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April 8, 2019

Windows into the Lived Experiences and Health Consequences of Food Insecurity on the
Cattaraugus Reservation: Implications for Indigenous Peoples' Food Sovereignty

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Abstract

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By Abbe McCarter

This study examines the causes and consequences of food insecurity on the Cattaraugus reservation of the Seneca Nation of Indians (SNI). Combining applied anthropology and humanistic anthropology approaches, I provide a window into the lived experiences of food insecurity and people's visions for a better future. Situated as a non-Indigenous scholar committed to building relations with the SNI, I document the ways in which the newly formed SNI Department of Agriculture endeavors to shift the nation's food landscape and health conditions. This work breaks new ground as a small-scale anthropological partnership with the Seneca Nation of Indians, signaling a new era in anthropological work that puts Indigenous sovereignty and protocol at the center and that is collaborative, responsive, ethical, non-extractive, and about building long-term relations. Part one documents the history of structural oppression among the Seneca Nation of Indians and the resulting food commodity programs across reservations in the US. Part two discusses the extant research which has shown that obesity and diabetes rates are disproportionately high among the SNI and Indigenous populations in the United States. Part three refocuses the narrative back to lived experiences of enrolled SNI members by providing small 'windows' into life on the Cattaraugus reservation. Throughout the work, my guiding question is: How can communities effectively return traditional food sovereignty and sustainability back to Indigenous populations? The answers are illustrated through an ethnographic examination of the SNI's newly formed Department of Agriculture Gakwi:yo:h Farms and data collected through semi-structured interviews (n=16) and a qualitative 'plate mapping' exercise (n=30). Thematic analyses of both the interviews and plate maps reveal a marked frustration with the continued problems of food insecurity and diabetes on the Cattaraugus reservation. These findings suggest that the new SNI Department of Agriculture can play a pivotal and innovative role in returning food sovereignty to the SNI. Using applied anthropology and humanistic anthropology approaches, my study concludes with a brief discussion of future collaborative projects which will be proposed to the SNI Department of Agriculture in June 2019.

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Chapter I - Introduction

“There’s still a lot of work to do, but there’s a greater realization of this importance of understanding what started right here in America to understand the world around us...”

- Anne McBride, The Culinary Institute of America, 2018¹

The goal of this project is to provide a holistic assessment of the food landscape on the Cattaraugus reservation and for the Seneca Nation with the hopes of creating a reciprocal and lasting relationship sustained outside of the scope of this particular study and for years to come. As McBride states in the opening quote, there is still so much work to do in this field. To provide context, the concept of food insecurity on the Cattaraugus reservation within the public health framework of diabetes rates is presented.

Almost 50% of all members of the Seneca Nation of Indians (SNI) either has or will develop diabetes during their lifetime which is more than five times the rate of the disease in the general United States population (approximately 9%) (Seneca Diabetes Foundation, n.d.). Epidemiologists have long recognized that Native American populations across the country are disproportionately affected by diabetes, with the average rate being 33% among all Native Americans groups. The rates reported for the SNI are significantly higher (Spanakis, 2013). The reasons why diabetes affects ethnic groups differently, are typically broken down into the biological contributors (such as insulin resistance, obesity, genetics and glycemic control), health behavior contributors (physical activity, smoking, and depression), social and environmental contributors (availability and access to food / gyms / stronger social networks), and lastly, healthcare contributors (health care access and health insurance) (Spanakis, 2013). Previous

¹ Speaking on Sean Sherman, the ‘Sioux Chef’s’ work with Native foods. Retrieved from https://www.youtube.com/watch?time_continue=28&v=loRoy608LWA

studies focused on ethnic health disparities and those within Native populations in particular, tend to focus on genetic predisposition, high rates of obesity, lack of physical activity, and an unhealthy diet (Minhesuah, 2016). Though genetics, obesity, physical activity and diet clearly contribute to the rate of disease, research on diabetes among Indigenous populations in the United States should not be isolated nor should it start by tracing the disease back one step. Instead, these rates should be examined within the context of the structural frameworks and histories of oppression that undergird the health disparities and should include the voices of those most affected.

In 2017, the Seneca Nation of Indians received a grant to fund a new Department of Agriculture, which would be called Gakwi:yo:h Farms. In the Summer of 2018, I had the privilege to work as the sole summer college intern on their new farm. Planting everything from Seneca sunflowers, to bear paw beans, to Iroquois white corn, I learned how what we consume is grown and cultivated. Going even deeper, I learned the connection to the land and the larger circle of life is omnipresent in agriculture. While staying in Summer Creek just off of the reservation during the internship, I noticed the lack of healthy food available in the area. It was striking to leave my work on this innovative fresh food project, only to go and eat dinner at the sole option nearby, Tom Horton's fast food restaurant. This was a lived reality that had been explained to me countless times but only when I could see it play out before my own eyes and actually feel it for myself, trying to decide between the McDonalds or the Dollar Tree for dinner, did it take on a much deeper meaning.

For the SNI in particular, food holds very important cultural, ancestral, and spiritual meanings. The majority of traditional foods that were once a staple of the SNI diet have now not been grown on the reservation for generations. Mike Snyder, the head of the Agriculture

Department, made this point when he told me that people are always coming to him and asking how these foods are going to taste and how they should be cooked. Mike explained further, that all he can respond with is that he hopes they can learn this together. The purpose of Gakwi:yo:h Farms is not only to reclaim traditional foods and bring them back to the community, but it is also to reclaim a sense of community with one another and a connectedness with the land. Their stated mission is “to address food security and food sovereignty through community engagement and wellness by implementing a Haudenosaunee approach to agricultural practices. Our goal is to produce healthy food, employ quality food processing procedures and make these foods available to our community members, from field to table...our goal is to reconnect to the philosophy of our ancestors and pledge to promote the relationship between our people, our lands and the foods we eat” (Gakwi:yo:h Farms, 2018). There is empirical evidence of the powerful effects of returning to the land. Ethnographer Eugene Anderson, explains that having a deeper connection and bond to the earth can be thought of as “ecology of the heart.” He defines this by saying that “without an intense, warm, caring, emotional regard for the natural world, we will be literally incapable of preserving it” (Wilson, 2017).

In a community that has struggled with food sovereignty for centuries due in large part to an oppressive history of land grabs and commodity food programming, this farm holds the promise of beginning the slow journey of reclamation. Although the USDA does not currently list the reservation or surrounding area as a food desert, there is a definitive lack of food security, in that there is not a single store where one can buy fresh produce on the reservation and the closest restaurants are all fast food chains. A lack of fresh food stores and healthy food options for disadvantaged populations can directly influence the rates of obesity and diabetes, with the most efficacious solution to reducing obesity in these cases simply being to address the

infrastructure (Lovasi, 2009). Thus, this research focuses on three main aspects of the lived experience of food insecurity. First, a brief contextualization of the larger structural and historical frameworks that have played a role in shaping the food landscape as it is seen today. The second component presents some of the stories or popular attitudes learned through interviews, focus groups, and the first-hand research conducted in New York, and the third and final aspect of this study illustrates how future studies can use this climate analysis of the SNI Cattaraugus reservation to more accurately tailor interventions or programming. Scientists and scholars often only assess the statistics, asking disease prevalence rates to tell the story, yet interventions that focus on a holistic, cultural understanding have been shown to be much more successful (Peek, 2007).

In this thesis I take this approach using mixed methods. Data were collected using a series of semi-structured interviews (n=16) and a qualitative ‘plate mapping’ exercise (n=30). My work is mindful of the charged landscape in this field and aims to keep that at the center of the research.

Researcher Positionality

“When non-Indigenous people and Indigenous people come together in pro-Indigenous, pro-land rights political spaces they are establishing a relationship based on a critique of colonialism.” - Clare Land

Although my research on the Cattaraugus reservation does not specifically address land rights disputes, it is impossible and irresponsible to separate out the issues of food insecurity on a reservation and among an Indigenous population, from the history of land rights abuse. This history, in fact, serves as context for the larger issue of food security. As Clare Land suggests in her novel ‘Decolonizing Solidarity,’ it is due to this storied past that it is right “to talk in terms of

categories such as colonizers and colonized, Indigenous and non-Indigenous, dispossessed and beneficiary” (Land, 2015, 84). Spending the past summer on the Cattaraugus reservation, I had formed friendships with enrolled members living there. I had worked in a farm alongside a number of different adults and youth, been to children’s lacrosse tournaments, and had debated every topic under the sun over numerous meals together. For me, it felt weird forcing us into boxes of ‘Indigenous’ and ‘non-Indigenous,’ ‘dispossessed’ and ‘beneficiary,’ but at the same time I realized the important boundaries of these words, and that there was still a definite time and space for them. Reading Land’s work helped me better assess these spaces of researcher positionality.

The terms Indigenous and non-Indigenous represent a clear binary which as Land explains, “reflects a material, historical reality (a ‘social fact’) for many people” and in both relationships as well as professional work, “to use it keeps in view a socially constructed division that has real consequences for many people” (Land, 2015, 93). I believe this statement to be interpreted in two different ways. First, it is beneficial because the real and current reactions it may invoke are in direct response to past consequences. Labeling someone as ‘non-Indigenous’ states quite plainly that you are not the original people of this land. This statement is not only true, but it also honors that original dynamic and allows it to be present during the interaction. The second interpretation is more detrimental in that it describes a very real division - one in which there is a lack of communication, growth, and healing. Though there is no debating the fact that there is a desire from Indigenous populations for political allyship between Indigenous and non-Indigenous (the desire, as Land puts it, is ‘self-evident’), there is no complete understanding within these populations and communities as to how this should take form. During my most recent trip to the Cattaraugus reservation, I was explaining to a new friend, an enrolled

member of the tribe, the reason for my being there. I briefly outlined the premise of my research and how much I had learned from interning over the summer by simply being invited into the conversation. As I put it, I had gracefully been ‘given a seat at the table,’ and at this moment it was quite literal, as we sat down over a Nation-wide lunch. She spoke to me quite plainly, stating how she did not understand why the Nation could be so quick to close themselves off. Grace, as we will call her, said she saw the reservation as a bubble not wanting to let people in and not really sending people out either. “I think having people who want to learn, come to the reservation, is really important.” She explained that “it allows us to learn about the most recent research in the field, while also allowing us to tell others about who we are, to spread awareness about our people, and to educate the larger population.”

Robbie Thorpe, an Australian Aboriginal activist explained that he views the two-way education as crucial. Breaking up the dialogue into the education of Indigenous people, and the education of non-Indigenous people. “It’s hard to know who has been more deprived of education” (Land, 2015, 82). From both my personal experience, as well as from reading the testimonies of many other Indigenous activists, there is a firm belief that educating others is extremely important. So the question then becomes, on whom does the job of educating fall, or is it reciprocal?

Land argues that it is very important for non-Indigenous people who strive to be supportive of Indigenous people to educate themselves and those in their spheres of influence in order to lessen the burden on Indigenous people to provide education (Land, 2015). I completely agree and would add that it is equally imperative that through their ‘educating,’ non-Indigenous people find a way to incorporate the actual voice and words of their Indigenous friends. A task which I truly hope I executed throughout my work. I do not wish to convey that I fully

understand the lived experience of being food insecure on the Cattaraugus reservation, nor the way that the historical oppression of being ‘dispossessed’ feels, since I am a non-Native. Instead, I hope to first learn from and listen to as many sources as I can, and then serve as a channel through which members and issues of the Nation are expressed and addressed.

One particular example of when my identity as a non-Native outsider was clearly felt during my work was one afternoon at the farm during my most recent trip to conduct interviews. As I was sitting at the table having just finished celebrating Mike Snyder’s birthday, an older gentleman joined us at the table after most people had gotten up from lunch and gone back to work.

“Hi I’m Jim,” as he stuck out his hand.

“Hi I’m Abbe... I’m here hanging out with Mike at the farm just asking some questions about food as a part of a project I’m working on.”

“Well who are you?” he protested

Mike chimed in, “She worked with us up at the farm this past summer when we didn’t have any other workers up here yet, and really needed the help.”

It was this validation from someone he considered ‘one of his own’ that finally took away a bit of the glaze of confusion and mistrust. I had picked up the look on his face from the moment he realized I wasn’t Native. After Mike had interjected, Jim may have no longer questioned my right to be there, but he definitely still had something he felt he needed to get across to me.

“So food huh...well you know the story of the squash... it’s one of genocide.”

Genuinely (and I realized later extremely naïvely) confused, I responded “Squash?”

“Oh yeah...” he continued. “When Europeans came across on their boats they were sick, tired, and we took them in. We nursed them back to health with our knowledge, our lands, and our squash. Then what did they go on to do? Kill our people.”

In the same way that Mike Snyder was able to vouch for my presence in the space, Dr. Vidali did the same for me to be able to first intern with the Agriculture Department in the first place. Through her years of work with the Seneca Nation of Indians and years of work on larger issues of Indigenous sovereignty in the New York area, she was able to introduce me to Mike Snyder in the first place. The relationships that she had built over the years set the foundation for the subsequent interactions and relationships that I was able to go on to form during my time there.

