the most underserved and neglected demographics (Cornell & Kalt, 1990). While participants were compensated for their involvement, we were asking for two days of participants' time and that they both open their homes to a peer, to host and feed them. We made this request while also understanding that participants were people who are actively facing subjugation. Reservations, which are deprived of basic resources, often exemplify this struggle. In this case study, for example, one participant's reservation lacked both a hospital and potable water. It was my responsibility to have flexible expectations in order to adapt to any adversity that arose.

Racial inequalities serve as another limitation in this study. The line that has been drawn between myself as a white woman and my Indigenous counterpart comes from systemic structures of race. Race has been used as a tool to further the *othering* of Indigenous Peoples and contributes to their marginalization (Smith, 2022). There are centuries of violence inflicted by my ancestors upon theirs. This historical context influences both the trust participants choose to extend to me and limits my ability to understand the phenomena of knowledge sharing through paired work exchanges. My presence as a white woman conducting research with Indigenous people could easily perpetuate a racial hierarchy, whether intended or not. My race could also influence what the participants choose to share, posing a limitation in the study. As a researcher, it is of the utmost importance that participants feel safe in my company. To practice living as an embodiment of this safety, I have relied on the wisdom found in *The Four Agreements*: Be impeccable with your word, do not take anything personally, do not make assumptions, and always do your best (Ruiz, 1997).

Another limitation was the small sample size. My case study focused on one STS exchange. This was because a long-term goal of the project is for it to become a legitimate exchange program co-led by participant initiative, in which the project team organizes the logistics and covers any costs associated with the exchanges, while participants take the initiative in choosing whom they want to visit and what they would like to teach their peers. While we hoped to have more exchanges in this first year, learning the processes that accompany running an intertribal research study took time. We used the output of this first exchange to benefit and model future exchanges.

Assumptions

An assumption embedded in the structure of this research is that Indigenous individuals working in agriculture inherently possess a connection to their traditional food system practices. This assumption does not fully capture the complexity of reality. With this understanding, the research question was intentionally written to be broad enough to allow for contemporary

expressions of culture and Indigenous identity. This includes navigating contemporary issues such as landownership, access to water, or the limitations Stewards face set by policies.

Research Question(s)

The central research question was: *In the setting of an in-field work exchange between two Indigenous land-stewards; how does the exchange of traditional ecological knowledge occur?*

Within this question are key terms that need further definition to understand their intended meaning in this study:

- *Paired work exchange*: A work exchange conducted in a paired format where person A visits person B to learn by working on their farm/ranch/garden. Then, in a second exchange, person B back visits person A. Participants will experience the roles of both the host/mentor and the visitor/learner and are in this way equals.
- *Indigenous land steward*: People with affiliation to one or more Native Nation(s) in the Northern Great Plains of the US who engage in ranching, farming, gardening, gathering, hunting, and similar food system activities.
- *Traditional ecological knowledge*: cultural worldview and practices that are rooted in relational values and deeply intertwined with relationship with land and place.

CHAPTER TWO

REVIEW OF THE LITERATURE

Traditional Ecological Knowledge

Traditional ecological knowledge (TEK) refers to the multiple knowledge systems held by Indigenous communities, that are learned, generated, and practiced through relationships developed with all living beings in a specific place over millennia (Gómez-Baggethun et al., 2013; Nelson, 2014). These practices are deeply intertwined with the worldview and epistemology of the communities who hold this knowledge; language, culture, and a general understanding of one's role in the web of life are all key components in the evolution of TEK (Nelson, 2014; Wilson, 2020). This knowledge is also generated for survival; and the accuracy and repeatability of its practices are critical for cultural and practical skills, as well as knowledge adaptation over time (Robbins, 2018). TEK embodies detailed knowledge of place, typically practiced through agroecosystem management, animal and human-migration patterns, growing medicines, knowing when to hunt and when not to, and observing and moving alongside the specific requirements in a given landscape (Yunkaporta, 2019).

A vital component in an Indigenous epistemology, which shapes the decisions and practices found within TEK, is relationship (Kimmerer, 2013; Wilson, 2020). Relational Indigenous knowledge is generally centered in a belief that people are not separate from nature but instead integral participants in their ecological community; and so, the practices found within different TEK systems are generated from centuries of detailed observation and response to the needs in a given place guided by a cultural value of showing up with respect in relationship (Yunkaporta, 2019). This view challenges the dominant Western cultural narratives that position people as superior or separate from the natural world (Nelson, 2014) and entitles them to extract resources without limitation.

Under this same Western paradigm, TEK has been denigrated as a pseudo-science, as myth, or nonsense since European contact (Nelson, 2014). However, the attentive and embodied practices within different knowledge systems are being recognized today for their resilience, as they have withstood the test of time, continue to protect and nourish biodiversity globally, and provide for all members in the web of life (Nelson, 2014). The process of creating TEK is not so different from the Western scientific method: it is rooted in curiosity and observance in a trial-and-error process of learning. Indigenous knowledge, however, spans a much longer timeframe than Western scientific practices, and encompasses a deep sense of accountability to the research subject (Nelson, 2014). It is built around flowing with a place as an active member in its systems functions, and an accurate understanding of one's role or responsibility has led to widespread ecosystem stewardship for millennia (Yunkaporta, 2019).

Two common misconceptions surrounding TEK are the assumptions that these knowledge systems only existed in a time before European contact (Berkes et al., 1994) and are no longer practiced today. This perspective is tied to the stereotype around Indigenous Peoples existing as a relic of the past and overlooks the adaptive qualities of TEK, its response to changes in the environment over time (Robbins, 2018), and the thousands of relational knowledge systems that are attributed with protecting a significant amount of the world's biodiversity today (Berkes et al., 1994). Contributing to an epistemology where one views themselves as a participant in their ecosystem and a foundational block in the adaptive qualities of TEK, are the thousands of Indigenous languages that create relationship-based worldviews through grammar and syntax that express this value (Nelson, 2014). As Wilson (2020, p. 73) illustrates in *Research Is Ceremony*, the Cree language presents a dynamic, living, process of communication: "The underlying meaning behind words in Cree gives a clue to Indigenous ontology. You might say that the language uses many more verbs than nouns. Objects themselves are not named; rather what they might be used for is described." Like the quote from Dr. Little Bear (p. 9), the responsive nature of Indigenous languages is intrinsically tied to Indigenous epistemology as well as the place where the epistemology was formed, and therefore TEK (Nelson, 2014; Yunkaporta, 2019).

One of the primary vehicles in the continuance of TEK is the transfer of knowledge through oral language. Indigenous knowledge is passed on over generations through songs, stories, poetry,

and other forms of verbal expression (Nelson, 2014). In communities where language exists in a spoken form without a standardized written system, or where the written form of a language holds less power than it does in English language for comparison, oral expressions serve as pathways to increase memory retention and develop a cultural epistemology (Yunkaporta, 2019). One of the central themes throughout each chapter of the book *Sand Talk: How Indigenous Thinking Can Save The World* is that of how oral languages create Indigenous pattern-thinking and strengthen memory (Yunkaporta, 2019).

Practicing TEK is a dynamic process of existing in response or in relationship to a place over millennia. Whether it be through designing architectural structures that allow people to move with the great migration of the American bison (Geremia et al., 2019), using swidden agriculture to control grazing species' behaviors in Australia (Robbins, 2018), or to clear a field for sowing corn in Maya communities across Central America (Downey, 2010), or planting companion seeds together in a symbiotic relationship like the three sisters (Wilson, 1917), the actions found in TEK systems are dynamic and flow with the needs of diverse ecosystems (Yunkaporta, 2019). TEK is not a static system, but an adaptive one that is intrinsically tied to Indigenous epistemology, language, relationships, and place (Nelson, 2014; Wilson, 2020), and is therefore, vastly diverse, resilient, and ever evolving (Berkes et al., 1994).

Traditional Ecological Knowledge and Knowledge Transfer in the Buffalo Nations

As TEK systems are created in relationship with specific places and ecosystems over millennia, they are vastly diverse (Nelson, 2014). Each knowledge system includes stewardship that is intricately attuned to the place where it was developed through language, cultural practice, and ecology-minded food procurement (Nelson, 2014). Since this study is situated in the bio-cultural region of the North American Great Plains where the buffalo played a role as the cultural-keystone species in the ecosystem and food system for millennia, I will focus on TEK systems that developed alongside the prairie and the buffalo (Knapp et al., 1999).

Buffalo are praised both for the raw materials their bodies provide but also for the role they play in the prairie ecosystem (Kolipinski et al., 2014). They symbiotically engineer ecosystems to create habitat for hundreds of plant species that are as culturally significant as the buffalo themselves. In ecology, the Green Wave refers to the flush of early season vegetation that begins at low elevations and ascends to higher ones as spring commences in what appears to be a wave (Geremia et al., 2019). One theory towards the migratory pattern of grazing species is that they followed this wave; however, emerging evidence suggests that buffalo are not passive followers but active participants in the movement of the Green Wave (Geremia et al., 2019): Their grazing stimulates new plant growth, enhancing biodiversity and effectively engineering the change in the landscape they inhabit. In this way, buffalo shape their own migratory patterns, by both responding to and simultaneously influencing the Green Wave (Geremia et al., 2019). Microhabitats for rare and delicate native flora are created when buffalo wallow (Nickell et al., 2018). Wallowing is the social behavior where buffalo repeatedly roll on the ground, distributing seeds that were caught in their fur, compacting soils, and disturbing the small area, thereby creating opportunity for plant communities (Nickell et al., 2018). They are also known for being key seed distributors in the prairie as seeds are easily caught in their fur and cloven hooves as they move through the landscape (Rosas et al., 2008).

Buffalo are one of the most vital players contributing to the ecosystem resilience of the Northern Great Plains. The plants that are spread through the buffalo migrations and those that thrive in the microhabitats of their wallows are all examples of the symbiotic relationships found in the Great Plains' ecosystem (Kolipinski et al., 2014). TEK in the Northern Great Plains is shaped around the boundless migration of the buffalo and the people. It is shaped by human-lit fires that cleared shrublands, forests and introduced necessary nutrients to the soil (Johnston, 2022).

Buffalo not only play a keystone role in the health of prairie ecosystem but also in shaping the distinct cultures that live in the Northern Great Plains (Ritterbush, 2002). Before European contact, buffalo roamed in the tens of millions through the North American Great Plains. Their abundance shaped creation stories, languages, ceremonies, and cultures who grew in deepest relationship with them and all that they provide (Kolipinski et al., 2014). The seasonal migration of the buffalo determined the annual activities for both sedentary and mobile communities,

influencing their food systems through culturally-distinct cuisines and annual activities. Buffalo migrations shaped architecture like tipis, which are incredibly adaptable structures with distinctions for each individual nation who lived in them (Orey, 2000). Tipis can be put up in an hour, taken down in an hour, provide ventilation in the summer and insulation in the winter (Orey, 2000). A relationship with buffalo also shaped clothing like buffalo robes, and ceremonies (Grinnell, 1901; Kolipinski et al., 2014). They shaped peoples' conceptualization of time, including lunar calendars with moons named for the food-system activity that happened under it (Johnston, 2022). For nomadic cultures like the Cheyenne or Lakota peoples, the movement of the buffalo determined the timing and location of seasonal activities. More sedentary and agrarian cultures like the Hidatsa, Mandan, Pawnee, Kansa, and Oto people incorporated a seasonal buffalo hunt as the buffalo passed through (Ritterbush, 2002) or traded with other tribes for tanned hides, robes, and other useful materials (Wilson, 1917). The balance of ecosystems was maintained with human intervention, and the creation of culture was shaped by living in relationship with the plants, animals, waters, and place.

The Interruption of Traditional Ecological Knowledge in the US

The role buffalo played in the prairie ecosystem of the Great Plains was interrupted when they were culled to the brink of extinction in the late 1800s (Lueck, 2002). It is estimated that in 1800, the buffalo population sat around 20 million, of which, by 1890, only 1000 remained (Lueck, 2002). This dramatic loss was driven both by high-demand for their hides and by railroad expansion which affected their migrations, broke large herds into smaller ones, and created access for hunting parties to harvest them (Lueck, 2002). This marked the loss of a keystone species in the ecosystem and in the cultural and food systems of the many nations who evolved alongside buffalo.

Running parallel to the story of the buffalo, is the story of the peoples who lived alongside them for millennia (Taschereau Mamers, 2020). As railroads tore through the landscape and

divided herds, and as buffalo were being hunted to the brink of extinction, the Indigenous Peoples of the Great Plains were simultaneously facing disease, war, and political definition around their legal identity that would determine the future of their relationship with land (Lueck, 2002; Ruppel, 2008). Below, I outline key moments in US history that provide context for the legal boundaries surrounding Indigenous Peoples in the US today, how Indigenous Peoples can practice and hand down traditional knowledge, and limits on cultural continuance.

Terra Nullius

The colonial perception around Indigenous Peoples began with the legal concept found in the doctrine of discovery. This doctrine claimed that upon arriving in a new land, the British Crown could claim British colonial law if the “discovered” lands were free of human inhabitants. As settler-colonialism expanded in the US, the definition of an inhabitant was conveniently twisted to only include Christians, as non-Christians were viewed as “infidel” and unworthy of being a *human* inhabitant; and so, English claim to the US was done under the doctrine of discovery, and a view of Indigenous Peoples in the Americas as non-humans laid the foundation for the future of federal-Indian law and stereotype of Indigenous Peoples as animals, savages, and barbarians (Ruppel, 2008).

The Marshall Trilogy (1828 -1832)

The Marshall Trilogy encompassed three important Supreme Court cases – *Johnson v. M’Intosh* (1823), *Cherokee Nation v. Georgia* (1831), and *Worcester v. Georgia* (1832) – that defined four pillars of federal-Indian law (Ruppel, 2008). Those were:

- (1) that title to Indian land is in the federal government, though right of occupancy (beneficial or use title inheres in the tribes); (2) that the relationship between the

tribes and the federal government is exclusive, meaning that states should have no authority in Indian country; (3) that tribes are “foreign” nations but are some kind of preexisting sovereigns, thus endowed with the inherent capacity of self-government; and (4) that the federal government is ascendent in the Indian tribes’ affairs with non-Indians (Ruppel, 2008, p. 39).

Together, these rulings established the Federal Trust Doctrine, which recognized Indigenous Peoples as sovereign for the first time and held the US government accountable to protect tribal self-governance, culture, assets, and resources, in exchange for the cessation of millions of acres of tribal land to the US Government (Chiarenza, 2013). In *Cherokee Nation v. Georgia*, Marshall stated that the tribal “relation to the United States resembles that of a ward to his guardian.” This statement initiated a new social and legal view of Indigenous Peoples as legally incompetent, or children needing the assistance of the US government to care for themselves (Ruppel, 2008). This perception of Indian helplessness influenced the next set of laws around American-Indian rights and land ownership; and became more evident in the next era characterized by the Dawes Act (Ruppel, 2008).

The Dawes Act and General Allotment (1876-1877)

The Dawes (General Allotment) Act displayed this belief in action as it broke Indian land into allotments of 20, 80, or 160 acres that were allocated to individual owners. Allotted lands were held in trust by the federal government for a period of 25 years to give Indigenous People time to “adjust to the responsibilities of private land ownership” (Ruppel, 2008, p. 27). During this time, Indigenous Peoples only hold use title to the land; this puts extreme pressure on people to adopt individual agricultural practices which impact traditional hunting, gathering, and fishing practices and attempt to destroy the communal culture of many Indigenous Peoples as people are both separated from their community, and have less time for a traditional food-systems practices (Ruppel, 2008).

Allotment is recognized by historians as an act that replaced tribal culture with white civilization as it broke families, communities, and tribal systems of inheritance and property apart. It applied private ownership to dispersed parcels of land (Ruppel, 2008). The initial 25-year trust period for allotted lands was extended indefinitely under President Theodore Roosevelt. This imposition of federal trusteeship over privately owned Indigenous land undermined the status of tribes as sovereign nations as it created a system of land-tenure based on the individual as opposed to the tribe (Ruppel, 2008). Allotment also served as the foundation of the widespread problem today of *fractionation*² (Chiarenza, 2013). Fractionation refers to the inheritance of allotted Indigenous lands and functions as such: after the individual who holds an allotted parcel dies, each generation of heirs receives equal interest in the land title (Chiarenza, 2013). However, the land is not physically partitioned among heirs; rather, interests in the same plot of land are owned by hundreds or even thousands in some cases. This has generated many demanding situations in and across reservations (Chiarenza, 2013; Ruppel, 2008).

The Boarding School Era (1600 – 1930s)

Perhaps, like the Trail of Tears or Wounded Knee, the boarding school as an institution is symbolic of American colonialism at its most genocidal (Child, 2018, p. 38).

Possibly the largest interruption to the passage of TEK and cultural continuity was that of the boarding schools. Assimilation boarding schools began as early as 1600 with “praying towns” which sought to Christianize Indigenous children by separating them from their communities and giving them a “civilized” education (Smith, 2004). This concept gained widespread adoption under

² Fractionation differs from checkerboarding in the sense that fractionation divides a private plot of land between heirs indefinitely, making the ownership and inheritance confusing and complex. Checkerboarding refers to all land within a reservation’s boundaries that is divided by Indigenous owned and outsider owned (typically white-owned) (Chiarenza, 2013).

President Grant with the Peace Policy in 1869-1870, which sought to turn the reservations over to Christian denominations (Smith, 2004).

Created out of a desire for Indian assimilation and lands, the boarding schools are remembered as genocidal and an “Aboriginal holocaust” (Child, 2018). Children and adolescents who were taken to the boarding schools were subject to sexual, physical, and mental abuse, and thousands died while in attendance at the boarding schools (Child, 2018). The social problems Indigenous Peoples face today – alcoholism, unemployment, low test scores, high drop-out rates, and family violence, are attended by mass cultural losses as a consequence of the boarding schools (Child, 2018). The trauma inflicted upon Indigenous children is married to the legacy of immiseration and suffering that tribal communities face today (Child, 2018).

Implications for TEK

The Doctrine of Discovery, the Marshall Trilogy, the Dawes Act, and boarding schools broke apart Indigenous communities, lands, cultures, and identities. They mark moments where Indigenous worldview, practice, epistemology, and TEK were dismantled. The eradication of the buffalo was one of many examples of a people’s traditional knowledge and food system being taken and replaced with white ones (in every sense of the word; color and race) in an attempt at assimilation into farmers under a Euro-Christian model (Falcon Ramaker, 2021). The eradication of the buffalo stripped power from Indigenous Peoples both legally and in a physical sense through diet, land-plots that are ever shrinking, and knitwork fence lines that determine the route a buffalo can travel.

Experiential Learning Programs in Agriculture

Across the globe, the urgency to empower farmers, restore local agroecosystem knowledge, and alleviate poverty in rural communities is apparent as the consequences of climate change intensify (Tribaldos et al., 2022). Central to this effort, is expanding the application of place-specific agricultural knowledge in rural communities, as a means of empowering peasants and increasing their quality of life (Tribaldos et al., 2022). The following are examples of programs from around the globe that center on distinct methods of disseminating knowledge in rural communities.

Training and Visit

The Training and Visit (T&V) system of agricultural education for adult farmers overseas was designed to transfer technology recommended by researchers to farmers by facilitating weekly meetings with select farmers so that they can disseminate knowledge in their respective communities (Abdullah et al., 2014). While the T&V system is considered effective, it is criticized for its emphasis on repeated communication of a message rather than focusing on farmers' comprehension and engagement (Abdullah et al., 2014). T&V is a top-down approach that does not center local-knowledge, rather an outsiders' idea of what could improve rural livelihoods.

Farmer-to-Farmer Method

Nakano et al. (2018) describe the Farmer-to-Farmer (FTF) method, which focuses on bringing modern technologies in agriculture to developing countries to increase their production

with principles rooted in the Green Revolution. To disseminate knowledge among farmers in the FTF model, agricultural educators train a few select farmers at a local training center before the crop season begins. These trained individuals are referred to as key farmers and function as conduits of knowledge, redistributing information through their social networks. The intent is to reach several people by having the key farmers disseminate information and technology through their communities. During the cropping season, the trained farmers along with a village extension officer, hold training sessions at a demonstration plot for other farmers. These farmers are referred to as intermediate farmers, and all others who did not receive training are referred to as ordinary farmers. One study on the FTF model found that farmers were more likely to adopt recent technologies when they were taught by a relative or neighbor, rather than an unfamiliar facilitator. It was also found that as information spread, farmers' yield increased (Nakano et al., 2018). While this method of knowledge distribution among agriculturalists is more centered on farmer engagement and peer-to-peer knowledge sharing, there is still a hierarchy around outsider-knowledge coming in, as well as between individuals classified as key farmers, intermediate farmers, and ordinary farmers.

Farmer Field Schools

In the Farmer Field Schools (FFS) model, a facilitator meets with a group of local farmers for up to a week and teach using discovery-based learning methods, group experiments and agroecosystem analysis (Davis et al., 2012). This is often in the form of an intensive workshop on a specific challenge or technology like integrated pest-management (Waddington et al., 2014). FFS are designed to help farmers experience technology in a learning-by-doing format, reflect critically, and develop analytical skills for their local conditions. This program is distinct in that it focuses on facilitation and hands-on learning rather than top-down instruction, and shifts away from how extension is traditionally taught (Davis et al., 2012). Originating in Indonesia, FFS programs are now present in ninety countries (Waddington et al., 2014). In a study from Pakistan

comparing farmers' retention of knowledge in a T&V to an FFS extension approach, farmers ranked FFS higher (Abdullah et al., 2014). A parallel study comparing T&V to an FFS approach in Nigeria predicted that the FFS would replace the T&V models of extension as the learner-centered approach emphasizes problem-solving and discovery-based learning that can be applied in real-life settings (Oyegbami, 2024). By facilitating discovery-based learning, the FFS model is a “bottom-up” participatory approach rather than a top-down one where a facilitator treats farmers as students (Waddington et al., 2014). FFS, however, still prioritize outside-knowledge coming to communities, rather than local knowledge.

Peasant-Led Knowledge Networks

While both FFS and FTF methods of technology and knowledge distribution present new and effective ways agricultural educators can approach collaborating with rural communities globally, they are centered on external expertise. This inadvertently creates a power hierarchy between extension as the expert coming in, and the peasant as the one who needs to be taught. In contrast to this, the most effective method for agricultural knowledge-dissemination, one that provides equal footing for peasants and values their knowledge as vital in solving place-specific problems, is the Campesino-a-Campesino program found throughout Central America (Bernal et al., 2023).

Campesino-a-Campesino Knowledge Exchange

In the 1970s, Maya Peasant farmers in Guatemala, with the support of progressive non-government organizations, ignited an international movement for agroecosystem improvement called *Campesino a Campesino* (Peasant to Peasant). This grassroots initiative grew through

campesinos sharing innovative agricultural practices that contributed to water conservation and soil health with their peers through farmer-led workshops (Holt-Giménez et al., 2010). The new methods directly addressed common problems *campesinos* in Nicaragua faced; depleted soils and overuse of water alongside eroding traditional knowledge (Holt-Giménez, 2006). For example, the *campesinos* began teaching one another how to amend their soil by adding organic matter back into their soil and practiced conservative irrigation techniques. These two simple changes led to an increase in yield per area by as much as 100-400 percent, and quickly gained attention among *campesinos* across Guatemala (Holt-Giménez et al., 2010). What fueled the excitement was not only the surge in yield, but also the growing realization that *campesinos'* agricultural knowledge is not inferior (Holt-Giménez, 2006). Since tangible improvements in yield and ecosystem resilience were observed, *campesinos* gained confidence in their knowledge, and practices. What was initially shared as contemporary methods in composting and soil water conservation, expanded rapidly into a library of sustainable technologies that encompassed both traditional and contemporary knowledge. As *campesinos* introduced technologies like integrated pest management, biological weed control, seed selection, green manure, reforestation, and traditional agrobiodiversity management, the CAC method of knowledge sharing had a powerful legacy in land-stewardship (Holt-Giménez, 2006).