In addressing my own positionality as a researcher on the Cattaraugus reservation, I would be remiss if I did not also address the implicit bias and inherent lens through which I come to view this field of work. Self-understanding and self-reflection were key exercises in trying to come to a deeper understanding in this.

Land describes that self-reflection in the arena of sovereignty consists of “knowing ourselves, understanding ourselves, interrogating where our focus should be, and developing cognizance of the workings of race and privilege” and “it is the ability to apply and prioritize a range of sometimes contradictory principles in a particular context that is the mark of a sophisticated ally” (Land, 2015, 200). Through the entirety of my interest and subsequent work on the Cattaraugus reservation, I have continuously grappled with the internal dialogue of whether both my presence, as well as my physical interviewing and gathering of research as a non-Native outsider, is appropriate. When I first interned with the Seneca Nation Department of Agriculture in the Summer of 2018, I simply went to learn and help wherever they placed me. This ended up being on the farm, planting and building trellises, a role I was excited to fill. Working alongside Mike and Gerry, the heads of the department and Gakwi:yo:h Farms, they taught me everything from the way to plant different types of beans by hand, to the uniqueness of

the way the Seneca sunflower grows. Sunburned and sweaty at the end of every full day on the farm, I did not have as hard of a time questioning my role there, because I could truly feel the positive impact of my presence. I was learning so much every second of the day, while also being able to give back in exchange for that knowledge with my labor on the farm. Typically, it was just three of us working, but on one particular day, a group of students from the local language school had volunteered to help out. Mike introduced me to the students as being there to lend a hand (or two) on the farm, and just like that we all went off to work on the bean trellises. After an hour or so of threading the twine back and forth making small talk, one of the teachers from the school looked over at me and asked point blank,

“So are you Native?”
 “Actually no, I’m not Native...”
 “Oh, so are you up here to get your PhD or something?”

He didn’t mean it in an accusatory way at all, from what I could tell, but instead seemed genuinely curious as to why someone who clearly didn’t look like she was from the reservation, was working on the farm. I did not think too much about the comment at the time, but five months later when I went back to conduct further research on food security, I found myself reflecting on his comment. Though I am in no way equating my work to the work of non-Native scientific researchers who have come before me, it is important to explain the complicated history of researchers on the reservation. Land also talks about the idea of ‘difference’ and encountering the ‘other’ in the sense that there is a similarity in how white people see others as ‘strange,’ and how others in turn see white people. For many Native peoples, Land explains, “white people are not so much unusual or new as they are terrifyingly familiar” (Land, 2015, 105). During a lunch with Dr. Rodney Haring, an enrolled Seneca member living on the

Cattaraugus reservation who is a researcher and professor of oncology at Roswell Park Comprehensive Cancer Center with a background in social work, he explained the importance of closely monitoring all research regarding the Nation. As the author of the ‘Protocol for Review of Scientific Research Proposals on Territories of the Seneca Nation of Indians,’ Dr. Haring is clearly an expert on the topic. I used this document, in conjunction with Dr. Vidali’s continued guidance, to guide the approval process for my proposal to the SNI council. The protocol document begins with the words:

“Cultural appropriateness is an ethical factor that underlies research with any group. However, Seneca Peoples have structures of belief, customs, and historical experiences vastly different from that of researchers trained in mainstream universities. Special care needs to be taken when these same researchers attempt to apply methodologies to Seneca Peoples and our communities. It is often the case that researchers may be viewed negatively in not only Seneca communities, but Native communities overall. Native people have often been exploited, not just by governments and corporations, but also by researchers who have come in from the outside to study Native people. Often, Native communities, including the Seneca Nation, have not been informed of the study findings nor experienced any benefits of the research. Other instances include tribal information being lost or used in an unethical manner.”

– Dr. Rodney Haring as adapted from the Akwesasne Task Force on the Environment (ATFE) Research Advisory Committee (RAC) protocol.

With this in mind, I asked Dr. Haring about what led him to create this guide. Dr. Haring told me a story about a research study he remembered as a little kid. Nurses and scientists came into his grandmother’s home, drew blood from relatives, and snooped around the property, without any clear consent or explanation. The story he tells is not unique. ‘Blood Journey,’ a short documentary film produced and published by the *New York Times* tells the story of the Havasupai Nation, an extremely remote Indigenous population living in the base of the Grand Canyon, only accessible by helicopter, horseback, or foot. Heavily affected by diabetes, researchers visited the community telling the residents that they were working to find a cure, and requested blood samples. Eager to help put an end to the epidemic, residents willingly obliged.

What they didn't realize was the paperwork included a 'diabetes and other things' clause. Woefully broad and not orally explained to those signing, years later blood samples went on to be used in further research on topics such as incest and schizophrenia. In many of these cases the findings were used to negatively stereotype the entire Native community. Years after the samples were taken, Carletta Tilousi, a Havasupai who was listening to a dissertation presentation on her very own DNA, raised her hand to ask if the researchers were given explicit permission to study such things. That simple question resulted in the university spending over \$1.7 million fighting lawsuits by tribe members after the Nation went on to discover just how many various researchers had used their blood. For the Havasuapi Nation, "blood has deep spiritual meaning," which only exacerbated the feeling of betrayal (Harmon, 2010). Carletta Tilousi, who is also a member of the Havasupai tribal council, commented on the situation stating, "I'm not against scientific research." "I just want it to be done right. They used our blood for all these studies, people got degrees and grants, and they never asked our permission" (Harmon, 2010).

This complex and storied history of abuse towards Indigenous populations from outside researchers was something I carried with me throughout my time on the Cattaraugus reservation. In every thing I did, I worked to make sure that whomever I was interviewing understood the basis of the research, the intent of the findings, and the way in which I was hoping to produce positive and mutually beneficial results. In the middle section of the protocol, Dr. Haring lists three 'Guiding Principles' that outline the way in which the SNI strive to live. With peace, a good mind, and strength.

"Since the beginning of time, our Creator has told Seneca people to strive for **peace**... Peace has been defined as "the active striving of humans for the purpose of establishing universal justice. True peace is the product of a unified people on the path of Righteousness and Reason..."

When we work for peace, we develop a **good mind**, a good way of thinking. The Good Word refers to "the shared ideology of the people using their purest and most

unselfish minds. It occurs when the people put their minds and emotions in harmony with the flow of the universe and the intentions of the Good Mind or the Great Creator. The principles of Righteousness demand that all thoughts of prejudice, privilege or superiority be swept away and that recognition be given to the reality that the creation is intended for the benefit of all equally - even the birds and animals, the trees and the insects, as well as the humans...Reason is seen as the skill which humans must be encouraged to acquire in order that the objectives of justice may be attained and no one's rights abused."

When we work for peace and a good mind, we develop **Strength**. Strength flows from the power of the good mind to use rational thinking and persuasion to channel the inherent good will of humans to work towards peace, justice and unity to prevent the abuse of human beings and mother earth."

– Dr. Rodney Haring as adapted from the Akwesasne Task Force on the Environment (ATFE) Research Advisory Committee (RAC) protocol.

Peace, a good mind, and strength, serve not so much a specific set of guidelines, but instead as a set of guiding principles that subsequently outline the way in which all should interact with the SNI.

Introduction to the Thesis Structure

Research Question: In addition to the statistics that show us diabetes affects Native American populations at a disproportionate rate, what can the lived experiences of growing up on the reservation show us that will help promote a deeper understanding of how living in a food desert affects day to day life, in order to create more effective holistic interventions, and a deeper cultural understanding?

Throughout my research this was the guiding question that framed my investigation into the food landscape present on the Cattaraugus reservation.

The following chapter will outline some of the most important structural frameworks that play a large role in food deserts today. The background will start with a brief history of the Seneca Nation of Indians, which will include the recent land disputes / government relations with the Nation, an explanation of the reasoning for focusing on the Cattaraugus reservation

specifically, and a primer on the food climate on the reservation today. The second background section will explore the history of food commodity programs, both in the US and specifically on reservations across the country, in order to provide a greater understanding of the food climates historically available and accessible to those living on the Cattaraugus reservation today and those who came before them. The third background piece will focus on the current diabetes and obesity epidemic in the country today, and how that looks in terms of health disparities across various population groups. The fourth and final background segment will cover the topic of food insecurity, explain and define the terms that will be used in the study, and illuminate why food security vs. food sovereignty debates play out across Indigenous populations.

While the background section is imperative to understanding why the residents of the Cattaraugus reservation experience the type of food insecurity and disease prevalence that we see today, the section as a whole can seem a bit long and at times not as direct and to the point as the title ‘windows into lived experiences’ alludes to. In order to mitigate this concern, throughout the background sections there will be ‘windows’ placed throughout the text, directly relating the background information to what it looks like in the everyday lived context of being on the Cattaraugus reservation. These windows may include everything from direct quotes from enrolled SNI who live on the Cattaraugus reservation, images that I took while there, or outside sources that directly frame the area of reference, such as a map of the NY area etc.

Immediately following the background section is a literature review focusing in greater detail on scholarly studies specifically, to preface the current work that has been done leading up to this study in the area of food security. This section will include a brief overview of the history of this work, as well as highlight some of the most exciting recent studies from Native researchers, scientists, and anthropologists.

After the literature review will be an outline of the methodology that was used in conducting the research, followed by a section of analysis and findings, highlighted with narratives and first-hand accounts throughout. It is for this reason that the ‘windows’ will only appear heavily in the background section, as the later sections use the stories and experiences themselves to serve as the bulk of the results and conclusions.

Chapter II - Background

History of the Seneca Nation of Indians

“...those who find [Western New York] a dwelling place incomparable must remember that another race, and another nation, once dwelt here and loved it fully as well. Their campfires now are only ashes.”

- Arthur C. Parker, 1967, Anthropologist and early ethnographer of the SNI

This is only part of their story.

Seneca Nation of Indians’ Land and Government Relations Over Time

The Seneca Nation of Indians (SNI) are part of the Iroquois Confederacy or the Haudenosaunee, roughly translating to ‘People of the Longhouse.’ The Haudenosaunee Confederacy consists of six Nations: Seneca, Cayuga, Onondaga, Oneida, Tuscarora, and Mohawk. The Seneca, who are located furthest West geographically, are known as the ‘Keepers of the Western Door.’ The founding of the Iroquois Confederacy (over 400-800 years ago) was an unprecedented show of peace to other Native American Nations. The Iroquois constitution, also known as the ‘Sacred Tree of Peace,’ was one of equality and peaceful unity. And as the SNI website proudly remembers, the Senecas were usually the first to respond in defense of the

Great Confederacy whenever it was threatened (SNI.org Culture). It is within this context of peaceful unity and conversation that we turn to the United States' dealings with the Iroquois Confederacy.

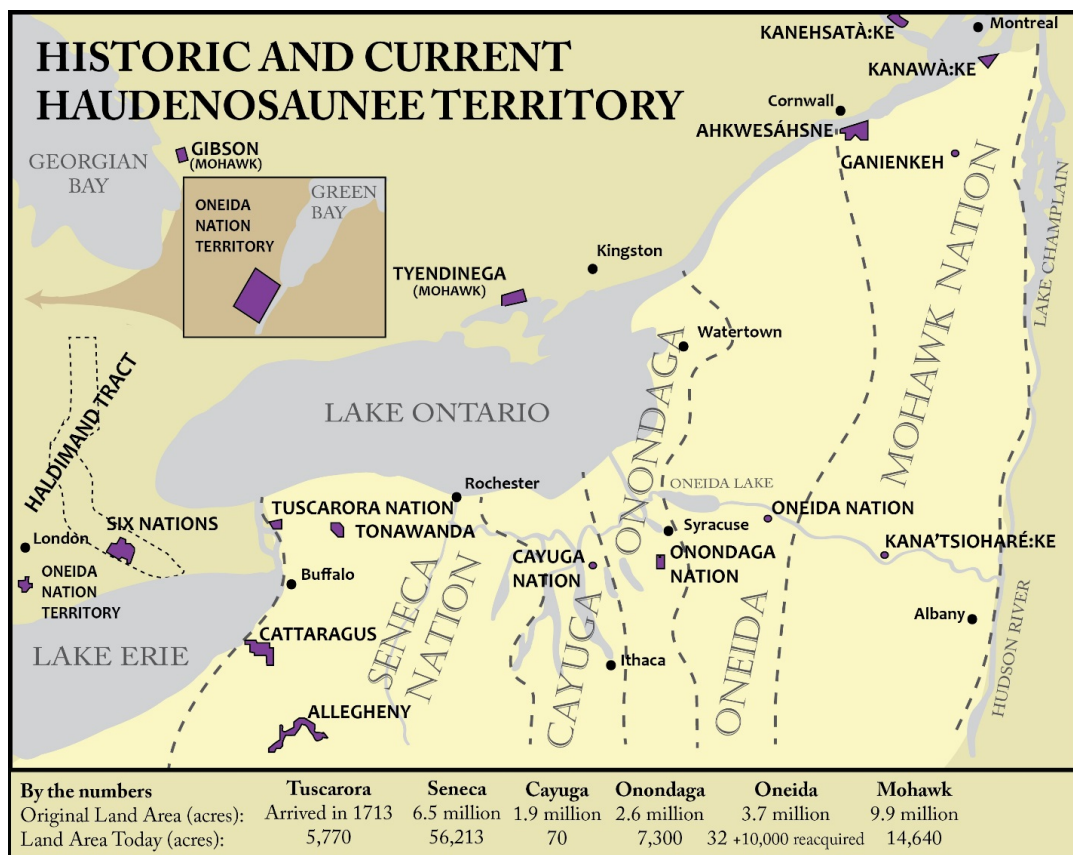
In 1784, the Haudenosaunee and the United States government signed one of the very first treaties between the two entities which was also the first treaty with any Indian tribe drafted by the US. The Treaty of Fort Stanwix established a 'Line of Property' that took large portions of what is now Kentucky, West Virginia, Pennsylvania, and even parts of New York from the Six Nations. In 1792 in a speech to the U.S. Senate, Cornplanter (councilor and high priest of the Cattaraugus Seneca) confronted the American legislators directly. He is quoted from this meeting saying -

“You told us that we were in your hand, and that by closing it you could crush us to nothing, and you demanded from us a great country as the price of that peace you had offered us, -- as if our want of strength had destroyed our rights. Our chiefs had felt your power and were unable to contend against you, and they therefore gave up that country... when that great country was given up, there were but few chiefs present, and they were compelled to give it up, and it is not the six Nations only that reproach those chiefs with having given up that country... all the nations who lived on those lands westward, call to us, and ask us, Brothers of our fathers, where is the place you have researched for us to lie down upon?” (American State Papers, 1792, 206-207).