The social perceptions around *campesinos* that came from this movement were deeply rooted in solidarity; the success did not come from external sources, but from peers who shared knowledge and life-experience in the same social and economic status (Holt-Giménez et al., 2010). *Campesinos* began rejecting the prescriptions given to them ever since the Green Revolution, which centered on an external agricultural “expert” (usually a white extension officer) encouraging a departure from Indigenous farming methods to plant a monoculture alongside the heavy use of fertilizers and pesticides (Bernal et al., 2023). *Campesinos* realized that by determining how their agricultural practice was performed, they created higher yield, protected biodiversity, and contributed to ecosystem resilience (Holt-Giménez et al., 2010). They saw firsthand that they could farm without using agrochemicals, depleting resources, or developing financial dependence on external sources the way the Green Revolution and global trade systems had pressured them to do (Bernal et al., 2023).

Word spread quickly among *campesinos*, and the grassroots movement gained the name *Campesino-a-Campesino*, growing rapidly as *campesinos* began visiting and hosting their peers to share techniques and show each other the benefits firsthand (Holt-Giménez, 2006). This peer-to-peer exchange of knowledge fostered powerful social dynamics that transformed food systems in Nicaragua following the Sandinista Revolution (1960s-1990s) and in Cuba in the 1990s, after the fall of the Soviet Union in what is known in Cuban history as the Special Period (Rosset & Val, 2019). They adopted the CAC method of peer-to-peer knowledge transfer on a national level and saw profound and positive impact towards their internal production and empowerment³ (Rosset et al., 2011).

Because CAC is centered on knowledge exchange between neighbors and *campesinos* in a specific place, it inadvertently empowers other types of local knowledge (Rosset & Val, 2019). It is in this way adaptive and applicable to the unique challenges in any given place and fosters resilience. In Cuba, CAC led to the creation of a national grassroots agroecology movement towards a more sustainable food and social system being adopted at a national level (Holt-Giménez, 2006). Though it was through dire circumstances that they adapted, Cuba provided an example of a sustainable food system on a nation-wide scale (Rosset & Val, 2019). The widespread adoption of agroecosystem practices was made possible by using the CAC method of knowledge exchange.

CAC is both mobilizing and empowering to farmers as it prioritizes sharing Campesino knowledge and expertise in a way they can determine (Bernal et al., 2023). The CAC methodology as it was adopted and distributed by the international movement, La Vía Campesina (LVC) that

³ After the fall of the Soviet Union, Cuba was unable to import sufficient food, machinery, or petroleum to sustain their economy or agricultural production. In the 1980s, before the Soviet Union collapsed and under extreme political pressure from outside countries, Cuba relied on global trade and sugar exports to meet its economic and basic needs (Bernal et al., 2023). In 1989, 30% of Cuba's agricultural land was used to grow sugarcane for export while 57% of all food in Cuba was imported. This reliance on external trade made Cuba particularly vulnerable and consequently, when the collapse of the socialist bloc in Europe happened that same year, and the US tightened their trade embargo on Cuba, Cuba abruptly lost 85% of its trade relations (Rosset & Val, 2019). In a state of crisis, Cuba turned towards sustainable agroecological farm management systems to feed its population and survive. In 1996, the Cuban National Association of Small Farmers (ANAP) sought innovative solutions to bring the country back into mass-scale production. After hosting a meeting with CAC delegates from Mexico and Central America, the ANAP decided to try a small-scale trial of the CAC method (Rosset & Val, 2019). The CAC method gained traction rapidly in Cuba as it aligned with a Cuban worldview of food being a social public good or a common, rather than a commodity (Rosset & Val, 2019).

unites “millions of peasants, landless workers, indigenous people, pastoralists, fishers, migrant farmworkers, small and medium-size farmers, rural women, and peasant youth from around the world” to defend peasant agriculture for food sovereignty (La Vía Campesina, 2025). LVC’s adoption of CAC as a method for fostering knowledge-sharing stands as a clear example of the power of peer-to-peer knowledge transfer and *campesino* self-determination as a way of creating tangible change towards agroecology and sustainability in the food system (Bernal et al., 2023).

CHAPTER THREE

METHODOLOGY

Research is imbued with a power hierarchy, with the researcher having final control over the research design, data collection, and interpretation. The choice of methods is a solid indicator of the power dynamic at work. The more structured the method, the more control the researcher maintains (Kovach, 2021, p. 125).

Approach

I conducted an intrinsic case study (Creswell & Poth, 2016) to gain insight into the transfer of place-based knowledge among Indigenous agriculturalists in the Buffalo Nations Region of the Northern Great Plains of the US. I aimed to comprehend the transfer of food-related cultural and practical knowledge, skills, and values in the context of an exchange program that facilitated the visit of a Steward on the land of a fellow Steward. To understand what knowledge was transferred and how, I was present during the exchange and actively participated in host-lead activities shadowing the exchange, facilitating conversations among Stewards, and recording data. Data were collected through notes taken during conversations and while shadowing the Stewards during fieldwork, as well as during storytelling over a shared meal.

The methods of data collection were chosen to align with Indigenous values in an attempt to decolonize this research (Ranalda & Tsosie, 2022). Within Western science, there exist imperialist structures and paradigms that are part of a legacy of *othering* Indigenous Peoples, their worldviews, and cultures (Smith, 2022). This legacy of racial and cultural exclusion, misrepresentation, and falsification can be perpetuated in qualitative research by the inherent power hierarchy that exists between researcher and participant (Kovach, 2021). As the researcher, I hold power over the research design, data collection, and dissemination of the results (Kovach, 2021). Therefore, it was of the utmost importance that I reflected Stewards' experience in a way

that felt truthful to them. To achieve this, I applied methods that held me accountable to having fidelity to the participants' and communities above all else (Kovach, 2021).

To align the study with Indigenous values, I chose a holographic epistemology from Māori scholar Manulani Aluli Meyer (2020). Epistemology takes on the notion that knowledge is known through the subjective experiences of people (Creswell & Poth, 2016). In essence, epistemology is how we know what we know. Meyer (2020) uses the analogy of a hologram with three beams of light uniting into one to illustrate a cultural epistemology that holds the life-energy of our understanding of how we know. Each beam represents a unique way people experience the world: we understand life through the experience of the body (objective), the mind (subjective), and the spirit (transspatial, cultural, non-physical). It is through the synthesis of body, mind, and spirit that we find direction or create meaning (Meyer, 2020). These strands of experience, braided into the hologram, guided each step of my research process. They were woven into the understanding I derived on how knowledge is shared between Indigenous land-Stewards when they meet through a work exchange.

Study Site

Indigenous ways of knowing cannot be universalized, since they arise from distinct cultures, nations, and peoples' experiences in their home-place through generational time (Smith, 2022). In the US, all First Nations peoples faced eras of horrors under colonization since the time the first settlers arrived (Brown-Rice, 2013). While the trauma following the genocide of Indigenous Peoples in the US has been felt by all tribes, the ways it took shape were different for each community (Brown-Rice, 2013). Recognizing the vast cultural diversity alongside the context of diverse backgrounds is essential to gaining an accurate understanding of peoples' experiences (Smith, 2022).

This study was intertribal and intercultural. It took place in the bio-cultural region named the US Buffalo Nations (Dower, 2022). The US Buffalo Nations refers to the area in the Northern Great Plains and Rocky Mountains of the US, where the American bison, or colloquially, buffalo, existed for millennia as the keystone species in Indigenous cultures, stories, migrations, art, architecture, and food systems (Dower, 2022). However, between the years 1870 and 1884, the near extermination of the buffalo interrupted this way of life (Lueck, 2002). In 1800, it is estimated that some 25-30 million buffalo roamed the Plains. By 1890, that number dwindled to less than 1,000 (Lueck, 2002). While they were not culled into extinction, the impact of their loss, both in the numbers they once held and of their migration is still being studied (Knapp et al., 1999). The absence of the buffalo is noted in the health of the land that longs to be grazed in a seasonal rotation (Geremia et al., 2019); as well as in the hearts of those whose cultures, worldviews, languages, histories, spiritualities and cuisines were shaped by a relationship with buffalo for millennia.

Timeline

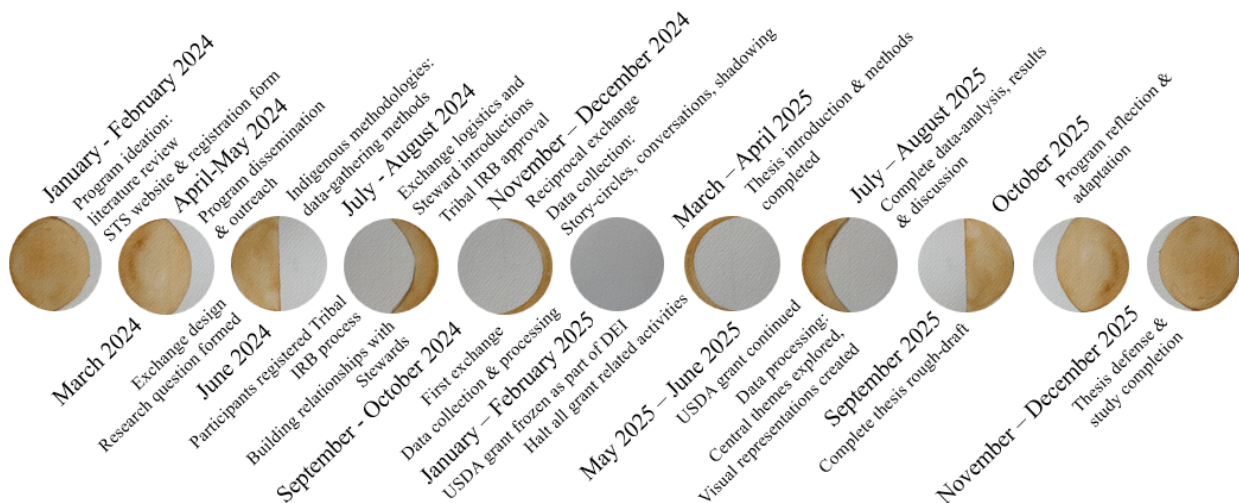


Figure 2: Project Timeline 2024-2025. Generated by the author.

Figure 2 conveys a timeline of the preliminary project creation, dissemination, and implementation in its first two years of existence.

Context and Sampling

The STS program is part of a USDA grant project titled “*Calling People Back to the Land – Indigenous Traditional Knowledge Network & Curriculum for the Next Generation of Indigenous Food Sovereignty Workforce*,” conducted by students, researchers, and activists with the Nueta Hidatsa Sahnish College (NHSC) in New Town, ND, in partnership with Montana State University (MSU). The overarching goals of the project were to create career pathways, foster experiential learning opportunities, and provide scholarship for Indigenous students and communities with a focus on food systems. STS aligns with these goals by aiming to connect Indigenous People involved in agriculture cross-culturally, geographically, over production systems, and generations. It seeks to provide a way for them to both learn and teach in a peer mentorship format.

We selected participating Stewards through purposive sampling, ensuring they met specific criteria: (1) they were required to be agricultural producers or food processors, with (2) affiliations to one or more Native Nation(s) in the study area, and (3) to have the capacity to host a fellow Steward for two days on their land. To reach participants, I created a dissemination platform that included a link to a registration form. The registration form received human subject research exemption from Montana State University’s Institutional Review Board (protocol: 2024-1446) before it was distributed publicly. I also worked closely with the IRBs representing the Sisseton Wahpeton Oyate (LRRB# 2024/07/2) and Standing Rock Sioux (SBC-FY42-25-5) communities. I emailed the website link to three hundred institutions, including extension offices, tribal colleges, nonprofits, and other groups involved in Indigenous food systems across the states of Montana, South Dakota, North Dakota, Minnesota, Idaho, and Wyoming. After four months of outreach, I

complementarily applied a word-of-mouth strategy to further disseminate the program: I attended conferences and food sovereignty meetings throughout the Buffalo Nations.

Stewards were considered eligible after completing the registration form which included a questionnaire with basic contact information and details about what type of food production they were involved in. This information helped me generate potential partners by identifying individuals with similar professional experience. For example, I prioritized pairing a buffalo rancher with another buffalo rancher. There was no limit set on the number of individuals who could register for the program. According to a USDA census, Native Peoples make up less than one percent of total agriculturalists in each of the states within the Buffalo Nations (USDA, 2022). It should be noted that this census data only includes commercial farms and ranches where the land is owned by the operator and is limited to only one operator per business. Therefore, the actual number of potential Stewards in the area is higher. In this study, I present the outcomes of the very first STS exchange in 2024. Table 1 conveys basic demographic information for the two Stewards who participated in this exchange.

Table 1: Participant Demographics.

PSEUDONYM	AGE GROUP	GENDER	LOCATION BY STATE	NATIVE NATION(S)	TYPE OF FOOD PRODUCTION
STEWARD 1	Over 50	Female	North Dakota	Sisseton Wahpeton Oyate	Gatherer, gardener, plant-medicine maker, and berry-farmer
STEWARD 2	Under 50	Female	North Dakota & South Dakota	Standing Rock Sioux	Buffalo rancher, involved in food distribution for the tribe

Work exchanges

Before the work exchanges, the hosting and visiting Stewards co-developed an agenda for two days, deciding on what farm management activities the visiting Steward could collaborate on. The hosting Steward agreed to provide mentorship, while the visitor agreed to adopt a learner mindset and participate in work activities. In the evenings during the exchange, Stewards were encouraged to meet over a shared meal. This time was used to reflect on the day's activities, facilitate the development of a network among diverse Stewards, and foster a relationship between Stewards and myself as the researcher.

On each exchange, I viewed myself as a learner and active follower of the knowledge and expertise of both Stewards with the intention of co-producing knowledge. During the day, I participated in field tasks alongside the visiting Steward as a shadow (Kovach, 2021). I worked, conversed, and consciously made observations on the situation, using the research question and the holographic framework (Meyer, 2020) to guide my observations. I focused my observations by returning to the question on *how* knowledge was being shared: through gesture, spoken words, dreams, and learning more about the setting. At times, when tasks required me to be fully firsthand (holding a gate closed in a corral with a 3,000lb buffalo bull in the shoot waiting to be vaccinated, for example), I made a mental marker to remember an observation. I used techniques like repetition, imaginary association, creating a melody in my head, and focusing on my own emotional and physical experience to remember the observation as clearly as I could. After the respective activity, I would audio record these as personal reflections.

Data Collection

During the two-day work exchanges, I was constantly present to collect data. Three forms of data were collected from this experience. I generated and listened to, (1) facilitated intentional

story-sharing circles, (2) fostered conversations, and (3) adopted a learner mindset to shadow the exchanges. Margaret Kovach's *Indigenous Methodologies* (2021) informed these methods of data collection. Each of these methods were chosen to establish accuracy and depth in my understanding of the participant's experiences (Creswell & Poth, 2016).

Story-Sharing Circles

Story-sharing circles were chosen as a data gathering method because they acknowledge cultural worldview, and a value of respect is woven into the process (Kovach, 2021; Ranalda & Tsosie, 2022). Kovach (2021, p. 124) explains that this method allows participants to share their stories in a way that they can direct as it creates a comfortable environment over shared food and after a prayer or meditative acknowledgement of all people in the circle, "including those ancestors who sit with us".

In the evenings, we set aside time to foster intentional story-sharing circles over a shared meal (Kovach, 2021). As a group, we collectively set our intentions towards a slower pace and to listening. As dinner was served, I invited story-sharing by asking a predefined question. The questions was co-written with Steward's input on what they wanted to know or share with a peer. The stories had an arch going from introductions to reflections. Then, we each shared as a story came to our minds. When each Steward was speaking, I took on the role of the listener and learner without interrupting the storyteller. Stewards granted me the same respect when I shared my stories as well. Story sharing was recorded with audio, and participants' consent was established both verbally and through a written consent form before recordings were taken. I chose to audio-record story-sharing circles so that I could conduct myself in a respectful way during the conversation by listening without the interruption of taking notes or the distraction of thinking of something to say. It was also so I could transcribe them as accurately as possible without changing the content from the words of the original speaker when I revisited the stories in the months following the exchange.

Over the course of the exchanges, I adapted the questions to lead into story-sharing circles. The first night of each exchange was dedicated to introductions and a deeper understanding of how people came to their work. I asked, “can you please share a story about how you became involved in your practice with food, like ranching or cultivation or gathering? And alongside that, can you please tell me a story about what brought you to where you are today?” The second night was dedicated to understanding “where do you get your medicine from?” This was a question one of the participants said was important to her after a conversation where she shared how she came to know the medicines some plants offer through messages in her dreams. The final night was oriented towards reflection and the value of the exchange experience. I asked, “will you please tell me a story that comes to mind when you reflect on this experience?” In this way, there was a beginning, middle, and end to our shared time together.

Conversations

Conversations that took place throughout the exchange emerged naturally. If needed, to initiate a conversation on a specific topic, I asked an open-ended question and then I listened and allowed the conversation to flow with occasional follow-up questions.

To record conversations, I kept a journal with field notes (Wolfinger, 2002). Field notes were recorded during the day’s work activities to (1) refresh my memory accurately (Wolfinger, 2002), and (2) understand how my relationship with participants evolved over the days of the exchange. To align my field notes with my theoretical framework, I captured both direct quotes from participants and my reflections or thoughts that arose from those quotes (Meyer, 2020; Wolfinger, 2002). The right page of my notebook was dedicated to direct quotes, and the left page was dedicated to my thoughts, emotions, or reflections tied to those quotes, often with an arrow pointing at the quote. Quotes were only recorded with participants’ knowledge and consent. I regularly sought participants’ consent by asking, *is it alright if I write that down?* Or, *would you like to see what I have written?* This approach allowed participants to speak freely without being

directed towards a predetermined answer, as a survey or interview might (Kovach, 2021). When deciding how to show up in the conversation, I intentionally regarded myself as a student: I did not seek to *explain* the phenomena of how knowledge is shared; rather, I *explored* an answer to that question by listening and taking notes. At times, I chose not to audio-record conversations because it felt like a breach of trust in my relationship with Stewards to do so. If a conversation had a lasting impact on me, I audio-recorded or wrote down my reflections on that conversation, both during and after the exchange.

Shadowing

Shadowing was chosen as a data-gathering method as it mitigates the preexisting power dynamic between researcher and participant by holding the participant in the role of teacher and the researcher in the role of learner (Kovach, 2021). I actively collaborated (shadowed) on all field tasks, working alongside Stewards. I recorded observations I made through shadowing (Kovach, 2021). I took on the mindset that I was a learner to the knowledge, stories, and expertise Stewards generously chose to share with me and paid careful attention to what was happening in the setting around me. I was conscious of my experience with the three layers of experience, body, mind, and spirit (Meyer, 2020). Through my body/objective experience, I took note of things I saw, heard, felt, or tasted. Through my mind, I reflected on those sensations, and through spirit, I connected through more magical/intuitive or even relational experience.

Similar to the conversations, observations were recorded with field notes (Wolfinger, 2002). This time, however, I separated observations made through my five senses or my physical experience and my reflections and emotions or my mind experience as well as a transspatial/spiritual experience (Meyer, 2020). I observed setting, interaction, gesture, and other components that contributed to how knowledge was shared beyond verbal expression.

Data Analysis

Data were collected in the form of (1) audio-recorded story-sharing circles, (2) conversations recorded with field notes, and (3) observations made through shadowing, recorded with field notes. Throughout my analysis, I viewed all themes that emerged through the central research question and gained of understanding the following three categories: what knowledge is shared, how knowledge is shared, and what limits the exchange of knowledge. I audio-recorded story sharing circles to have access to direct quotes and to maintain the original story in the words of the storyteller as I analyzed (Kovach, 2021; Simonds & Christopher, 2013). I began with the story-sharing circles as listening to the participants' voices would evoke strong memories of the experience, which allowed me to observe my own process of understanding through emotions and memories that presented themselves in my mind and body, grounding me in the three pillars of the hologram (Meyer, 2020). Analyzing the data provided a moment for me to braid the three pillars of the holographic framework (Meyer, 2020) as my experience, while reading, unified my objective (body), my subjective (mind), and my transspatial (mystic-knowing) experience; and I relived the stories anew.

Qualitative data analysis in Western research is often at odds with Indigenous cultural practices and worldviews. In this study, the analysis of the story-sharing circles presented a challenge, since one of the most common and accurate ways of analyzing a narrative is through coding (Creswell & Poth, 2016). Coding, however, breaks apart a story, which inadvertently breaks down the relationship between the story-teller and their audience, as well as the relationships between the different parts of the story to each other (Simonds & Christopher, 2013). A description of the cultural incongruence between Indigenous cultures and Western science is found in the concluding chapter of *Research is Ceremony*:

Analyses from a western perspective break everything down to look at it. So, you are breaking it down into its smallest pieces and then looking at those small pieces. And if we are saying that an Indigenous methodology includes all of these

relationships, if you are breaking things down into their smallest pieces, you are destroying all the relationships around it. So an Indigenous style of analysis has to look at all those relations as a whole instead of breaking it down (Wilson, 2020, p. 119).

I chose to marry both Western and Indigenous ways of analyzing a story by coding the conversation to find a central theme. Then, I returned to the original story with my codes or a new lens. After reading the stories, I painted, to create visual symbols to represent the central themes and their original stories.

Story-Sharing Circles

Analyzing the story-sharing circles presented me with a large opportunity to practice decolonizing methodologies. I wanted the analysis to honor the data-gathering methods in its value of respect and prioritizing participants' voices, knowledge, and expertise over my understanding of what was being said. In deciding how to analyze a story, it was of the utmost importance to me that the story maintained its original form; as it was spoken by the teller in the moment (Simonds & Christopher, 2013; Yunkaporta, 2019). It came down to a choice between coding the data and performing a narrative analysis (Creswell & Poth, 2016). I chose to code after reading an article by Simonds and Christopher (2013) where they explained that narrative analysis still orients the focus on the researcher's understanding rather than the participant's. They suggested a combination of coding and a conceptual model alongside the codes that provide the reader with the context needed to understand the storyteller.

Coding a story, breaks apart the data (in this case, a story) to find central themes. For the recordings of the story-sharing circles, artificial intelligence was used to help in transcribing them. Microsoft Word's (Microsoft Word for Microsoft 365 MSO, Version 2501) transcribe feature was used to transcribe each of the recordings (Ose, 2016). I transcribed stories in their chronological order. After the initial transcription, I listened to the recordings as I read the stories. I did this three

times, then read the transcriptions several times without the accompanying audio. I chose this technique of data processing from Kovach (2021) as she describes the process of meaning making the researcher have while transcribing. She encourages experiencing meaning making on multiple levels through repeated interaction with the transcript. I did this in chronological order since it gave me a glimpse into the relationship I built with participants over time, which was one of the guiding values in my axiology (Ranalda & Tsosie, 2022).

After the first four times reading the transcriptions, I began a direct interpretation (Creswell & Poth, 2016) of the data. This is “a process of pulling the data apart and putting them back together in more meaningful ways” (Creswell & Poth, 2016, p. 278). I identified and synthesized the underlying meaning of the content, aiming to express it with clarity, accuracy, and respect for the original context. Then, I wrote a new statement down based on the respective content and repeated this process with each transcript several times. After reviewing the key descriptions, recurrent themes began to reveal themselves through patterns (Creswell & Poth, 2016). I would see repeated messages and began categorizing them into themes. For example, whenever I saw a statement on the *interruption* or *severance* of culture and Indigenous ways of knowing that followed the Boarding School Era, I would group it in this specific theme.

To both meet the expectations of Western qualitative data analysis, while maintaining respect for the storyteller and cultural worldview of the communities I worked with, I interpreted codes and themes I found, independently and in the context of the original story/conversation. I then created a visual aid to model each story (Yunkaporta, 2019). This was to maintain the relationships between different parts of the story as well as the relationship of the storyteller to the story (Simonds & Christopher, 2013).