The Treaty of Fort Stanwix was the first in a line of many treaties that dispossessed the Haudenosaunee of their land. In 1794, the Canandaigua Treaty was signed, in which the SNI gave up a large portion of their land in Ohio and agreed to new territory boundary lines. Formally written in Article 1. of the Canandaigua treaty, peace and friendship were 'firmly established' and in Article 3., it was formally stated that “the land of the Seneca Nation is bounded as follows... and the United States will never claim the same, nor disturb the Seneca nation, but it shall remain theirs” (Parker, 1967, 137). However, directly following the formalities of the Canandaigua Treaty, the lands that the United States had promised would

remain untouched were carved into 12 explicit Seneca reservations: The Canawagus, Big Tree, Little Beard, Squawkie Hill, Gargeau Flats, Caneadea (officially called Kaounadeau), Oil Spring, Buffalo Creek, Tonawanda, Alleghany River, Cattaraugus, and Canadaway Reservations (Parker, 1967, 139-141). A once contiguous expanse of land and community was literally and symbolically chopped into 12 different sporadically placed pieces. This had a profound impact on the Seneca way of life. Previous village ways was overturned as communal living was made much harder with discontinuous land. Agricultural practices also began to dwindle and change as a result of limited access to land and other natural resources and a disruption in community farming efforts. The subsequent century saw further processes of land dispossession and disruption of traditional Seneca structures of governance, as well as the formation of three separate political entities among the Seneca people. In the present context there are three different federally recognized tribal governments: The Seneca Nation of Indians (formed in 1848), the Tonawanda Band of Seneca (formed in 1857), and the Seneca-Cayuga Nation (formed in 1937). The latter is located in present-day Oklahoma, whereas the other two remain on their historical territories. See Map 1 below.

Figure 1: The Two Row Wampum Renewal Campaign – “Historic and Current Haudenosaunee Territory”² <http://honorthetworow.org/learn-more/haudenosaunee-territory/>



“To recover a sense of what native farming once was, we must cultivate our imaginations—allow pollen grains to bloom, becoming mixed fields... America before Columbus was not a wasteland, nor an untouched wilderness. It held home ground for farmers; vast territory for hunter-gatherers; and places where farming and foraging fused themselves into the same cultures. To feel at home here, to learn from our predecessors on this continent, each of us must kneel on the ground, put an ear to the earth, and listen.” – Gary Nabhan

Recent Land Disputes and Current Demographics

Today the Seneca Nation of Indians is the largest of the Six Nations that make up the Iroquois Confederacy, with a population of over 8,000 enrolled members (SNI.org, Home). The land possessed by the SNI has declined over time and treaties, going from the 12 reservations

² In the map above the Allegany territory is spelled Allegheny, which was the early French spelling. Allegany, which is closer to the English pronunciation, is more commonly used today.

mentioned above, to three today. (However, Oil Spring Reservation, one of the three current SNI reservations, is approximately one square mile and is not home to a single enrolled member of the SNI. So more accurately, there are two reservations currently inhabited by enrolled members of the SNI). The two inhabited reservations are the Allegany and the Cattaraugus Reservations. The Allegany Reservation borders the Allegany river and is home to the City of Salamanca, which brings in a large non-Native population to live on the reservation. Geographically, the current day Allegany Reservation looks significantly different than it did less than 60 years ago, before construction on the Kinzua Dam was started in 1960 by the U.S. Army Corps of Engineers. In “The Evolution of the 1939 Flood Control Act,” which was produced by the Office of the United States Army Corps of Engineers themselves, the Kinzua Dam was considered a ‘necessary endeavor’ in order to save the industrial steel powerhouse of Pittsburgh (Arnold, 1988, 63). What they failed to note in the report, was that in building the Kinzua Dam, the US government was responsible for completely submerging over 9,000 acres of SNI land, homes, communities, hunting / fishing grounds, and sacred burial plots (Rosier, 1995). In flooding the reservation lands, the federal government was clearly in violation of the 1794 Treaty of Canandaigua, which at the time was the oldest treaty recognized by the United States government.

During the construction of the dam, the U.S. government marketed the project to the public as a necessary move to reduce the risk of flooding and thereby ensure the safety of the American people. Yet, the government had ulterior motives. There was also a strong desire for increased revenue that the dam would bring, as well as the complete eradication of Native peoples as a part of the national agenda of removal and assimilation.

Although it was not on the same scale as the Kinzua Dam, the Cattaraugus Reservation of the Seneca Nation of Indians, located approximately 30 miles from Allegany and the City of Salamanca, has also experienced various land grab altercations over the years. One particular source of hostility between the Cattaraugus Reservation and the state of New York is regarding the development of thruways and interstates on reservation lands. As Hauptman recounts in his history of the SNI, ‘In the Shadow of Kinzua,’ by August of 1954, construction on over two-thirds of the New York State Thruway had already been completed well before state officials had even stepped foot on Seneca Territory to ‘negotiate’ with the Seneca Nation for acquisition (Hauptman, 2016). The chairman of the New York State Power Authority at the time and previous chairman of the New York State Council of Parks, Robert Moses, felt no regard for the Cattaraugus Reservation land. He believed the mere existence of reservations was an extension of the state’s generosity and that reservations were glorified ‘ghettos’ where everyone needed to “leave the reservation behind and enter the mainstream of American society” (Hauptman, 2016, 39).

Reason for the Focus on the Cattaraugus Reservation

The Cattaraugus Reservation, the second reservation still inhabited by enrolled members of the SNI, is currently home to 2,296 residents with 1,869 or 81%, self-reporting ‘American Indian’ (US Tribal Census). Without a city



located on reservation lands like Allegany, a much lower percentage of the population living on the reservation is non-Native. Allegany reported in the 2012-2016 Census a total population of 6,298, with only 1,669 or 26.5% of residents self-reporting or identifying as ‘American Indian’ (US Tribal Census).

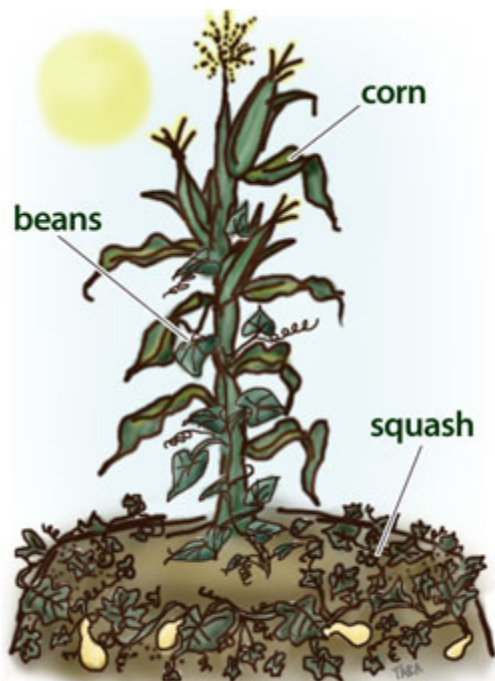
The Cattaraugus Reservation is now the site of the new Seneca Nation Department of Agriculture. Under the leadership of Mike Snyder, the mission of the newfound Department of Agriculture/Gakwi:yo:h Farms (meaning ‘Good Food’ Farms) is to bring culturally traditional foods back to the community. Over time, as Seneca lands declined and populations dwindled, the traditional ways of agriculture followed with them. It is the hope of the founders of the new Agriculture Department, Mike Snyder and Gerry Fisher, that they begin to make steps towards reclamation.

Serving as an intern with the Department of Agriculture during the summer of 2018, I was the very first farm hand / assistant to work on the new Gakwi:yo:h Farm land. Our summer crew consisted of Gerry Fisher, Mike Snyder, and me. Over the course of a few weeks we had built four bean trellises, hand planted over eight rows of different traditional beans such as Cranberry beans and Bearpaw beans, two rows of three sisters mounds (consisting of corns, beans, and squash), Seneca sunflowers, zucchini, tomatoes, different types of peppers, and a full herb garden. Just in my brief time as an intern on the farm I began to see just how important going back to the land and the cultivation of these traditional foods was to people in the community.



An Introduction to the Cultural Importance of Food to the SNI

The Haudenosaunee creation story, the Thanksgiving Address, and the yearly harvest festivals that celebrate the passing of time, are all based around stories of food and farming. The Haudenosaunee / Iroquois creation story tells the story of how the earth, Turtle Island, was formed when Sky Woman fell from Sky World. When Sky Woman fell, she landed on the back of a turtle who was in the middle of an expansive ocean. Before Sky Woman had fallen, she had become pregnant. Once on Turtle Island she gave birth to a daughter. While there were no men yet on Turtle Island, the daughter married Wind and ended up becoming pregnant as well, and giving birth to twin boys. The first was born the natural way, but the second son was born from her armpit, and Sky Woman's daughter ended up dying in childbirth. Sky Woman went to bury her daughter on Turtle Island and from her grave grew three sacred plants - corn, beans, and squash. These three plants became known as the 'life sustainers' and grew in perfect harmony. The corn grew straight and tall, providing a natural structure for the beans to grow up, while the squash protected the plants at the base from unwanted pests.



**Direct-Sow, Easy-to-Grow:
The Ancient *Three Sisters* Method**

From this creation story, comes just one of the many legends of the Three Sisters known as Deohako, (pronounced: Jo- hay- ko), meaning the “life supporters.” (Jemison & Ashworth, 2016). The Haudenosaunee Thanksgiving Address is the central prayer and message of peace that has traditionally been said at the beginning of each social or religious gathering. Giving thanks for each life-sustaining

force in turn, from the Four Winds to Grandmother Moon, it is a way of connecting everyone back to the nature from which we all originate. Giving thanks to the plants takes place in three parts. First, the Haudenosaunee give thanks to The Plants, for sustaining many life forms, and say a prayer for their continued life for generations to come. Next, they give thanks for The Food Plants, those that are harvested from the garden and have given the people and other living things life for years. Gathering all the Food Plants together, they give thanks and blessings. Thirdly, they thank The Medicine Plants who are always waiting and ready to take away sickness. At the end of each 'Thanksgiving Address' to various life forces, the phrase 'Now Our Minds Are One' is spoken in unison (*Thanksgiving Address*).

The harvest festivals are yet another way that the community life is shaped around food and the proper harvest seasons. With Spring comes the Maple festival, and a thanksgiving offering for the sap and to the trees. Later is the Planting festival, followed by the Strawberry festival in June. The Corn Thanksgiving takes place in early autumn and then, the festival of the harvest. All of these traditions, the creation story, and the practice of giving thanks whether that be through the thanksgiving address itself or in a harvest festival, emphasize the fundamental belief that the Great Power exists in all nature, with every natural thing in existence having a spirit (SNI.org, Culture). Though the Creation story, the Thanksgiving Address, and the harvest festivals are all still important parts of the culture among the SNI, there is a profound disconnect between the cultural importance of food and the physical manifestation of food consumption today.