Conversations

For conversations, I analyzed my field notes in order to identify what knowledge was passed during the exchanges. My field notes were dedicated to Stewards’ direct quotes, and my

own reflections or new understandings tied to those quotes (Meyer, 2020; Wolfinger, 2002). While reading my reflections helped me remember my thoughts, emotions, and revelations in the moment the conversation took place, I analyzed the direct quotes as data. This analysis was similar to the transcription process, however, lacked the step of listening to participants' voices. Consequently, I chose to analyze field notes directly after listening to transcriptions. I proceeded chronologically (Wolfinger, 2002). While reading the quotes, I extracted the core themes reflected in the quotes from repetitive readings (Creswell & Poth, 2016). After I extracted the themes, I contrasted them with the original conversation and identified one representative quotation for each theme. In addition, I developed a visual symbol to represent the key themes (Simonds & Christopher, 2013; Yunkaporta, 2019). Finally, I viewed all identified themes through the central research question in the following three categories: what knowledge is shared, how knowledge is shared, and what limits the exchange of knowledge.

Shadowing

I analyzed observations in a comparable way to the analysis of conversations, but my focus was on understanding the setting. The setting was extremely important to developing an accurate understanding of the case (Creswell & Poth, 2016). Shadowing allowed me to learn more about the setting as well as the subtle ways people communicate, such as through body language, emotion, or by allowing others to make mistakes.

To analyze my notes from shadowing the exchanges, I read them several times, pulling them apart into their most accurate key messages (Creswell & Poth, 2016). I then compared these to the data from the story sharing circles and conversations as well as the original observation to inform my findings (Simonds & Christopher, 2013). This generated a detailed description of the setting and the subtle ways people communicate beyond verbal communication to explore an answer to the question on *how* knowledge is being shared between Stewards. While shadowing observations fit into the themes that were found from analyzing conversation and story, they more

often informed the themes. For example, the difficulty people had in accessing their family history was tied to the theme of the interruption of knowledge flow that followed the Boarding School Era.

Positionality

The realization that I have lived most of my life among places I did not understand struck me the first time I drank Cattail (*Typha latifolia*) tea. Cattails have grown in every place I have lived, yet it never crossed my mind that one could eat them (Sherman, 2017), weave their leaves, use their sap as an antiseptic for cuts, stuff diapers from the soft bursting seedpod (Snell, 2006), or play a role in stewarding their growth (Kimmerer, 2013). Until I gained a curiosity for foraging, I simply did not see the abundance around me. A deep curiosity was ignited in me, and I sought out knowledge on the ways people have played a role in caring for or stewarding the plants around me for millennia. My lived experience working in agriculture and my emotional connection to food and place led me to the path of studying Indigenous food systems.

When I was 20 years old, I moved to the Nambe Pueblo in northern New Mexico, a small but federally recognized reservation. Although I only lived there a brief time, I gained an awareness of my privilege as a woman of European descent in the US. I witnessed firsthand the depth of trauma that accompanies generations of carefully designed violence towards Indigenous Peoples. I internalized the realization that I belong to the dominant culture, and I am safe and secure in a way that many of my neighbors will not experience. I also saw resilience and resistance in the art, story, humor, language, vulnerability, and culture all around me. I became acquainted with the most prolific artists I had ever met and began to gain an awareness of the imperialist cultural narratives, stereotypes, and worldviews that I was conditioned to believe, simply by growing up in the US. Some of the creative practices I saw were a continuation of ancient techniques, others were contemporized; all were keen examples of people's cultural expression despite years of systemic subjugation.

After six months in New Mexico, I moved to Montana to continue my education. I enrolled at Montana State University where I chose to major in Sustainable Food and Bioenergy Systems and minored in Native American studies. It was during this time, I began to forage and awoke to the abundance of the plants around me. Learning more about the land and becoming aware of the opulence that surrounded me awoke a deep interest in Indigenous food systems. In my final semester, I married my five years of my two studies when I was fortunate to travel to the Yucatan Peninsula for my senior thesis to learn about *milpa* farming. For three months, I lived in a small Maya village and got a glimpse into one part of the yearlong cycle of traditional Milpa farming. I will never forget the generosity and love with which I was received in the village. It was from my lived experience, as well as my time in academia, that I defined values to help me understand my responsibility as a Western researcher collaborating with Indigenous Stewards and to guide the process of my work in this project and this thesis.

To hold myself accountable to mitigate the power dynamic that exists between researchers and participants by empowering participants, I adopted an axiology; a set of values from the Six Rs of Indigenous Research: *respect, relationship, relevance, reciprocity, responsibility, and representation* (Ranalda & Tsosie, 2022). I have added kind-humor after reading a quote by Blackfeet elder Leroy Little Bear as a 7th value. “The ideal Native-American personality is one who is kind, who puts the group first, who is friendly, who is steeped in spiritual and ritual knowledge, who is easygoing and has a good sense of humor” (Kovach, 2021, pp. 62-63).

In this research, I am an outsider racially and culturally but consider myself an insider in the depth of knowledge I have cultivated in this field. My decision-making was an ever-changing process of collaboration informed by all people involved in the research. Especially those who chose to give us their time, energy, and teachings by participating in the study. I, as the researcher, have a responsibility to convey people’s experience in a way that feels truthful to them. This is an example of the value of representation alongside the subjective experience of both myself and the Stewards.

Analyzing my observations is where I became blatantly aware of my own ignorance alongside the subtle nuances of how settler-colonialism affected hundreds of distinct cultures in the Americas. Being a visitor, there was much I did not understand. This served as a strength as

well as a weakness. It was at times difficult to reopen the data, as some of the stories shared were incredibly personal and centered in trauma. My emotional and spiritual state while analyzing the data contributed to my findings.

Ethical Considerations

My past learning about settler-colonial history, the values driving these systems, and the precise design of racism towards Indigenous Peoples has helped me in my work here. I carried the responsibility I have as a scientist of European descent, doing a study with Indigenous agricultural professionals consciously. From the beginning of this study, I was given all the power in this relationship; from power dynamics created throughout American history to what we consider to be legitimate science today. Throughout the entire research, I asked myself three questions to help minimize this dynamic: 1) Is my fidelity to the research or to the community? 2) Have I embodied active decolonization in my actions and words? 3) How can I be in good relations to land, people, community, ideas, worldviews, and all living beings in the web of relations? I genuinely believe in the Steward-to-Steward program's potential to empower people who have had their power taken generation after generation by connecting them to each other.

Methods of Achieving Authenticity, Trustworthiness, Credibility, and Transferability

To provide data that was culturally appropriate, I leaned heavily on the guidance of Indigenous scholars whose work came before me. The research approach also received exemption from the Tribal Institutional Review Boards (IRBs) for the Sisseton Wahpeton Oyate (protocol: LRRB # 2024/7/2) and Standing Rock Sioux (protocol: SBC-FY24-25-5) communities. I found

the experience of working with Tribal IRBs enlightening. They would often interview me, face-to-face, and ask important questions that I did not see in other Review Boards. Questions like, how will our community benefit from your study? What is your ethnicity, and why are you interested in working with our people? What are your intentions with this research? Full board approval was received before the exchange took place.

The applied methodology aimed to ensure depth and comprehensiveness in my understanding of the complex and diverse participant experiences; as well as to account for the case study nature of my research. This was made clear to the participants. Throughout the entire process, I held myself accountable to respect their wishes. At no point did the completion of this study overpower the importance of building good relationships. There were conversations I did not record and data I did not collect if the content was very personal or felt like an overstepping of boundaries in the relationships I had built with participants and their communities. This was a decision that I made in alignment with my personal values and with the future relationships between my academic institution and the communities with which I worked in mind.

CHAPTER FOUR

FINDINGS

Overview

After analyzing the data on how knowledge is shared between two Indigenous stewards; through prompted conversation and story-sharing, some central themes were found at the heart of what was being shared. It was observed that the women who participated in this exchange passed knowledge to each other by sharing about their dreams, ceremonies, skills, stories of all forms (traditional, myth, personal, and contemporary), their land-connection, food, languages, and history. Through each of these ways of sharing, key themes revealed themselves through repetition, being revisited, or through the gravity the story held. To stay consistent with the research question throughout the analysis, there were three overarching questions that guided me in understanding how knowledge is shared. Those were: what knowledge is being shared? How is it being shared? What limits the exchange of knowledge? From analyzing the conversations, I learned what knowledge was being shared. From analyzing my observations and the setting, I learned about how knowledge was being shared in ways beyond oral communication. From all three data sets, I learned what limits and contributes to knowledge transfer between Stewards.

The questions prompting the story-sharing circles were as follows: 1) *will you please share a story that comes up when you think of how you came into your practice with food?* In this exchange, it was ranching and gardening or working with plant medicines. 2) *Where do you get your medicine?* This was a question I chose to ask after a conversation with Steward 1, where she shared that plants often visit her in her dreams and explained that understanding how other people find these connections was something she wanted to ask. 3) *Will you please share a story that comes up for you when you reflect on the experience of this exchange?* Throughout the analysis of all three story-sharing circles, two key themes revealed themselves. However, none were as

pertinent as the overarching central theme of *healing or awakening by returning to tradition and culture*.

As this work exchange connected two people in a space that was intertribal, intergenerational, and centered on each person's knowledge and their way of sharing that knowledge, each participant-case will be presented separately. However, the themes that revealed themselves through what was shared during the exchange wove the participants' stories together. Throughout the story-sharing circles, both women frequently used words like *reawaken*, *awaken*, *connect*, *return*, and *remember*. This alluded to the interruption of their cultures' continuance, expression and sovereignty that has sprung from eras of settler-colonialism and genocide of the Indigenous Peoples in the United States of America.

Story-Sharing Circles

Story Sharing: Healing by Returning to Tradition and Culture

Steward 1's Path Towards Returning. For Steward 1, a berry farmer, forager, and homeopathic medicine maker, the path to returning to her traditional foods and medicines was one of healing spiritually, physically, and emotionally. She spoke very openly of psychological, emotional, and physical abuse she and generations of her ancestors faced as well as physical ailments she has had throughout her life. Steward 1 described these experiences as wounds she realized she needed to heal and further explained that she did not realize how much cultural knowledge she was missing until she began her journey towards healing. In our first story-sharing circle, she shared that she was diagnosed with hypothyroidism and was told she would be medicated for the rest of her life. In defiance of believing this to be her only option, she began

going to the library and seeking out herbal remedies, only to find that almost all information on plant medicine came from Asian cultures. She questioned how she would find plants native to different ecosystems in Asia in the Great Plains and gained an awareness for the lack of public knowledge around the plants that are already growing here or are indigenous to her home. This new awareness fostered a deep curiosity in her and she awoke to how much of her culture was missing; foods, medicines, beliefs:

That is what ignited everything. It started with the medicines, and then once all this stuff started happening with Sean Sherman⁴ and that whole group, that was another piece of it. I want to eat those foods. I want to harvest all these medicines and roots. I want to eat small game. I don't want to just be dependent on pork and beef. I want to eat our small game that's out there, like rabbits and pheasants and prairie chickens and beaver, squirrels, fish. In my mind, I was thinking, we are missing it. We are becoming *consumerized* by thinking we only have to eat pork, chicken, and beef. It just got my mind working and I started talking. I was trying to have these conversations with people. But the people don't want to have the conversations because they just were, they weren't there. Steward 1.

Steward 2's Path Towards Returning. Neither participant grew up with a connection to their traditional food systems or cuisines. It was a connection they had to seek out and foster for themselves. In our first story-sharing circle, Steward 2, a second-generation buffalo rancher, shared her story about her journey coming into working with buffalo, and the depth of her connection to them. For Steward 2, her path of returning began when her father made the switch from cattle to buffalo ranching. She explained that raising animals that had an ancient relationship with her ancestors was a decision that she felt within the innermost foundations of her being. She spoke to the traditions her people had alongside this keystone species and to how stewarding buffalo today has connected her to generations of ancestors who came before her and would connect her to generations yet to come. She explained that everything she had in life has come from them, both

⁴ Chef Sean Sherman, also known as the Sioux-Chef, “is an award-winning chef, educator, author, and activist. A member of the Oglala Lakota Sioux tribe, Sean’s personal mission is to revitalize Indigenous food systems and build awareness of the transformational potential of Indigenous foodways to restore the health, local economies, culture, and food sovereignty of Native people” (Sherman, 2024).

the food they provide and the money from their calf-sale each fall. Her relationship to buffalo has taught her about and connected her to “ceremony, community, spirituality, language, culture, ancestry, and land connection.”