Food Groups and Programming on the Reservation Today

Prior to the Seneca Nation Department of Agriculture's founding in 2017-18, there were smaller programs under the umbrella of the planning department. One of these groups was called 'Food Is Our Medicine,' and was founded with a mission to "encourage a return to healthier eating habits" (Food Is Our

Their 'About' statement reads, "The goal of the group page is to restore the health and well-being of the Native community by reinstating Native American food systems, native models of nutrition, indigenous land management and sustainable food production practices and the rich cultural knowledge of stories, songs, recipes and practices that go with traditional food ways" (Food Is Our Medicine).

Medicine). Though all formal group programming on the reservation has stopped with the formation of the Department of Agriculture, they still maintain very active Facebook group that is also named 'Food Is Our Medicine.' Serving as a place for both Indigenous and non-Indigenous individuals to engage in a conversation around traditional foods, share recipes or videos, and ask questions to one another, the page actively aims to both cultivate native foods as well as encourage people to include them in their daily diet. The Facebook group is still a vibrant community of people from not just the SNI, but from across the US, who share traditional recipes and food related events and promote Indigenous food sovereignty.

Another current source of food justice activities on the reservation comes in the form of cooking classes held by one of the new heads of the SNI Department of Agriculture, Gerry Fisher. Well-known throughout the area for her culinary skills, Gerry gives cooking demonstrations not only on the Cattaraugus reservation, but also to Allegany, teaching people how to can fruits and vegetables as well as how to prepare various traditional dishes such as tamales and fresh corn soup. Before the Department of Agriculture began, Mike and Gerry also worked with Food is our Medicine on the White Corn Project. Originally started as a vision from

John Mohawk, a historian, activist, and member of the SNI Turtle Clan; the White Corn Project was one of the first in the area to bring back traditional staples on a larger scale. Using heirloom seeds that date back over 1,400 years, the goal of the White Corn Project is to bring back the farming, distribution, and consumption of the Iroquois White Corn to Native communities as well as to offer it to the public at large (Ganondagan). All of these aforementioned groups were

“The sincere hope of [the project’s original founder], John Mohawk, was that by putting Native food back on our tables, we might grow healthier... could it be possible that if we return to a more Native diet, we could really combat diabetes?” (Waterman Gray, 2018).

- Pete Jemison, Ganondagan Historic Site manager, Seneca Nation of Indians Heron Clan

founded to restore traditional foods and practices, in large part to fight against the commodity foods that had taken their places.

In less than a decade’s time, active farming among Native populations in the United States collapsed from 68% in 1940 to less than 6% in 1980, which not only led to a change in the foods that were made available

the people, but it also led to significant lifestyle changes as a decline in active farming resulted in less physical activity and a more sedentary lifestyle (Chino, Haff, & Francis, 2009). Due largely to the substantial decrease in available farming lands, it became an uphill battle for those whose families had historically been farmers to continue in the same ways they always had. It was largely due to this drastic decline in agricultural practices that the amount of fresh food available to the population decreased, malnutrition increased, and a need for widespread structural change and assistance became undeniable.

Food Commodities and Assistance Programs

“Control the food, control the people” — Henry Kissinger

History of Commodity Food on Native American Reservations

Various commodities came as reparations offered by the United States government to tribal Nations in exchange for Tribal lands. One common commodity offered to Native nations was food. Although the food looked very different from Nation to Nation, as well as over time, one of the most popular programs (and one that is still in effect today) is the Federal Distribution Program on Indian Reservations (FDPIR). A subset of the United States Department of Agriculture (USDA), the FDPIR serves to provide monthly packages of food to Indian households which fit certain criteria. In order to be eligible for the FDPIR program today, households must be certified based on income received every 12 months, as well as contain at least one person who is an enrolled member of a Federally-recognized tribe.

The Food Stamp Act officially passed as legislation in 1964, when a mission of “strengthening the agricultural economy and providing improved levels of nutrition among low-income households” became a serious priority (A Short History of SNAP). Though the program may have initially seemed helpful, there was one glaring omission. The act was written into existence without mention of a single Native population within the United States. It was not until The Food and Agriculture Act of 1977, almost 15 years later, that a bill was passed establishing ground rules for Indian Tribal Organization administration of the same Food Stamp Program to be made available on reservations (A Short History of SNAP). When the Food Stamp program was first put into action, malnourishment was one of the main problems facing populations living on reservations, as they tended to be located in largely rural, low-income areas. However, this did not remain a major concern for long. It has only been in the past few generations that obesity

has become a health problem among American Indians and American Native populations (Welty, 1991). As recently as 1967, a survey conducted within a Navajo community revealed that malnutrition was one of the highest priority health concerns and it was in solution to this research that widespread feeding programs were then made available to Native populations (Welty, 1991). These feeding programs consisted of food packages filled with ‘commodity foods’ which tend to be both high in calories as well as fat content in an effort to quickly combat malnutrition. As far as the issue of malnutrition goes, these programs were extremely successful. However, such a rapid change in caloric intake can be a challenging adjustment for the body’s metabolism. The change in caloric intake from deprivation to excess took place over just a few years as the food programs artificially “created food security where it didn’t exist with foods that were higher in fat and calories and lower in fiber than American Indian traditional foods” (Chino et al., 2009, 282). As Dr. Thomas Welty put it, “in essence, the problem of malnutrition was solved and replaced by the problem of obesity and its sequelae” (Welty, 1991, 1616S).

The reason for such a sudden change in the physical manifestation of diet and nutrition in this particular population is two-fold. First, every one of the USDA’s food assistance programs greatly affects their recipients as they tend to rely heavily on the food provided. Further to this point, the quality of the foods is

“I was thinking about what I told you about how we just had to “eat poor”... well everyone on the res was raised on commodity food... that’s why my mom would just make the macaroni soup, see she had seven kids, there were seven of us so she would have the macaroni soup and then add a can of tomatoes, and just have that with fry bread and we could all eat. And you know they sometimes would give you the actual oil with it to fry it, but other times it was just animal lard. So we would most of the time fry the fry bread with lard not oil... and we still do sometimes haha it honestly tastes better that way anyways...”

- Interview Respondent, December 2018

even more critical for Native populations who have higher rates of poverty, unemployment, food insecurity, obesity, and diabetes (The Urban Institute, 2008). This is directly related to the second cause which is the number of American Indians who were previously, and are currently, enrolled in the FDPIR program. As of 2000 when the first report on the effectiveness of the Food Assistance Programs on Indian Reservations came out, nearly three quarters of American Indian WIC participants had annual incomes below federal poverty guidelines, “making them the most disadvantaged racial or ethnic group in the WIC population” (The Urban Institute, 2008, 24).

The report also noted that there was no way of differentiating between American Indians living on or off a reservation, so it was impossible to break up the number living on reservations who were enrolled members of the FDPIR program. This is important for my particular study, because of the hypothesis that those located on reservations experience higher rates of food insecurity and may not actually be receiving the appropriate levels of food assistance.

As of January 2018, 276 tribes were actively enrolled in the FDPIR, meaning more specifically, that 90,083 individuals were receiving a FDPIR food package. In 2017, \$151.0 million was appropriated for FDPIR, which translated to a reported \$47.69 million for the Federal share of administrative costs on a local level, and the remainder of money going directly to the food purchases (USDA, FDPIR). This means that approximately \$529.40 US dollars are being spent on the FDPIR food packages and local administration, per person, per month. A number that given the nutritional state of many of the food packages currently being received, could be much more productively spent.

Fort Berthold, a reservation located in North Dakota, has traditionally been home to the Manda, Hidatsa, and the Arikara. This area in the High Plains is more economically stable than other reservations due to its rich oilfield, yet Berthold has still not escaped the negative outcomes

of commodity foods. Similar to the SNI Allegany reservation, Fort Berthold was also subject to a dam and subsequent flooding of their lands. During the decades following the flood, inhabitants were left without their farmlands or ability to grow their own foods as they had previously.

Instead, about 40% of the population turned to commodity food programs. Dr. Wilson, the only doctor for the three tribes during this time, reports that the canned meat available in the

commodity food packages came with a nondescript white cap and contents that appeared to have been “scraped off the floor” (Jones, 2011). The outrage at the commodity contents prompted a Government Accountability Office investigation which reported that the only vegetable option was canned green beans, the only fruit was canned pineapple, and the only meat was canned luncheon meat. Moreover, during the last week of the month, many families were forced

During a brief breakfast meeting with Dr. Rodney Haring, an enrolled SNI and resident of the Cattaraugus reservation, he told me the story of the dog test he used growing up. He explained that many of the cans they got looked like they had been sitting in warehouses for years, many times having rust around the can’s edges. So with freshness being one concern, he also explained that the meats were some of the most questionable *looking*. So he created the ‘dog test’ where he would place the can down on the ground and if the dog wouldn’t eat it, that’s how he would know just to throw it out. “The salmon was one of the worst.” – Dr. Rodney Haring

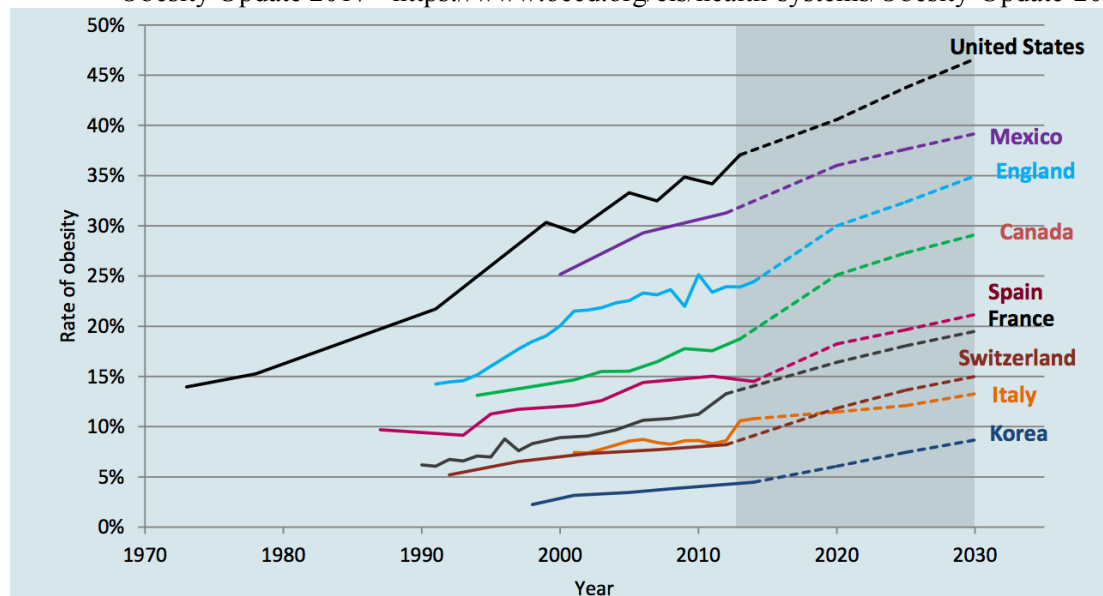
to make due with macaroni, rice, and cornmeal. A popular example of families having to make the most out of the food assistance packages is seen with the creation of fry bread. Despite being considered a staple food / dish across Indigenous populations in the US, fry bread was never traditional. Instead, it originated from the flour and shortening that often made up the surplus food the federal government which was then rolled over into commodity food packages.

Although fewer people rely on commodity food packages now, and the quality of the foods have certainly increased in nutritional value, fry bread is still made quite often. At the end of my

summer internship with the Agricultural department, they put together a ‘traditional’ lunch for my last day there. The main dish was Gerry’s famous bean soup and a fitting side for the meal was fry bread. “It isn’t technically a Native food” they explained, “but we still make it for powwows and gatherings.” This is a continued trend not only among the SNI, but many other tribes across the United States.

The Standing Rock Indian Reservation, in 1993, began a pilot project to try and provide healthier fresh foods in the commodity program. Jones reports that commodity foods look very different than they did right after the programs were launched. They now include ‘healthful fare’ with more fruits and vegetables. However, low-income Native Americans are now faced with a choice between the commodity foods program and the federal food stamps. Despite this positive upward trend of more nutritious options in the commodity packages, the younger generations are instead opting for food stamps so they can purchase “foods like chips and soda” (Jones, 2011).

“...with my kids, they’re 8 and 7... or 9! 9 and 7, so I’m just trying to get them out of the whole fast food kinda thing and back to the stuff I was eating when I was a kid, which was a lot of beans, you know we were here so we had wild game, they like deer meat, they like the the bison so far... so just to try and get them into it...”