When asked to share a story about how she came into her practice with her food system or how she came to be where she is today, Steward 2 spoke to a deep fulfillment and a genetic memory that came when she fostered her relationship with buffalo by making the switch to buffalo stewardship:

The foundation of that is that sacred bond that we share with the *Pté Oyáte* Buffalo Nation. My understanding of our lifeways and the stories I've been told have connected my people, *our people*, to that nation since time immemorial. And I take that relationship quite literally, quite seriously. It is my identity. It is who I am. There's no separation; it's integrated fully. (...) I feel confident saying that because I grew up with them by my side since I was a little girl. We started with cattle, but I grew up literally in the middle of nowhere, on the ranch. (...) We have no neighbors and all it was, was the land outside, as far as I can see; north, west, east, south. I got to know that land very intimately all my life. And when the buffalo came into my life, it was exactly like your foot slipping into a perfectly-sized moccasin. Steward 2.

For both Stewards, not-knowing, disconnect, or a realization that something is missing is a notable subtheme throughout the story-sharing circles. Both women described cultural disconnect as a communal experience in each of their home communities. Disconnect was felt in genetic history: with ancestors who cannot be found, family records that cannot be accessed or are otherwise gatekept. Disconnect was described in cultural practices: with stories of people needing to wake up, or “not being there” when a conversation about cultural continuity arose. For both women, returning to their traditions was something they had to initiate and seek out personally. During the story-sharing circle on how they came into their practice, Steward 2 said in regard to her relationship with buffalo-stewardship:

The way we honor their [her family's buffalo] life from start to finish, how we want to utilize everything that we can: bone-broth, skins, brains, tongue, skull, all of it.

How can we keep using? And remembering? What is this for? (...) Trying to find out, how did our ancestors think when they had this? How can we transmute that into the present that we can honor the sacred exchange of energy once again and recenter them [buffalo] in our lives in some way, in a contemporary sense? It's different, but maybe something could happen. I'm just learning everything I can, every opportunity I get. (...) I want to hear stories. I want to hear songs. I want to watch people, have different ones, do things differently. How we butcher them, how we tan their hides, everything. (...) They teach us so much and they are so giving. Steward 2.

From this not-knowing and return to practice with the plants around her, Steward 1 defined the act of returning as one that healed her spiritually and physically. During our second story-sharing circle, when asked where she gets her medicine from, Steward 1 shared the stories of two dreams in which specific plants spoke to her and told her who they could heal and how. At the end of her story she said:

I feel for myself personally, my medicines come from my dreams and my medicines come from the reality of what they are, in front of me. Having that respect and having that relationship, establishing that with them, then you know they provide for you. They provide because before that, before even going to school, I reconnected it and reestablished that whole relationship with them; looking for medicine for myself to heal this. (...) I feel like it's in us, it is always up to us to open ourselves up to reconnect to it because it's not severed, it's not gone. It's all here in front of us. Steward 1.

When asked to share a story about the exchange experience, Steward 1 said:

People have a hard time understanding what we are doing. We're just reconnecting. We are just bringing our culture back to life. We're just breathing life back into it. Steward 1.



Figure 3: Healing or awakening by returning to culture and tradition. Painted by the author.

Figure 3 serves as a visual representation of the central theme, *healing or awakening by returning to culture and tradition*. The symbols found in this image were informed by stories confided in me over our shared time together. Both Stewards shared stories of times when their hands were used to plant something into the earth. In one case, those were seeds being sown, passed from one generation to the next. In the other, it was a bone-hook being buried after a sundance as a way of giving back and expressing her deepest reverence for the gifts of buffalo. Elderberries grow in the background to show the abundance that was cultivated for both women after making these return and because they are a medicinal plant that were a centerpiece in Steward 1's garden.

Experience of the Land as a Mirror to the Experience of People

Encompassed within the theme, healing by returning to culture, was the sub-theme of the mirrored experience between the human and other-than-human relatives around us (Yunkaporta, 2019). Both participants frequently personified characters found in their ecosystems, like buffalo, and drew parallels between themselves and their other-than-human relatives.

Steward 1's Mirrored Experience with the Land. Steward 1 often personified the land and plant-relatives around her when describing them. When speaking of disrespect towards the land on her reservation, she described it with violent actions that can be done to people as well. Saying, "they are raping the land," "poisoning," or "exploiting it." When she described her dreams about plants, she described them as speaking to her or walking up to her.

It [thistle] did this hyena laugh, and it said, I've always been talking, you just don't listen. To me it meant more than what that was. I mean, there's a more significant

meaning behind it than just saying that here I am laughing and you're not listening. What it meant to me, as a human, I need to humble myself and come down low to the ground because if a dandelion can grow through cement, out of nowhere, from just this tiny seed, who are we as human beings? How do we think we're above that? What we do, our mentality, that to me is where the disconnect is. We have disconnected from our relationship with our food. We've disconnected our relationship with our medicine allies. We have relationships that we have with them because we needed them as much as they needed us and that just brought that full circle. Steward 1.

Steward 2's Mirrored Experience with the Land. Steward 2 described her experience with buffalo as parallel to the experience of her people, speaking of buffalo as kin. In our first story-sharing circle, she said:

When he [her father] switched [from ranching with cattle to buffalo], I just thought to myself, I wanted to too. (...) And when I went that way, it just seemed to take off from there. My dad's inspiration, his passion, inspired me. And I got curious and kept getting involved. And my life revolved around the cycles of their lives from their birthing season to their mating season. We start to live in cyclical motion with one another. The way that *they* live with the seasons, they make you think of the way *you* live with the seasons. The way *they* live and interact with the land, it made me think about how *I* live and interact with the land. We are mirrors of each other, we're the exact same. We're like the reflection on the other side. What they went through when they nearly went to extinction, we went through. (...) I want to see the same thing too with our relatives in the human form, we mix with the *wasi'cuz*⁵, the white people have created hybrids, right? Same as them. Cattle and Buffalo. They mix too, created a hybrid. They are our relatives regardless, same as our relatives, who are mixed white. (...) We take care of them. There is no separation. Steward 2.

⁵ Wasi'cu, plural: wasi'cuz. Dakota language, used to describe a white person, specifically a greedy one. The literal meaning is debated. In folk etymology, "fat-eater" or "takes the fat" (Taylor, 1976).



Figure 4: The experience of land as a mirror to the experience of people. Painted by the author.

Figure 4 serves as a visual representation of the theme, *the experience of the land as a mirror to the experience of the people*. Throughout our time together, the Stewards and I spoke of the synchronicities between life's patterns and the rhythms we find ourselves in alongside the seasonal changes in our homes. Both Stewards shared stories of how the cyclical nature of their

food systems shapes the annual pattern of their lives. Whether it be the birthing cycle of a buffalo cow and a little cinnamon-calf (calf – specifically buffalo) or a plant growing from seed to flower to fruit back to seed alongside the light available with the change of the season; there is a reliable movement to the changes we find in nature. The moon was chosen as a symbol to represent the cyclical nature of the world, the cosmos, and life. As the pull of the waxing moon is experienced by all beings, both human and other-than-human every 29.5 days. The reflection in the mountain pond represents the reflective or mirrored experience the participants described having in synchronicity with the flow of nature around them.

Conversations

Conversing and spending time together (colloquially: visiting) were key approaches to how TEK was shared. By simply being present with each other and conversing, knowledge on practical farming/gardening and buffalo ranching techniques, on barriers that exist for the expression of TEK today, and knowledge on tangible pathways to finding TEK after years of settler-colonialism that have actively separated people from their traditions were shared. During conversation, TEK was both practiced and shared through stories, dreams, and accounts from Stewards' life experience. During my analysis of conversation, four overarching themes on what TEK was shared emerged. Themes were:

- 1) *Healing or awakening by returning to culture and traditions. (Hereof, healing by returning)*
- 2) *Experience of the land mirrors the experience of people. (Land mirrors people)*
- 3) *Severance, suffering, grief, and loss after the Boarding School Era. (Severance after Boarding School Era)*
- 4) *Existing within structures, barriers, and landownership. (Barriers and landownership)*

Themes are described with an accompanying drawing and direct quotations from the exchange.

Healing by Returning

Throughout our time together, both Stewards and I spoke openly of traumatic events in our lives and the lives of past generations. During our first exchange, Steward 1 explained that her path to returning to cooking traditional foods, cultivating berries, and gathering plant-medicines after her ancestors were forced to stop implementing their TEK practices to survive eras of white supremacy and settler-colonialism, was one of healing. After being diagnosed with hypothyroidism and being told she would need to be medicated for the rest of her life in the years following her college graduation, Steward 1 began to search for other options in her healing and turned to herbalism (See story-sharing circle analysis: *Steward 1's Path Towards Returning*, p. 40). She also entrusted me with stories of different examples of abuse she and generations of her ancestors had faced. This abuse contributed to a collective suffering for her people and the lands around her and provided me with context for the limitations that stand on the passage of TEK. According to Steward 1, there were numerous stories about people who “struggled with substance-addiction, choosing a life of sobriety after participating in a ceremony”. Both Stewards often described ceremony as a catalyst for spiritual awakenings and a connection point for people to heal physically, emotionally, or spiritually. Steward 2 described raising an animal that had a relationship with her ancestors as a decision that she felt within the innermost foundations of her character. Both Stewards used the terms *returning*, *remembering*, and *awakening* when speaking about their path towards healing. Returning to ceremony and tradition was seen as becoming the pattern breaker in a lineage of generations of trauma (Figure 3).

Conversations: Healing by Returning

When I did ceremony, it was the most beautiful thing. I came out of the sweat blistered. It was a moment of undoing trauma, not just for the future, but also for the past. It is what my ancestors did. Steward 1.

Sovereignty to me is waking up and remembering how powerful we are. It is determining what our food looks like, what our spaces look like, how our houses feel, what makes us feel good. It is realizing we do not need white people the way we were taught. It is realizing that systems of colonization are rooted in control and dominance. Steward 2.

Land Mirrors People

Both Stewards drew parallels between the injustices they have faced, the injustices that have been done to their lands and homes, and those harming the plant and animal relatives that live within them. They both reflected on how these wounds could be seen in the health of the ecosystem, as well as the physical health of the people. At one point, the younger, Steward 2, remarked on how inspirational it was to see Steward 1, a woman belonging to the generation before her, doing the work of healing and pointed out that Steward 1's healing could be seen in the "beauty, health, and happiness of her children and grandchildren." As well as "she is the only sibling of four who is not diabetic, and I think it is from her shift towards traditional foods and medicines."

Conversations: Land Mirrors People.

I learned respect for the raccoon and for myself. I was using [drugs] at the time, and I stopped after hearing the sound of his scream. Steward 1: from a story she shared about hunting raccoons using dogs. One raccoon climbed up a tree and screamed at her; she described the sound like the scream of a human child.

They [white dairy farmers] abuse those dairy cows, and we drink the trauma.
Steward 1.

It's coming straight from the breast of mother nature. Steward 2 describing water from a spring we gathered to drink and use to make herbal remedies.

Refer to Figure 4 for visual representation of theme: *experience of the land mirrors experience of the people*.

Severance After Boarding School Era

The tragic impact of the boarding schools came up organically in our conversations, without my prompting. Referring to the legacy of trauma following the Boarding School Era, when we spoke of different impacts on Steward 1's community's ability to continue practicing their culture, she often said, "the knowledge was not lost, people remembered, knowledge was passed." Once we discussed the boarding school era in detail, Steward 1 reassessed this judgement of TEK having continuity in her community, and instead associated TEK with attributes like "stolen, severed, lost". She expressed these words alongside family and community stories of violence and the abuse that unfolded for the young children who were taken to the boarding schools. Every story of trauma or lateral⁶ and domestic violence on the reservation was linked back to the abuse generations of people faced in the schools.