Figure 2: “Projected Rates of Obesity”Obesity Update 2017 - <https://www.oecd.org/els/health-systems/Obesity-Update-2017.pdf>

The Obesity and Diabetes Epidemics

Health Reports and Disease Rates

Over the last century there have been a multitude of programs introduced in the United States to combat the detrimental health effects of obesity. The most common effects are heart disease and hypertension which are two of the highest causes of deaths among Americans today. Although a large percentage of the population in the United States is still at risk for obesity and diabetes, many of these programs have had an extremely positive impact. For example, as a result of the Healthy, Hunger-Free Kids Act of 2010, more than 30 million children now eat healthier school meals and snacks due to the heightened nutrition standards (USDA, Farm to School Census). Yet, despite initiatives such as school lunch programs, there is still a lot of work that needs to be done. The ‘State of Obesity’ suggests in their 2018 annual report, the progress we speak of is fragile, and “at risk of being halted or even reversed” which is

concerning due to the fact that they report “meaningful reductions in obesity have not yet been achieved nationally... and racial, ethnic, and geographic disparities in obesity rates persist” (The Robert Wood Foundation, 2017).

In collaboration the U.S. Department of Health and Human Services along with the Centers for Disease Control and Prevention (CDC) and the National Center for Health Statistics conducted a National Health Interview Survey in 2016. In this nation-wide survey, participants were asked to self-report what they believed to be their own health status. Respondents were able to choose between the following options: Excellent, Very Good, Good, Fair, and Poor. Disaggregated by race (for the proportion of those who identified strongest with one race - the options were White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander), the three groups included in Table 1 below, represent the populations in this study.

Table 1: Based on the question “Would you say [person’s] health in general is excellent, very good, good, fair, or poor?”
Age-adjusted percent distribution (with standard errors) of respondent-assessed health status, by selected characteristics in the United States (2016)

https://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2016_SHS_Table_P-1.pdf

<i>Race</i>	All Persons	Excellent	Very Good	Good	Fair	Poor
<i>White</i>	100	37.7 (0.37)	31.9 (0.34)	22.0 (0.28)	6.6 (0.13)	1.8 (0.06)
<i>Black or African American</i>	100	32.4 (0.77)	27.5 (0.71)	26.6 (0.68)	10.7 (0.40)	2.9 (0.19)
<i>American Indian or Alaska Native</i>	100	25.0 (2.39)	25.5 (2.17)	31.9 (3.54)	12.7 (1.38)	5.0 (1.01)

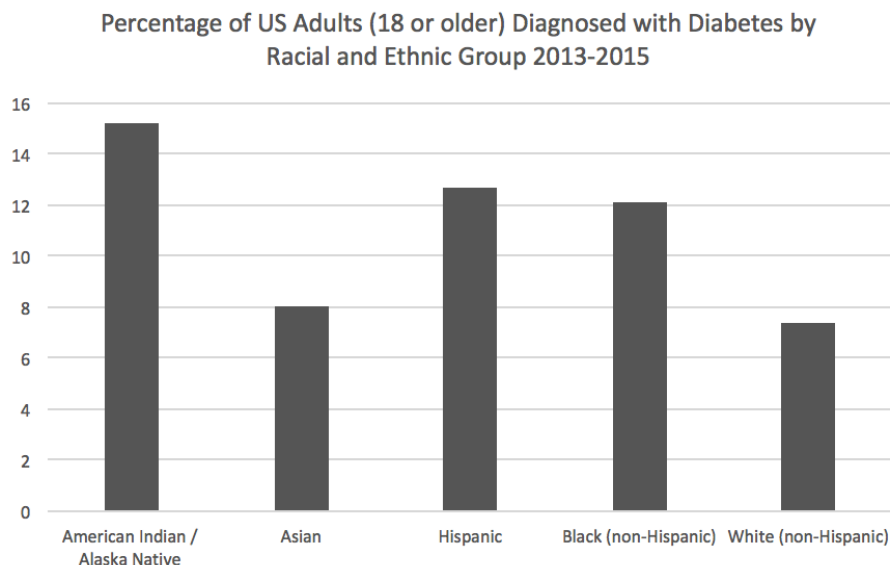
Though there are certainly questions of health literacy that come into play when answering this type of health survey question, the trends evident in the data provided above are still significant. One particular discrepancy in survey responses would be variance in the

meaning of “good” health. The definition of good may differ substantially from person to person as well as within cultures. That said, there are multiple sources using different questions and health definitions that report data trends similar to these presented. The lowest percentage of reporters of “Excellent” health, and the highest percentage of reporters of “Poor” health, of all the races reported on the original list, were “American Indian or Alaska Native.”

There are multiple empirical reasons for why American Indian / Alaska Native populations repeatedly rank last on health indicators in the United States. The Indian Health Service (IHS), a branch within the Federal US Department of Health and Human Services has found that the reason this population experiences a lower health status, (such as a lower life expectancy and disproportionate disease burden) is due to “inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences” (Indian Health Service).

Turning from general health status specifically to diabetes rates, it is well-documented that diabetes incidence rates are much higher among Native populations than among the average American population (Mihsuah, 2016). The CDC does not differentiate by individual Nation, but the 2017 Diabetes report card, which aggregated data from 2013-2015, has been republished below:

Figure 3: Adapted from CDC 2017 Diabetes Report Card-
<https://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2017-508.pdf>

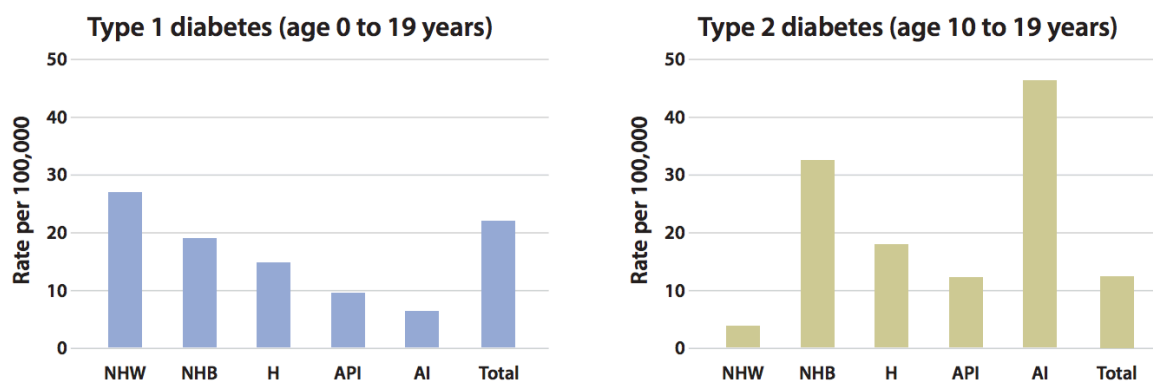


The disparity is quite clear in the graph above, but the data do not separate Type 1 and Type 2 diabetes, despite the fact that Type 2 is much more prevalent across the country, accounting for about 90-95% of all diabetes cases (CDC, 2018).

Although the difference in prevalence rates has been extensively documented, it is also crucial to understand that these numbers vary significantly between populations and Nations. Specific to the SNI, the Seneca Diabetes Foundation reports that 1 in 2 Seneca Nation adults have diabetes (Seneca Diabetes Foundation). This prevalence rate of approximately 50% can be compared to the current rate for the average American, which is around 9.5% (CDC). Additionally, the Seneca Diabetes Foundation reports that their young people are getting diagnosed at a much earlier age compared to the general population as well. These are significant statistics on their own, but when compared to the other Six Nations of the Iroquois Confederacy, the SNI diabetes rates remain the highest. Not all six have reported recent rates but the most

accurate data available include the Mohawk reporting approximately 21% of the population (Martinez, 1993) and Oneida approximately 9% (Shultz, 1996).

Figure 4: Type 1 and 2 Diabetes Rates broken up by Race / Ethnicity
 CDC – National Diabetes Statistics Report 2017 - <http://www.diabetes.org/assets/pdfs/basics/cdc-statistics-report-2017.pdf>



Depicted in the graph above, there is a clear spike in American Indian youth with Type 2 diabetes as compared to Type 1 and Non-Hispanic Blacks as the second most affected population.

Diabetes, Defined

To briefly outline the definitions of diabetes as they relate to the context of this study, ‘diabetes’ is a disease in which the body’s blood sugar, or blood glucose, is too high. Blood sugar / glucose usually comes from what is eaten / consumed food, and provides the body with a lot of the energy it needs to get through the day and live a normal, healthy lifestyle. The mechanism through which the body takes the food that you consume and converts it to energy is by the hormone insulin. Insulin is produced by beta cells located in the pancreas. Insulin helps take the energy from the food and redirect it to cells throughout the body. When this process goes awry, and one’s body does not produce enough insulin to properly break down blood

glucose, it can cause a build-up in the bloodstream. This can have various negative side effects including extreme fatigue, high blood pressure, kidney problems, heart disease, nerve damage, among many other things. Diabetes contributes to profound negative health outcomes that can affect the entire body and even result in death (Mayo Clinic, 2019).

The two classifications of diabetes are ‘Type 1’ and ‘Type 2.’ A third category that is not as well-known is ‘prediabetes,’ and is the stage typically right before a person progresses to Type 2. Type 2 is the most common type of diabetes across the United States, affecting 8.6% of the population compared to Type 1, with 0.55% (CDC). If you are diagnosed with Type 2, this means that you have a blood sugar, or A1C as it is measured, of above 6.5%. This means that your body is no longer producing enough insulin, or insulin the body is producing is not working very well, and it leaving behind a build-up of glucose in the blood. Although it is possible to develop Type 2 diabetes at any age, it becomes more prevalent as individuals age, and has been shown to have a direct link to diet and physical activity. Some of the most common risk factors associated with Type 2 diabetes include age, physical inactivity, obesity / being overweight, smoking, having high blood pressure and high cholesterol rates, family history of diabetes, and race/ethnicity. Type 1 diabetes however, is not closely linked to lifestyle and instead includes risk factors such as autoimmune deficiencies and genetic predisposition. Also unlike Type 2, Type 1 signifies that the body

I noted in field notes from the farm that there was, at least on some level, an acknowledgement within the population that the rates of diabetes that they had on the reservation were correlated with exercise. One such example came from one of my first days on the farm when we were building the bean trellises. In order to hang them we had to measure out lengths of twine and this day language students were helping out. As one of the older girls started walking back and forth measuring out twine she commented to all of us with her, “preventing diabetes one step at a time, am I right?”

produces absolutely no insulin, and therefore the person is ‘insulin dependent.’ Type 1 diabetes is more prevalent among younger populations. Due to the fact that there is no clear understanding of what causes the body’s immune system to turn and attack its own beta cells, halting the producing of insulin, there is no cure for Type 1 diabetes. Type 2 similarly has no ‘cure,’ but there are clear ways to slow the onset of Type 2 if diagnosed with prediabetes. Additionally, if one is diagnosed with Type 2, losing weight, closely managing food consumption, exercising, and various medication / treatment plans have been shown to greatly improve quality of life living with Type 2 diabetes (Mayo Clinic, 2019).

Food Insecurity

Food Landscape Definitions

The topic of food security has become much more widely explored over the past decade and out of that exploration, a variety of definitions and terms has evolved. For the purpose of this study, I will be using the United States Department of Agriculture (USDA)’s definition of food insecurity, as well as their definitions for the four levels of food security that are currently used in the U.S. Census.

Food insecurity, the USDA states, is “a household-level economic and social condition of limited or uncertain access to adequate food” (USDA, Definitions of Food Security). The USDA also defines a scale from ‘High food security’ to ‘Very low food security,’ within which there are four categories used to place people and families.

1. High food security = no reported indications of food-access problems or limitations.

2. Marginal food security = one or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.
3. Low food security = report of reduced quality, variety, or desirability of diet but have little or no indication of reduced food intake.
4. Very low food security = multiple indications of disrupted eating patterns and reduced food intake.

(USDA, Definitions of Food Insecurity).

The United States tends to evaluate households based on their food insecurity and assesses need from the bottom–up. The other side of food insecurity is food security. At the FAO World Food Summit in 1996, scientists and researchers produced the following statement: “Food security is achieved when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (UNICEF, Food Security).

This definition has broadened the convention of assessing food needs beyond the precise number of times a family reports going without food, to include factors such as nutrition and preference. Though the USDA still rates families based on which level of food insecurity they meet, and not the absence of security as defined above, nutrition and preference are just as important, in many cases, as the absence of food.

With attention to the food landscape in the United States and around the world, there has been increased consideration of another classification beyond that of food security and insecurity. Especially when studying Native and Indigenous populations as well as those who grow their own food, an increasingly important term is ‘food sovereignty.’ As the focus of the

food sovereignty movement has greatly expanded in the past few years, there is no universally accepted definition. One of the more commonly used definitions however, is the one described in the Declaration of Nyéléni, which was read at the first global forum on food sovereignty in Mali in 2007. The Declaration states:

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems... Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social classes and generations” (World Democratic Forum, 2007).

Food Insecurity Today

In 2014, the RTI International, formerly the Research Triangle Institute, produced a comprehensive report of food security in the United States titled ‘Current and Prospective Scope of Hunger and Food Security in America: A Review of Current Research.’ The report covers everything from the determinants of food security, to an evaluation of the strategies and programs that have been put in place to reduce and prevent food insecurity. The report’s summary notes that the spike in food insecurity brought on by the Great Recession in June of 2009 remained at an all-time high from 2009-2012, despite the end of the recession. The households who reported the highest rates of food insecurity by far were those with children, with persons with disabilities, and with people of color. These findings and trends have been consistent for years. The report states, “Despite public, private, and community responses to food insecurity, these disturbing trends suggest that we lack a fundamental understanding of the landscape of factors that influence the rates of food insecurity, rates that ultimately have serious health and economic consequences on millions of Americans” (RTI, 2014, ES1). It is the unchanging nature of these data that is the most concerning. The research highlights that none of

the various interventions or food commodity roll-outs are doing anything specifically to help families with children, persons with disabilities, and racial and ethnic minorities. The Universal Declaration of Human Rights includes the right to a standard of living adequate for health and well-being *and* for that of their family, *including food*. Yet the word ‘adequate’ is often taken advantage of, as the definition of food security, access to ‘sufficient, safe, and nutritious food to meet their dietary needs and food preferences,’ is instead evaluated by whether or not households report ‘indications of food-access problems or limitations.’ Since the RTI report’s publication in 2014, there have been numerous strides to help close this gap in food insecurity literacy among the US population. However, in simply looking at the rates of food insecurity still present today, and the racial/social hierarchy within these rates, it is clear there is still a substantial amount of work that needs to be done before the food access landscape begins to change.

The factors proven to have the largest effect on a person's food security include: race, socioeconomic status (SES), children in the household, members with disabilities in the household, and single-parent households. Also included within the RTI International report is a diagram to help outline the interconnected web of factors affecting the food climate of a household. Their diagram (which has been provided below) consists of four underlying domains:

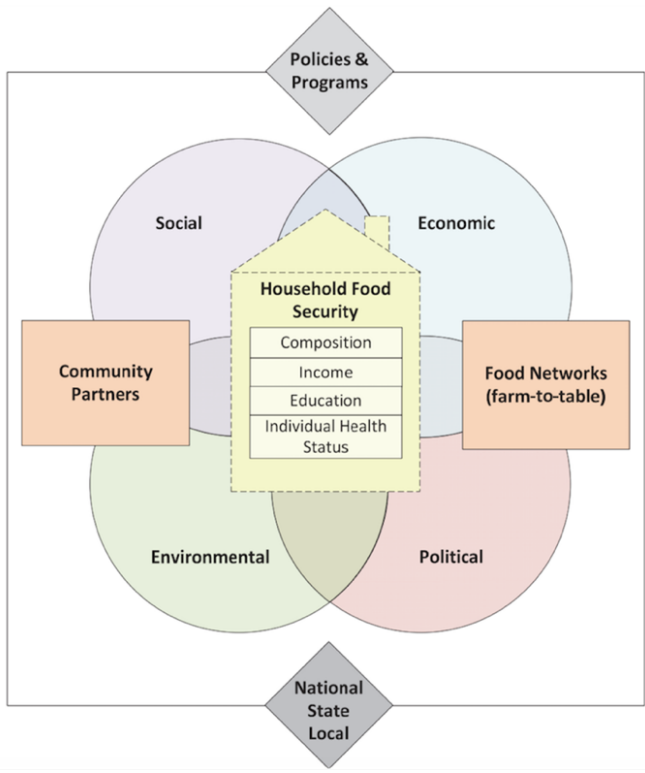
“I think one of the biggest problems that we have [on the reservation] is most of our workers are single parents so when they get through working, unless they learn to plan ahead, they don’t have anything ready for their family, so they’re grabbing pizza, subs, fast food”

- Interview Respondent,
December 2018

the social, economic, environmental, and political. In an orange box located on top of a foundation of the social and environmental, lies the ‘Community Partners’ which includes businesses, churches, food pantries, and grocery / convenience stores that are all part of the food environment available to the household. The second box, ‘Food Networks’

symbolizes those that actually process and distribute the food to the household. All of these pieces are centered around one single yellow house, containing the household characteristics. These include composition (number of adults e.g., single parent households, and if children are present), income level, education, race and ethnicity, and health status of individuals (e.g., disabled). The factors which can then be added up to form both a qualitative and quantitative overall ‘Household Food Security.’ In the grey diamonds outlining the entire graphic are policies and programs, and the National, State, and Local government entities. These include larger policy and government programs such as food assistance programs, an especially important part of the equation for those living on the Cattaraugus Reservation.

Figure 5: “The Complex Tapestry of Food Security”
https://www.rti.org/sites/default/files/resources/full_hunger_report_final_07-24-14.pdf



Though the direct correlation and links between SES, race, and geography are explicitly shown above, not a single one of these factors is an unequivocal indication of a household's food security. An important characteristic of food security itself is its complexity. It is for this reason that so many proposed large scale interventions, whether from a federal or state level, have not been as successful as anticipated. For a food security intervention to be as effective as possible, as with most public health interventions, it needs to be tailored directly to the community the program is designed to serve. One overarching food security policy or plan for every Native Nation in the United States is not going to be as productive, just as a blanket policy for every southern rural town will not adequately justify needs that a specifically designed and tailored program could.

To further explain the complexity of a household's food insecurity, a deeper investigation of any one factor can be applied. A household's income for instance, would most likely be the one element chosen as the most accurate predictor of food security. The bottom line seems to be, if you do not have the money necessary, then how would one be able to access sufficient nutritious food? The answer turns out to be much more complicated. Both the USDA and the US Census have repeatedly shown that households either at or below the federal poverty line (FPL), or 'low income,' can still be food secure whereas households above the FPL can be food insecure. There are various reasons for this, the first being those below the FPL are eligible for federal assistance programs such as SNAP / Food Stamps for which those above the FPL do not qualify. Alternatively, many households below the FPL may use certain 'coping strategies' to informally secure food or resources such as asking neighbors or family for food/ leftovers or money to go grocery shopping (RTI, 2014, 2-3). A recent National Research Council Institute of

Medicine report suggests there are four aspects that lead to income / SES not serving as an accurate prediction for the level of household food security:

1. The way households spend money and their general financial management skills may differ between households that are food secure and below the FPL, and those with more resources (above FPL) that are insecure.
2. Households below the FPL who are food-secure, may utilize a range of coping strategies (e.g., social networks) more effectively than some better-resourced households.
3. Better-resourced (above the FPL) households may have more fixed expenses (e.g., mortgages) which limit the funds left available for grocery shopping.
4. Better-resourced (above the FPL) households may interpret questions about food sufficiency differently from households that regularly experience food insecurity when reporting on surveys, as their ‘norms’ may significantly vary (Carman & Zamarro, 2016).

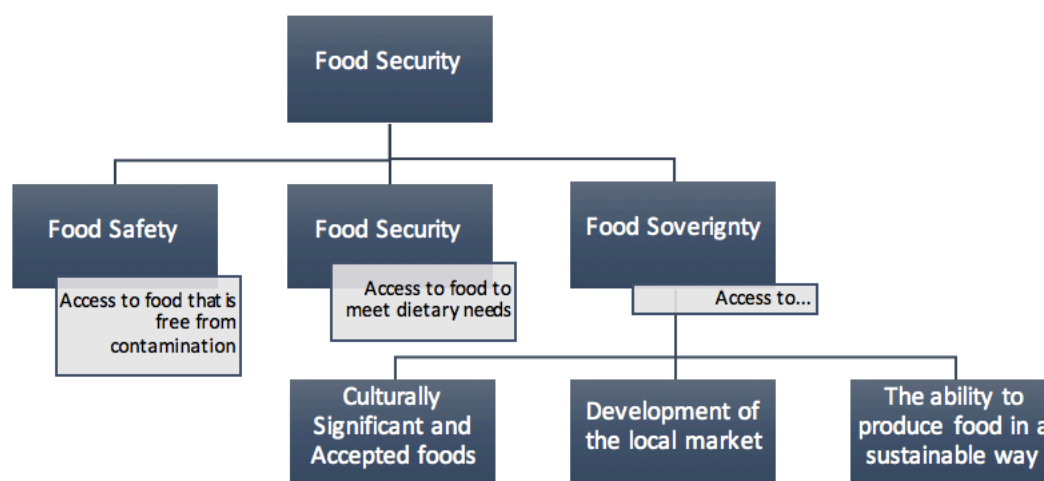
This is only one example, but it serves as a solid depiction for why is it so vital that multiple factors are considered in any discussion of food security, as no one factor can provide an accurate depiction.

Food Sovereignty Today

The term “Food Sovereignty” is used across many different disciplines and arenas today. It is an important concept in both the international food system and in policy development, to regulate the World Trade Organization (WTO) as well as the practice of dumping. For this project, the term is used as an overarching movement for those in subordinate food classes to

regain power in the food market, especially by farmers who do not end up making enough money to provide food for their own families. In this particular case, the bigger picture of food sovereignty is about rebuilding and rethinking relationships. From the relationships between large corporations and smaller family farmers, to the relationships between an average consumer and the land, the power dynamics have been askew for far too long. To further understand these interconnected terms and explain the focus on Food Sovereignty specifically, please refer to Figure 6 provided below.

Figure 6: Flow Chart of Food Security Terms and Relationships



Some may argue that the issue of sovereignty / cultural appropriateness is not as pressing a concern in terms of physical health and wellbeing as food security, yet the two typically go hand-in-hand. Increasing an individual's or community's food sovereignty or their ability to grow their own food in sustainable and culturally appropriate ways, typically also increases their food security. Food sovereignty fits squarely within the definition of food security and within the expansion to include not just physical, social, and economic access to sufficient food, but also in

making sure that food is both nutritious and meets dietary needs and food preferences. Christi Demitz, a Nutrition and Disease Prevention Educator at Michigan State University explains in her article “Food Sovereignty and Why it is Important,” that the Food Sovereignty movement was actually created in order to combat the inequalities present in food security / insecurity, and to “work towards food justice for everyone” (Demitz, 2018). She writes mainly about the increased presence of local food gardens and community supported agriculture and how beneficial they have become. Their benefits are attributed to both increases in healthy food availability, as well as specific benefits to the local economy and to promoting food sustainability within the community itself.

Community supported agriculture is typically defined as buying a small share in a farm or garden and in return receiving some of the produce from that land or other foods produced by the farm / garden during the year. Specifically, within Indigenous populations, a main player within this field is the Native

“Reclaim your
Responsibility.
Grow Food.”

- Mike Snyder

American Food Sovereignty Alliance (NAFSA). Their mission suggests that they are “dedicated to restoring the Indigenous food systems that support Indigenous self-determination, wellness, cultures, values, communities, economies, languages, families, and rebuild relationships with the land, water, plants and animals that sustain us” in order to “share, promote and support best practices and policies that enhance dynamic Native food systems that promote holistic wellness, sustainable economic development, education, re-established trade routes, stewardship of land and water resources, peer-to-peer mentoring, and multi-generational empowerment” (NAFSA, Home).

Given the definitions of food security and insecurity, as well as that of food sovereignty, and the various factors that play a large part in determining these concepts, what direct impact do they have and why does that matter? The presence of food insecurity in a household is attributed to a variety of serious health problems. The RTI report provides specific consequences from development delays in children who grow up in food insecure homes, to adults who are less prepared to become productive members of the workforce because of “diminished development of human capital, lowered productivity, and more sick days.” Elders or seniors who have retired, are 65 years-old or older, and are experiencing food insecurity may experience accelerated declines in health and cognitive function, as well as an increase in chronic disease development (RTI, 2014, 3-1). The most extensively documented and well-known adverse health outcomes of food insecurity are obesity and diabetes, which have also been shown to increase the likelihood of developing heart disease, having a heart attack, and suffering a premature death (Mayo Clinic, 2019).

Chapter III

Previous Genetics Research

Perhaps the most well-known studies in the field of genetic diabetes research among Indigenous populations are those that focus on the Pima Indians in Mexico and Arizona (Shultz, 2007). For years now, the Pima Indians have been the focus of genetic research due to their, originally unprecedented and shocking, rates of diabetes and obesity. The majority of the longitudinal studies concluded that the increased prevalence of obesity and diabetes among these populations was indeed genetic, and the result of a gene later dubbed the ‘thrifty gene.’ The idea of a ‘thrifty gene’ first stemmed from the theory proposed by scientist James Neel. In his paper,

“A ‘Thrifty Genotype Rendered Detrimental by ‘Progress’?,” he presents the idea that certain populations evolved a thrifty gene in order to maximize energy efficiency, storing calories as fat when they needed to be sustained over a longer period of time in order to survive environments prone to food scarcity (Neel, 1962). Over time, as this notion became more commonplace and was introduced to many of the populations which he referenced, the idea of diabetes and how the disease is to be managed began to change. Now a type self-fulfilling prophecy for those who were told they possessed the ‘thrifty gene,’ the attitude with which patients received a diagnosis was much more somber. Rayna Rapp, an anthropologist who has focused mainly on prenatal genetic testing, explains that biomedical descriptions and conceptualizations of a person’s genetic predisposition for disease can dominate their perspective on treatment. She notes that being labeled ‘at risk’ based on your genes can not only impact individuals’ behavior, but also the life decisions they go on to make (Sahota, 2012).