Conversations: Severance After Boarding School Era.

When I was growing up, I didn't know anything about being Dakota. My mom was in a boarding school, my grandfather was in one. Even my uncles and aunts. They didn't know about being Dakota. (...) The knowledge was *severed* when they took

⁶ Lateral violence: refers to violence that occurs within a marginalized group or population; in this case, Indigenous person towards another Indigenous person Jaber, L. Stirbys, C. Scott, J. & Foong, E. (2023).

our ancestors. Steward 1, describing the culture after the Boarding School Era and her experience growing up on the reservation.

There is no record of where he was taken. I will never find him. I will never find his grave. All I know is that he didn't live long after leaving that place. Steward 1, sharing about searching for the body of her great-grandfather.

Sovereignty is the moment her people *wake up* and realize that they can determine what their spaces look like, how they feel, what foods they eat because they can see that they did not need the white people the way they were taught. Steward 2, after being asked what sovereignty meant to her.



Figure 5: Severance of knowledge after the Boarding School Era. Painted by the author.

Figure 5 attempts to capture the overwhelming feeling of not-knowing, of something missing, or a feeling of nothingness where something should be. This is a feeling that was expressed when we reflected on the disconnect from culture, tradition, and identity following generations of people who were taken from their homes as children to be “civilized.” Children’s

hair was cut, they were beaten for speaking their languages, thousands perished, and thousands more faced abuse (Child, 2018). This is the only painting that lacks an earthy tan color found in the other images as it is intended to show the limitation placed on cultural continuance and knowledge sharing set in motion by the trauma following the systematic attempt at cultural eradication in the Boarding School Era.

Barriers and Landownership

A topic that frequently emerged was land access or lack thereof. Both the Sisseton Wahpeton Oyate and the Standing Rock Sioux reservations in which Stewards 1 and 2 live are checkerboarded reservations⁷, with many white landowners living within the reservation boundaries. Stewards shared with me that it was common for white landowners to raise the price of land to Indigenous buyers while lowering it for whites. Stewards also confided that white landowners gained possession by taking Indigenous landowners drinking and swindle them for a better deal while they were inebriated. I heard stories of Dakota people finding a white ally or proxy to purchase land on their behalf, as it would be sold at a reasonable price that way. Both Stewards expressed the exhaust they felt from the imposed structures they are forced into, with landownership serving as a literal physical barrier that has limited how people can practice traditional food systems and ceremonies.

Differing cultural architecture and the physical structures we find ourselves in, were another common topic of discussion. We spoke of how the architecture of a tipi was formed in relationship to the movement of the buffalo and a seasonal round of following their migrations. In a Western paradigm, reality is shaped by a number of straight lines and squares, shapes that are rare in nature yet make up our daily consciousness as we move through buildings, streets, and spaces (Orey, 2000).

⁷ Checkerboarding refers to reservations where there are a significant number of land-plots are owned by outsiders creating checkered pattern of land ownership and jurisdiction within a reservation. Chiarenza, G. (2013).

Conversations: Barriers and Landownership

We [Indigenous Peoples on reservations] do not even own the land; it is entrusted to us (...) Land should not be in-trust, we should own it! In-trust is not the agreement for *wasi'cu* (whites). They come in, and buy it, and own it. All of the lakeshore and prime land is now gone. Steward 1.

We always have to function within a structure, whether it be as a nonprofit or a buffalo operation, there are Western rules imposed on us. Steward 2.

There was a time, long ago, in old times before square homes and checkerboard landscapes and roadways right. Steward 2, sharing a story that had been passed down to her, about a young boy going to the sky to retrieve cedar to help his people.

Sica Hallow⁸ is ours. The Dakota burial grounds are up there, and they want to turn it into a campground. Steward 1.

There's just so much division and separation. We're sick today. (...) We see our people hurting and we want to help, so we offer ourselves. That's all we have, to give. And we pray and then we receive these answers right in the form of this medicine. Steward 2.

⁸ Sica (shi-cha) Hallow: state park in Sisseton, South Dakota, home to a Dakota burial ground (South Dakota Game Fish and Parks, 2025).



Figure 6: Existing within structures, barriers, and land ownership. Painted by the author.

Figure 6 seeks to express the feeling of the interruption of natural functions and cultural expressions by Western structures. How can people follow the migration of the buffalo in a seasonal round, with a knitwork of barbed wire carving the land? How does a world of square rooms, square land-plots, square books, square furniture, and straight-lines, shape our collective

consciousness? How can we understand fully, the worldview of other cultures after learning from an imperial education system for the duration of our lives? These were the questions this symbol sought to explore. The spiral represents the natural flow of the world that is separated by the squares. The squares represent the shape of the epistemological, legal, and physical barriers or structures imposed by Western culture that impact everyone today.

Shadowing

Shadowing the exchange was where I recorded my observations on the setting, as well as where I explored how knowledge was shared during the activities we partook in, beyond oral knowledge. Steward 1 was a first-year farmer at the time of our visit, and so, Steward 2 and I helped her by building raised beds, going on a plant walk where we gathered plants with her guidance, made herbal medicines at her home, planted native plant plugs at the tribal college, and cooked together. Steward 1 also showed us her herb drying racks and dry storage in her home. Her farm is a four-acre plot. The west side of the land was once a school, and so, has a concrete foundation just below the first layer of soil. Because of this, she is building raised beds on this side of her land. Steward 2 and I helped by filling in the bed frames with a bottom layer of semi-rotten branches, then leaves, and a final layer of soil and buffalo manure from the tribal buffalo-herd. On the east side of her land are her best soils; she grows five varieties of elderberries and has them planted in rows here. The north side is a hedgerow of hawthorn. She also has dead trees among them but leaves them standing as edible mushrooms that she can gather for her medicines and food often grow in the trees' rot. On the south end of her land is a dirt road and just past the road is her house. As an herbalist, she allows all kinds of native and medicinal plants to grow. To an outsider, it may look unruly or unkept, and she was often met with this prejudice from her white neighbors.

While we worked, Steward 1's neighbor, an elderly white man stood and glared at us. Steward 1 remarked afterwards "if a look could kill." In our three days together, we had several interactions like this one, specifically with white men and women. Very few white men and women

looked both Stewards in the eye or would ignore them all together if we had a basic interaction like buying a chocolate at a gas station. I was not treated with the same dismissal. When planting native plant plugs at a tribal college, a white man came up to Steward 2 and recorded her while holding his phone inches from her face, aggressively asking who she was. She stood tall and calmly asked who *he* was and why he felt that was appropriate behavior. He shied away in an instant; my observation from the moment read, “she took the power that he was trying to assert upon her back from him.” After this aggressive interaction, the man seemed to be trying to apologize by doing us favors like bringing us water or carrying things for us but would not make eye-contact or speak with us. Steward 1 remarked that it was empowering and inspiring to see a woman from the younger generation carry herself with so much dignity.

While we worked, I noticed that at times, Steward 1 would share knowledge by leaving things unsaid and allowing Steward 2 and me to try and feel it for ourselves. Steward 1 also left things unsaid during conversations in a way that gave precision to what had been said. She had a way of setting up a sentence so that you understood her key point from the silence at the end of a statement. She allowed the listener a moment to internalize her words.

Severance After Boarding School Era; and Barriers and Landownership

My observations began as I drove to Steward 1’s land. Driving east across North Dakota from Montana, I passed hundreds of miles of wheat, then sunflower, then corn. As I drew closer to the Sisseton Wahpeton Oyate reservation, more plots with grassland and prairie were present and small lakes hopped out of the landscape everywhere. Driving through the reservation, I was surprised to see plots of mono-cropped corn next to plots of prairie in a scattered fashion and began to question if this was the result of checkerboarding. I was often surprised to see how close to the small lakes people were sowing corn and how few weeds were present; I assumed because they were sprayed with herbicides. I learned from a property map that the reservation is checkerboarded, with much of the wild prairie on the reservation having been bought and tilled by white farmers

who monocrop corn or raise dairy cattle unbelievably close to the abundant lakes and ponds that dot their way across this part of the Dakotas. I realized I could physically see the checkerboard as I drove, corn was white owned, prairie grasses were tribal; and most of the prime land, and lakeshore was corn. This informed the theme, *existing within structures, barriers, and land ownership* as one could clearly see a physical barrier people had to overcome when it came to accessing land and practicing cultivation of any sort.

Another barrier around land access presented itself when Steward 1 generously took us to Sica Hallow to gather plant medicines and learn about the plants available at the end of summer. Sica Hallow is now a state park, but it holds a Dakota burial ground and is considered sacred. Tribal members now pay a fee to access it. Most of what Steward 1 knew about her missing relatives came from archival work in museums or libraries. She expressed having to pay fees in different archives around the state to find her own family's records after relatives were stolen and their stories lost, as a massive disrespect to her and a barrier to the reconciliation that had to be done. This informed both the theme of *existing within structures* as well as the theme of *severance, suffering, grief, and loss after the Boarding School Era*.

Land Mirrors People

When I arrived at Steward 1's house, I quickly learned that the water was not potable on the reservation as she offered me a plastic bottle of water to drink from. After two days of drinking water exclusively from plastic bottles, I decided to have a drink from the tap water at my motel out of curiosity. The water tasted distinctly like the smell of cattle manure, I spat it out immediately. I assumed that it seeped into the watershed from the massive dairy farms that surround the reservation. Steward 1's remark on how they "abuse the dairy cows and we drink the trauma" wrang through my head as I realized this was true in more ways than just milk. Lack of access to drinking water as a direct consequence of human interaction with or even abuse of the land informed the theme, *the experience of the land as a mirror to the experience of the people*.

Healing by Returning

On our last day of the exchange, Steward 1 showed us a video of her eleven-year-old granddaughter eating the raw heart of a deer she had hunted as was Dakota tradition in the time before contact. Her granddaughter gagged, then giggled, and the pride and joy that rippled out of her smile alongside ferocity and gentleness in the image of her pink-camo jacket speckled with blood was a powerful symbol to end our time together.

How Knowledge Was Shared

Walking through Sica Hallow, following Steward 1, as she pointed out medicinal and food plants, we shared many stories, myths, and dreams. Stewards connected profoundly from the messages in their dreams and traditional stories, in a way that went beyond a conversation. Long silences followed stories about dreams, and after the pause, a conversation on an interpretation or the life-impact from the dream would follow. Deep internalization was clear to me at this moment. Steward 1 shared many dreams, and dreams about plants guided her on her path of becoming an herbalist. In our last story-sharing circle, Steward 2 shared that this exchange experience was to her like the medicine of a dream.

At one point, I shared a dream that was significant to me, both for the timing and for the content of the dream. Steward 2 pulled me aside and told me I “needed to honor the lesson of that dream because it was sacred.” The seriousness in her tone stuck with me. I assured her that I am to the best of my ability.

CHAPTER FIVE

DISCUSSION

The holographic framework encourages the researcher to explore the phenomenon of their choice by braiding their body, mind, and transspatial experiences (Meyer, 2020). In the findings section, I intentionally removed my emotions, assumptions, and epiphanies from my observations or recordings; I also removed my spiritual, ethereal, or mystic experience. The findings section, therefore, only reflected the objective/body column of the hologram (Meyer, 2020). In the discussion section, I intend to introduce the other two columns of my experience and braid all three to unify and strengthen the findings. This section is broken into the four main themes that emerged from analyzing the data using all three applied research methods.

Severance After Boarding School Era

During our conversations on how TEK is shared today, the greatest barrier that limited the Stewards' ability to share knowledge, was the horror inflicted upon Indigenous children in the boarding schools. Stewards shared that the difficulty they faced accessing traditional knowledge and cultural practices, was influenced by the legacy of the cultural genocide that took place in boarding schools. In conversations, the misery Stewards and people they love endured, whether it was alcohol abuse, illness, sexual or familial violence, internalized racism, and other social problems, always tied back to the abuse that was common in the schools. While listening for how knowledge was passed, I perceived a strong feeling of absence where I expected a sense of cultural identity to be.