Over time, research into the potential genetic predisposition of the Pima Indians for obesity and diabetes shifted slightly away from a genetic focus to an environmental one. In 1993, a paper published by the American Diabetes Association titled “Effects of a Traditional Lifestyle on Obesity in Pima Indians” examined a community of Pima Indians living in Arizona, and compared it to a similar community of Pima Indians, living just across the border in Mexico. The paper concluded that both obesity and Type 2 diabetes were much less prevalent among the Pima Indians living in Mexico due to their ‘traditional lifestyle.’ This consisted of a diet filled with more complex carbohydrates and less animal fat, coupled with a lifestyle with widespread physical activity (Ravussin, 1994). This paper began to push back against the diagnosis and existence of a ‘thrifty’ gene, by comparing two genetically similar populations. These findings turned the focus of treatment back towards the importance of effective management and control.

In 2015, some of the same researchers returned to a similar study, once again comparing Pima Indians in Mexico to those living in Arizona, only this time providing clearer data on the influence of environment. In the new study, researchers found that the prevalence of Type 2 diabetes among the Mexican Pima Indians was around 6.9% compared to the Pima Indians living in the United States who had a rate of 38% (Shulz, 2015). Having typed the populations for DNA polymorphisms in this second study, they could clearly claim a similar genetic code between the two groups, and concluded that not only is Type 2 diabetes largely preventable, but that the changes from a traditional lifestyle to a Western lifestyle is the main cause of the epidemic of Type 2 diabetes across Indigenous populations, the entire United States, and the world (Shulz, 2015). Although these new findings became clearer to those in the field, education on the most recent research largely stopped there. Meanwhile, the genetic predisposition narrative still dominates reservations across the U.S.

Additional scientists and anthropologists have begun to apply similar thinking to Indigenous populations outside the of Pima Indians. Recent studies have compared diabetes prevalence in all Native tribes to all other races concluding that socioeconomic status and a higher association with ‘risk factors’ are the strongest predictors of diabetes rates for specific ethnic groups (Henderson, 2013). Another study analyzed diabetes intervention techniques and ultimately called for complementary clinical and lifestyle treatments, or a “multifactorial intervention” that included eating less than 30% of previously consumed calories from fat, exercising for 30 minutes at least 3-5 times a week, stopping smoking, and starting a medicine regime (Gilliland, 2001).

In terms of the history of diabetes research, the first major report specifically pertaining to the Seneca Nation of Indians, was published in 1978 in the *New York State Journal of*

Medicine titled, “Diabetes and Perception of Diabetes among Seneca Indians.” Judkins used an extremely problematic model by Wallace to extrapolate that the “Iroquoian personality is subject to a high degree of stress” which he claimed not only increased the chances of becoming obese, but also seriously inhibited the possible treatment of diabetes (Judkins, 1978). Further exploration of Judkins’ work will not be engaged here, as it is extremely offensive, but it provides a brief glimpse into the exceedingly Eurocentric views of research being produced at that time.

Researcher Highlights

The list of problematic cases continues unfortunately, but the consistent theme that I discovered in the majority of the previous and more recent studies, was that the researchers seldom involved the populations they were studying. They rarely asked the community for their own diabetes or food security narratives. That said, there are several prominent researchers in the field who have set a great example to the contrary and provided a solid framework for my research. One such scholar is Dr. Elizabeth Hoover, who is Mohawk, and has spent many years in nearby areas of Western New York. Her work “From ‘Garden Warriors’ to ‘Good Seeds,’ Indigenizing the Local Food Movement,” specifically studies Native American farming projects, similar to the SNI Department of Agriculture, and speaks to the importance of everything from heritage seeds and food sovereignty to environmental justice and health social movements. Whereas Dr. Hoover’s work focuses mainly on the cultural side of food and Indigenous food sovereignty, Dr. Devon A Mihesuah, an enrolled Choctaw of Oklahoma, and Chickasaw descendant, combines the two (cultural and biological) sides of the discussion. Serving as the head of the American Indian Health and Diet project, she has written multiple books and articles on the topic of Indigenous health and food security including “Recovering Our Ancestors’

Gardens: Indigenous Recipes and Guide to Diet and Fitness,” “Sustenance and Health among the Five Tribes in Indian Territory, Post-Removal to Statehood,” “Comanche Traditional Foodways and the Decline of Health,” and the “Historical Research and Diabetes in Indian Territory: Revisiting Kelly M. West’s Theory of 1940,” the last of which explains how West’s claims that diabetes is a mid-twentieth century disease, leaves out some of the most important factors. Mihesuah contends that in order to understand the health outcomes of today, one must look to the past.

“There were forces at work besides Indians just eating the wrong things and not exercising. Food-related illnesses and diseases are inexorably interrelated with historical and modern politics, economics, culture, environmental issues, and genetics” (Mihesuah, 2016, 12).

As Hoover was the main Native anthropological and cultural expert I used, and Mihesuah the main Native researcher who blended the two, Dr. Jennie Joe rounded out the group focusing in depth on the disease of diabetes and the physical health repercussions. An enrolled Navajo, Dr. Joe is a professor in the College of Medicine at the University of Arizona as well as in the Department of American Indian Studies, in addition to serving as the director of the Native American Research and Training Center (NARTC). Dr. Joe’s research mainly concentrates on programming and diabetes interventions, which helped to guide later discussions for future directions.

Chapter IV

Methods

Incorporating the work that has come before and is still being produced today, my focus was on digging deeper into the narrative of food insecurity and to assess the climate present among the residents on the Cattaraugus reservation. Table 2: Research Activities featured below outlines the different forms of data collection that were used throughout the research process, continuing to answer the question: In addition to the statistics that show us diabetes affects Native American populations at a disproportionate rate, what can the lived experiences of growing up on the Cattaraugus reservation show us that will help promote a deeper understanding of how living in a food desert affects day-to-day life, so that we might be able to create more effective holistic interventions and a deeper cultural understanding?

Table 2: Research Activities

Interviews	Plate Maps	Participant Observations	Fieldwork
15 interviews averaging 10 minutes each were held using the form questions provided in Appendix C. Interview audio was recorded and later transcribed.	17 Plate Map exercises were conducted with residents off of the reservation, with casual dialogues on the side (no audio recording, just field notes taken during the conversations) Approx. 3-10 minutes each.	Visited and observed the restaurants and convenience stores on the reservation, (Seneca One Stop, Seneca Hawk Restaurant / Travel Plaza, Crossroads Gas Food Smokes, and Wolf's Run) Either sat down for a meal when applicable or purchased something from the stores, a minimum of	For two weeks in June and July of 2018 worked as an Intern for the Department of Agriculture. Spent six full days on the farm, and the remainder of the time working in the offices sorting corn kernels, and exploring the surrounding area. Took field notes at the end of each day on the farm.

		15 minutes spent observing in each.	
Lead an informal focus group with 4 individuals at Gakwi:yo:h Farms, lasted approximately 30 minutes.	14 Plate Map exercises conducted with residents living on the reservation, with casual dialogues on the side (no audio recording, just field notes taken during the conversations) the drawings took approx. 3-10 minutes each.	Visited and observed the restaurants and convenience stores located just off of the reservation / places people reported doing most of their grocery shopping. (Save-a-lot, Dollar Tree, McDonalds, Aunt Millies, Tim Hortons, and Walmart) Either sat down for a meal when applicable, or purchased something from the stores. Spent at least 15 minutes observing in each.	Work on the farm included but was not limited to: <ul style="list-style-type: none"> - Constructing bean trellises - Hand planting multiple types of beans - Watering the three sisters' mounds - Shelling and planting Seneca sunflower seeds - Shopping for and installing tomato cages - Planting tomatoes, peppers, cucumbers, various herbs, and other plants.
1 interview with Mike Snyder, co-head of Gakwi:yo:h Farms, using both the form questions in Appendix C and others specifically tailored to his position, lasted 19 minutes. This interview was recorded and then transcribed.		<ul style="list-style-type: none"> - Sorted seeds with the employees of the Department of Agriculture - Observed a bison hide smoking - Attended the reservation-wide Christmas luncheon and played bingo at the Department of Agriculture table - Worked out on multiple occasions in the Cattaraugus Community Center gym and observed the center. 	Participant observation at events such as: an indoor lacrosse tournament held on the Cattaraugus Reservation, a trip to the Bison farm, the building where they make Maple, multiple smaller farms across the Cattaraugus reservation, and a tour of the ECLC plant beds, among other excursions.
Informal breakfast interview with Dr. Rodney Haring at Aunt Millie's to talk about the climate of			Spent two full days shadowing employees at the Seneca Art & Culture Center at

food as it relates to his work with cancer rates, and his own experience growing up on the reservation. Lasted approx. 30 minutes.			Ganondagan where I was able to observe multiple tours of the reconstructed longhouse, tours of their gardens on site, and the medicinal herb gardens.
Total length of audio interview recordings: 3.8 hrs	Total time plate mapping and discourse: 2.6 hrs	Total time spent conducting active participant observation with IRB approval: 3 hrs	Total number of full days spent on the reservation: 15

IRB: 00106830

Methodology

Dr. Vidali and I met following my summer internship to discuss my experiences and what I had learned while on the farm. She then helped me field and frame a myriad of ideas for possible research and the best way to formulate them effectively. I first emailed Mike Snyder, the head of the department with a brief abstract of the research proposal Dr. Vidali had assisted me with crafting, and asked him for his thoughts on the possibility of working together on a study. Dr. Vidali also forwarded to me the Seneca Nation of Indians Research Protocol developed by Dr. Rodney Haring, which outlines the need for council approval before conducting any research, so I also included my questions about the protocol to Mike. Mike reached out to the entire council via email, with a forwarded copy of my project proposal. It was a bit unconventional, as I was not present in front of the council to present the proposal in person. However, we decided that since council elections had recently taken place, I would need to secure additional funding in order to be there in person, and I had also already worked with Mike Snyder and Gerry Fisher on the farm over the summer, so an email with myself, Mike, and

the council should suffice. The newly-elected president of the Seneca Nation, Rickey Armstrong, responded to the project proposal indicating the council's approval.

After I received approval from the council, and the Emory University IRB protocol was approved, I focused on the two main methods of data collection used in this study, semi-structured interviews and 'plate-mapping' exercises. With Mike Snyder's permission, I posted a Facebook message on the Gakwi:yo:h Farms Facebook page, as well as on the Food is Our Medicine Facebook Page, soliciting people who were interested in being interviewed about their food choices to either email me or directly message me on Facebook. The full Facebook posting is provided in Appendix C.

With the support of the Rose Library, I was able to secure travel funds in the amount of \$600 to travel to Rochester, NY and the Cattaraugus Reservation to conduct both the interviews as well as conduct archival research. Prior to the trip, I had not heard back from people via Facebook, but Mike had emailed me to let me know that while I was in the area, they would be having their Nation-wide employee Christmas lunch which I was welcome to attend and ask for research participants immediately following.

Prior to the Christmas company lunch, I went to the local Tim Hortons restaurant in Silver Creek just off of the Cattaraugus Reservation to observe the populations frequenting the fast food chains on the street and/or to conduct participant observation from within the restaurant. While there, I decided to go ahead and ask people who were dining in if they would mind taking a few minutes to draw a picture of "A meal / Food that they really like to eat." I explained the premise of the study, and how they would remain completely anonymous, no name would ever be written on the map or recorded, thus preventing linking them in any way to the project. The only demographic characteristics recorded were gender (male or female) and age,

should they want to provide their age. Every person who was approached was happy to take part in the project, with the typical reaction being that people did not think they were very good artists, and instead asked if I could draw for them. I did not provide any rules for the drawings, only that there were none, just to draw whatever came to mind. From the sample at the Tim Hortons, there were 17 people who drew plate maps (n=16) with 11 males research participants and 6 female research participants. Ages ranged from 18- to 77-years-old.

The limitations that accompanied this type of methodology arose both the question itself, as well as and how it may have framed the plate map contents. Some of the research participants may have interpreted the question differently, with some respondents drawing something they love to eat but never do, and others assuming the question was asking them to draw their favorite meal they eat regularly. One way of conducting this type of plate mapping exercise may be to simply code based on the contents of the maps and ask participants, for instance, to draw what they ate last night. This line of questioning would be more beneficial in order to get a more accurate representation of consumption patterns in the area, however that was not the purpose of the exercise in this study. In this particular case, it was the hope of the researcher that those who were drawing the maps instead began to think through what foods came to mind voluntarily, and some of the preconceived associations or stigmas that were attached to these foods.