When speaking about traditional food systems, both Stewards expressed curiosity around how their ancestors used to live, how they used to eat, farm, hunt or utilize various parts of a

buffalo (refer to story-sharing circle: *Steward 2's mirrored experience with the land*. pp. 46) because there was a “disconnect.” This disconnect was especially obvious when Steward 1 said, “the knowledge was *severed* when they took our children”. Up until that moment, she had spoken of cultural resilience and continuance with a hopeful tone, sharing several examples of how people in her community were healing, practicing ceremonies, traditions, and speaking the Dakota language. Her tone completely changed in an instant, and a thick sorrow could be felt in the air following the word, *severed*. As I read stories of young children having their hair cut (Reyhner, 2018), I could not think of a more precise word to symbolize the physical, mental, and spiritual *severance* of culture in an act of forced assimilation. Stories of abuse (both the abuse of substance and physical, emotional, and mental abuse), specifically lateral abuse, taking place on the reservation were always accompanied by speculations around the trauma from the boarding schools.

During our workday, when I asked each Steward what sovereignty meant to them. Steward 2's response about “waking up to not needing white people the way they were taught” reflected layers of cultural conditioning, specifically racist narratives that have evolved through American history, being shed.

In the first moments of European colonial settlements in the US, the Doctrine of Discovery laid the foundation for a dehumanizing paradigm around Indigenous Peoples. British colonial claim to the lands of what we now call the US were laid under the belief that non-Christian Indigenous Peoples here cannot be considered human inhabitants (Ruppel, 2008). The genocidal attitude carried towards Indigenous Peoples in the US throughout the history of this nation, has its foundations in the belief that Indigenous Peoples are not human. Cultural genocide was one way of attempted eradication and the philosophy behind the establishment of the boarding schools (Child, 2018). The words by Richard Pratt who founded the first off-reservation boarding school, “kill the Indian and save the man,” have echoed through American history as a representation of the violent cultural assimilation that took place in the schools and a clear example of the US' perception around Indigenous Peoples (Smith, 2004). Children taken to the schools were, from an early age, conditioned to believe that their cultural worldview, languages, and spiritualities were inferior, shameful, and uncivilized (Child, 2018). In her response to what sovereignty meant to her,

Steward 2 showed that she had recognized and taken a critical look at the narratives surrounding her as an Indigenous woman and stopped believing them about herself. This reflected her self-esteem and internal power and is a connection I will never forget.

To steal children, to intentionally take them far from home so they could not escape, and to do so with the intention of erasing their connections to culture, language, ancestry, and worldview through indoctrination and abuse (Smith, 2004) is in my opinion, one of the darkest epochs in human history.

Land Mirrors People

Throughout our shared time, Stewards spoke of, treated, and viewed the land and all of her inhabitants with the same respect as they would a dear friend or relative. Stewards personified Mother Earth; both in moments of reverence for her gifts and abundance, and in co-misery for the ways she has been exploited, torn up, plowed and “raped.”

In an Indigenous cultural paradigm, there is a personal sense of belonging to the land in relationship, rather than the land belonging to an individual as a property asset (Wilson, 2020). In *Research is Ceremony*, Wilson (2020) describes an Indigenous view of relationship with Earth:

This emphasizes for me the belief that we as Indigenous people have a literally “grounded” sense of identity. The ground and environment from which we came is what makes us. (...) So our continuing connection to the land, and fulfilling our role within that ongoing relationship, is centered on our specific environment and the relationship that it holds, rather than on events that may be seen as historically important but hold only tenuous connection to our land. Maintaining traditional obligations to the land is seen as more important than deeds or dates of transference of ownership (Wilson, 2020, p. 88).

Adopting a worldview of kinship with land and all of her inhabitants, naturally fosters a desire to care for her the way one would a relative. From Latin, the word *Indigenous* means, “born of the land” or “springs from the land” (Wilson, 2020). In an Indigenous paradigm, mother and Earth are synonymous and so, are mirrors of each other. If we adopt a perspective of Earth as a mother, we can recognize the mass extraction of her resources as a relationship that is one-sided, taking without giving, abusive, and something that will hurt us as well (Yunkaporta, 2019). If we imagine Earth as a mother, the reverence and respect Stewards carried for her simply makes sense. They spoke about her the way I would my mother; and if my mom were being torn up and poisoned the way Stewards described the plots of land where dairy farmers were over-grazing and creating manure piles that seep into the sweet waters around the reservation, my heart would break.

My heart *does* break. Comparing these two paradigms, one of belonging to land in a relationship and the other of land belonging to you, we see how the experience of people has been a mirror to the experience of the land. A dominating Western paradigm of land belonging to the individual as a resource to be used, has deeply contributed to the Anthropocene with the mass exploitation of resources (including human labor) and lack of care for the consequences (Yunkaporta, 2019). By looking at the reflected experience Stewards expressed, we can begin to become aware of our cultural conditioning and ask ourselves questions about how narratives found within the dominant worldview have contributed to the climate crisis.

Barriers and Landownership

Throughout our time together, Stewards expressed that there were several barriers and structures limiting their ability to share knowledge. Land ownership was a large barrier that limited Stewards’ ability to practice traditional food systems from all three strands of experience in the Holographic Framework (Meyer, 2020). Fence-lines, allotments, and Western buildings were all *physical* limitations on what traditional food systems practices could realistically be implemented today. For example, Steward 2 admitted that her family had the maximum number of buffalo they

could for the amount of land they had. The racist stereotype around Indigenous Peoples being childlike and needing assistance from white people to tend their lands (Ruppel, 2008), served as a subjective limitation. The fact that no white people looked us in the eye, or that white people practiced racial discrimination by driving up the price of land so that Indigenous people had to go to a white proxy/ally to represent them when they were ready to purchase land, reflected this racist concept of ward to guardian. Steward 1 admitted that her neighbor had called the county on her several times because her yard looked “unruly”. As an herbalist it was important to Steward 1 to have several medicinal plants growing around her home and to see them through their lifecycle as she needed different parts of plants at various stages of their growth. Her neighbor’s constant judgement, nosiness, and the drama she dealt with because of it, to me, reflected the neighbors’ internalized narratives around what is *civilized* (Brown-Rice, 2013).

In a quote from p. 55, Steward 1 expressed how land is in-trust to Indigenous people on the reservation. The system of land ownership for Indigenous peoples on most reservations in the West, is different than the rest of the US. Much of tribally – and individually-owned land within reservations is held in trust by the federal government. Land can be taken out of trust, thus becoming land held in fee (or fee title), but this becomes complex with issues like fractionation (Allotment Act) and added elements like having to pay property taxes. Taking land out of trust also changes who has jurisdiction over it and contributes to the checkerboarding issue on reservations as fee land may be subject to intrusions on tribal sovereignty by state actors (Ruppel, 2008). Accordingly, it is a problem on the Sisseton Wahpeton Oyate reservation, and I heard stories of how land was manipulated out of Indigenous ownership, and how once its ownership changed, it was near impossible to be reversed, whether this was through white family nepotism, gatekeeping, or blatant racism.

Structural barriers came up in a few ways beyond land ownership. During her archival work, Steward 1 admitted to having to pay fees to access family records as she searched for missing relatives. She explained that having to pay to learn about her own family after they were taken and had their names changed, was wrong to her and I could not agree more. When visiting Sica Hallow, a place Steward 1 admitted was safe for her and where she would go when she felt hurt; a place that holds a Dakota burial ground and is a sacred site, we paid a daily fee. This may seem a small

bureaucratic nuisance, but fees contributed to the American cultural narrative of the *helpless Indian*, by placing a barrier of Stewards having to gain permission to access familial history and sacred spaces, the way a child would need permission from their guardian to eat a cookie. Small structures like fees that limit cultural expression, are in abundance.

In our conversation on cultural architecture and the physical structures we find ourselves in, we spoke of how the architecture of a tipi represented a completely different worldview than a cabin. Tipis are completely biodegradable, can be put up in an hour, taken down in an hour, have air flow in the summer, and stays warm enough in the winter for people to live and create culture with the seasons of the northern Great Plains (Orey, 2000). Beyond that they are beautiful and create space for story-sharing, rest, community, and reflection. Tipis return us to the cultural paradigm of belonging to and flowing with land rather than owning it (see discussion, *land mirrors people. pp. 62-63*). Stewards spoke to how empowering it would be for them to determine what their spaces could look like and how they could feel, for them to bring back their cultural architecture.

The US is now divided into a tight knitwork of barbed wire and private landownership, often as a consequence of acts like the Homestead Act (1862). We took a cyclical thinking people and shoved them into square buildings and land plots whose ownership is eternally being fractionated (Chiarenza, 2013). In the Great Plains, we can see the consequences of this in the health of the soils, the encroaching forests and loss of the prairie that have not had human fire or grazing management with the intensity they evolved with, in some 200 years (Johnston, 2022).

Healing by Returning

Both Stewards shared that their perspective paths of learning about their traditional food practices, experiences attending ceremonies, speaking their languages, and histories were traditions they *returned* to. For all of these, Stewards shared that the action of *returning* was self-

motivated, and knowledge around culture and tradition was hard to find. However, they also shared, that when they did reestablish those connections to their cultures, it was like “slipping into a perfectly sized moccasin.”

I used the word *tradition* in naming this theme because I could not identify a synonymous term that better reflected the notion of returning. Etymologically, *tradition* stems from the Latin *traditionem*, meaning “to hand over,” or “to surrender” and has evolved over time to represent the handing down of knowledge, practice, or belief from one generation to the next (Ayto, 2009). This action of handing down through generations is at the heart of the theme, *healing by returning to tradition*. The boarding schools were a deliberate attack on culture, and the legacy of trauma following an era of systematic familial separation (Child, 2018), echoes in the name, *the stolen generation*. Cultural practices and Indigenous ways of knowing that survived because people have returned to them and continue to express them in contemporary ways today, are what I refer to as *traditions*. To continue *the handing down* of knowledge over generations, after so much carefully designed pain, is to me, a testament of deepest power.

Healing became a theme in each conversation. As Steward 1 shared the video of her eleven-year-old granddaughter eating the raw heart of the stag, Steward 2’s comment on how Steward 1 was the pattern breaker in generations of trauma struck me to the core. The image of her eleven-year-old granddaughter gagging and laughing proudly in her blood-speckled pink, camo jacket; made me cry as I was overwhelmed by Steward 1’s strength and the service she is doing for future generations of Dakota people by working through her own healing.

Like languages, Indigenous epistemologies are continued by people practicing them, believing them, thinking them, and being with their guidance (Kimmerer, 2013). Diverse cultural perspectives and knowledge systems create resilience, especially when the worldview, language, science, and belief of a culture was created in deepest relationship with a specific place over millennia (Nelson, 2014). By returning to cultural beliefs outside the dominating ones, we create a more resilient global social system as humans.

CHAPTER SIX

CONCLUSION

Inspired by the CAC method of knowledge sharing among farmers, everyone involved in this project and I, sought to create a program for the Buffalo Nations that would connect Stewards to peers who I expected to have a similar lived experience. Initially, I anticipated that people connecting through our exchange program would primarily share knowledge and technical skills around specific farming practices; however, in the case of the STS exchange documented in this thesis, the connection went to a deeper place. Stewards connected through all three braids of experience found in the holographic framework (Meyer, 2020) in a way that transcended the technical aspects of the food system. The connection they built was not centered in technical aspects; rather they connected over their pathways to *healing*.

Although the study was not intended to focus on the theme of healing generational trauma – trauma inflicted after decades of carefully attuned violence towards Indigenous Peoples living under imperial colonialism – healing emerged as a theme in every conversation. By simply asking how each Steward arrived at their current work in the food system, it became evident that for both women, the process of returning to their cultural traditions was a process of healing. Since this case study covered only one exchange with two participants, we cannot assume that connecting two Indigenous land-stewards through a work exchange will generate conversations on healing for all future people who decide to participate in an exchange. The depth of the Stewards' connection, however, granted me a glimpse into the potential a STS program can hold to empower participants and their knowledge, whether shared through dreams, stories, language, or sowing medicine gardens.

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