Interview Methodology

For the interviews of Cattaraugus reservation residents, Mike Snyder put me in contact with the Gakwi:yo:h employees, who were working at the farm sorting seeds when I first met them. I introduced everyone to the project and explained both the interview component and the plate mapping exercise (the interview schedule is provided in Appendix B). In addition to the

employees of the Agriculture Department, I also interviewed employees at the Cattaraugus Community Center, the Seneca Nation Council Building, and a few community members after the Christmas luncheon. In total, interviews were conducted with 16 enrolled members of the Seneca Nation of Indians and 14 plate map exercises were completed. Of the plate maps drawn by residents of the reservation, 10 were drawn by male residents and 4 were female residents. All of the plate maps from those living on and off of the reservation, as well as the transcription for the interviews are provided in Appendix A.

The list of interview questions provided in Appendix B does not completely correspond to all of the questions asked and answered in the transcriptions found in Appendix A, as the data emerged, I revised some of the questions that were asked each time. For example, after several interviews, it became clear that generally participants had not heard of the term ‘food desert’ other than those who had done previous work in the food landscape, so I reserved that question for certain people and eliminated it for others. Similarly, when interviewing Gerry, I left off the last question ‘Have you attended any of Gerry’s cooking classes’ as well as modified the questions regarding cooking to best suit the respondent.

The 17 interviews were treated as independent sources of data and were analyzed using quantitative and qualitative methods to make sense of the findings. First, quantitative frequencies are provided for how many respondents were asked/answered each of the interview questions. These frequencies are provided in both counts as well as percentages. If the question contained a closed-ended question or asked the respondent to quantify (e.g., how far they have to drive), these responses were provided as frequencies as well. (In these instances, the number of responses may be greater than the number of respondents (n=17) since multiple responses were allowed.)

Next, the data were analyzed qualitatively using categorizing and contextualizing strategies (Monette, Sullivan, & DeJong, 2014). The raw data were considered individual units within the responses. To categorize these data units, the researcher worked to generate categories or themes that emerged from the interview responses. Again, a respondent could in one response, list several data units which were then placed into the corresponding emergent categories. For example, Question 5 asks respondents to identify the top 5 things they get from the grocery store. Interviewee 16 responded, “Bread, milk, eggs... coffee, and creamer.” The researcher unitized the response into four data units – bread, milk, eggs, and coffee/creamer which then were placed into four distinct categories – carbohydrates, milk/butter, eggs, and misc. drinks: juice/coffee/creamer. Categorizing the data in this way also allowed themes to emerge. Question 7 – “How important do you think food is to culture” produced the themes: Historical/Ancestral Connection; Traditional Dishes/Sustainable Practices, Medicinal/Health (especially for Native peoples’ health), Community Aspect, Religious/Sacred, and Trade/Business; in that order of prevalence. The researcher identified these themes by highlighting the specific categories within each response and calculating the prevalence of each theme by connecting each raw data unit to a theme as well as to the number of the interviewee. Finally, the raw data were also qualitatively analyzed using the contextualizing strategy of identifying a few quotes (full data units) that are kept together (not unitized) and represented with quotation marks in order to highlight a particular sentiment/provide a broader and more authentic context for the responses to a specific question. The full quantitative and qualitative analyses of the interviews are provided in Appendix A.

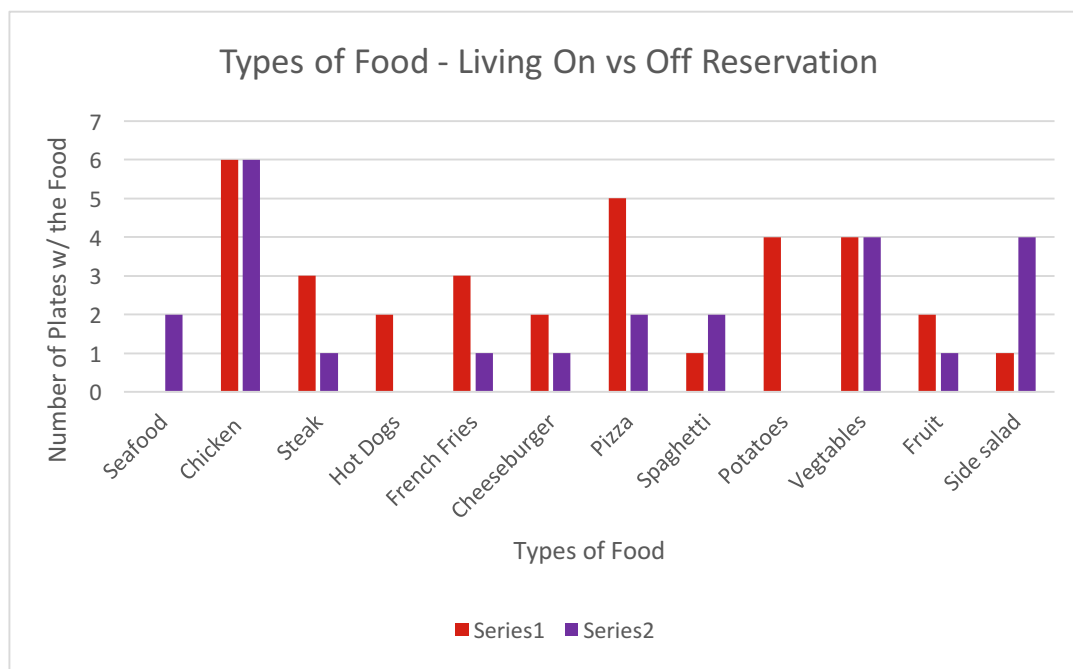
Plate Mapping Methodology

The plate mapping method was adapted from an exercise termed ‘body mapping.’ Used in many different arenas from HIV therapies to community structural violence interventions, the idea behind the exercise is that by explicitly drawing out images on ones’ body and thus, creating a connection between body parts and experiences, the participants can come to terms with their disease/past trauma, etc. One particular group of researchers used the body mapping exercise as an avenue for women to express violence committed against them in the community. This creative avenue is a way for storytelling and/or an expression of shared sensory spatial experiences. As explained in this case, it is a way to successfully “merge seemingly individual concerns of the experiential/ biological... with cultural blueprints, social orders and economic structures” (Sweet & Escalante, 2015, 1830). Using the body mapping model, the researcher employed a similar mapping method only using an empty plate outline instead of a body outline. It was the hope that this ‘plate mapping’ exercise would similarly merge the experiential and the biological, just along a slightly different vein. A goal of the exercise was that participants could begin to cognitively examine the typical meals that they eat through a new lens, while also beginning to re-appropriate their meals. In addition, it provided a smoother introduction to sharing their lived experiences with food as they drew. I hoped they would, as some did, challenge not the restrictions to their own physical movement as done with body mapping, but their restrictions to healthy food and good health. For plate mapping, the discourse came in the way of the side conversations participants elected to share with me in the midst of their drawings, as opposed to the written sentiments that often appear on the body maps. This meant that discourse was only applicable to a few of the plate maps, although the few that included discourse provided some of the most interesting insights.

My general hypothesis for the plate map findings was two-fold. Firstly, I hypothesized that the plate maps drawn by those living off of the reservation would appear ‘unhealthier’ as compared to those living on the reservation. Secondly, I hypothesized that the plate maps of those living on the reservation would include depictions of foods that were more culturally significant or ‘traditional’ to the Seneca Nation. I believed that these trends would be evident in the drawings and in the conversations during the exercise, especially given that I was in an ‘outsider’ position. Being non-Native, I predicted members living on the reservation would actively try to fight what they might perceive as a ‘researcher bias’ towards a trend of diabetes. I predicted that this would manifest itself in a larger variety of colors used on the plates, and less ‘Western staples’ – pizza, steak and potatoes, cheeseburgers, etc.

For the quantitative analysis of the plate maps, the composition was first broken down in terms of the colors used in the drawings. The color analysis and subsequent graphs broken can be found in Appendix C.³ The second form of content analysis was done based on the type of food that was drawn as opposed to the colors used. This data is represented in Figure 6 below. After comparing both the quantitative analysis of the plate maps in multiple different forms, five of which can be examined above, there were a few notable differences between the two data sets. There was a higher number of pizza drawings from those living off of the reservation compared to those who lived on the reservation, a higher number of side salads drawn by those living on the reservation compared to those living off of the reservation, and a higher rate of potato drawings coming from those living off of the reservation compared to those from the reservation.

³ The color-coded analysis of the plate maps was taken out of the body of the work and moved into an Appendix due to the fact that it did not reveal any marked differences or discoveries. It was also slightly misleading to code for colors due to the fact that there was no real correlation between the color and the nutritional benefit of the food.

Figure 7: Types of Food - Living On vs. Off ReservationLegend:

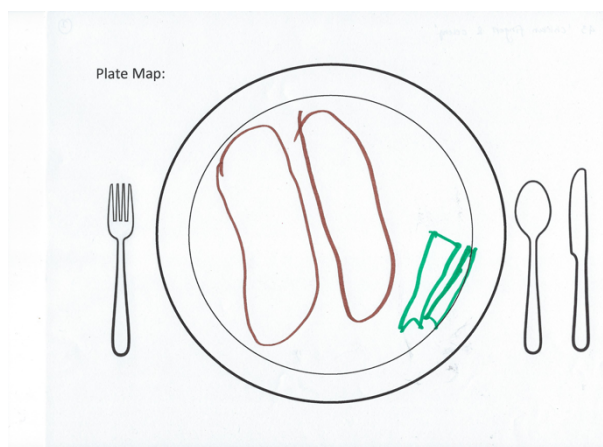
- Series 1 (red) = Respondents living off the reservation
- Series 2 (purple) = Respondents living on the reservation

That said, the more surprising finding was how similar the two sets of plate maps actually were. Of the 14 plate maps drawn by enrolled SNI living on the reservation, only two of the plate maps mentioned any sort of ‘traditional’ or perceived to be traditional, Native dish (Bison burger and corn soup with lima beans). The discourse that occurred during the duration of the activity from both participants who lived on the reservation and those who did not was also very similar. The majority of conversations would begin with sentiments such as “Now I know this isn’t actually very good for me...” but one clear difference in the conversations with participants of the plate map drawings came in the way of perception of self and community. In multiple cases of participants who lived on the reservation, after completing the drawing instead of saying

something wasn't healthy for "me" there was a more prevalent idea of "us." For example, one respondent who drew a plate of spaghetti and meatballs, handed it to me with the statement "Now I know *we* aren't supposed to eat this stuff, that it really doesn't react well with *our* bodies."

These findings differed from the original hypothesis suggesting that the plate maps on the reservation would feature slightly healthier or more traditional foods. The only minor differences between the content of the plate maps that supports the hypothesis is evidenced by the higher quantities of French fries, pizza, and potatoes from those living off of the reservation compared to respondents from the reservation. Similarly, the number of side salads drawn were higher on the reservation than off of the reservation, but none of these findings were statistically significant due in large part to small sample size. The main reason for the plate mapping exercises was more about the actual activity and the conversations rather than the pictures themselves. Some of the highlights from the discourse during active drawing (plate map in reference inserted above each conversation) include:

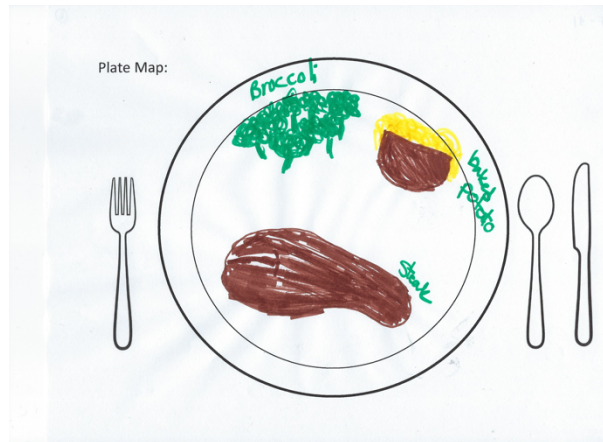
From residents living off of the reservation (All participants were given pseudonyms):



Father and son:

Father (to PI): ‘... you can go ahead and just add some green beans on there actually too...’

Son (to Father): ‘I’m your son and I have never seen you eat green beans a day in your life.’

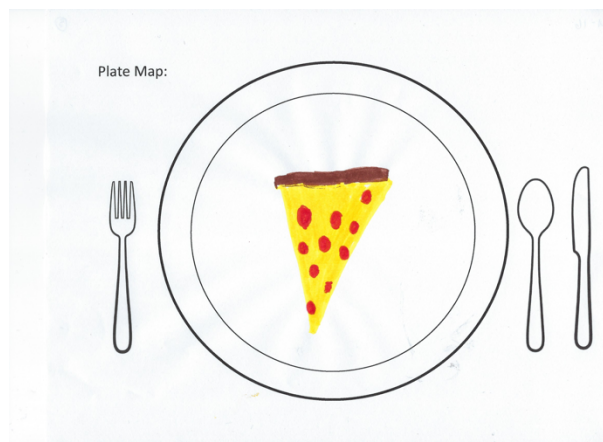


Mother and son:

Mother (to son): ‘Oh so I wonder if I should draw a fried bologna sandwich...’ (to both of us)

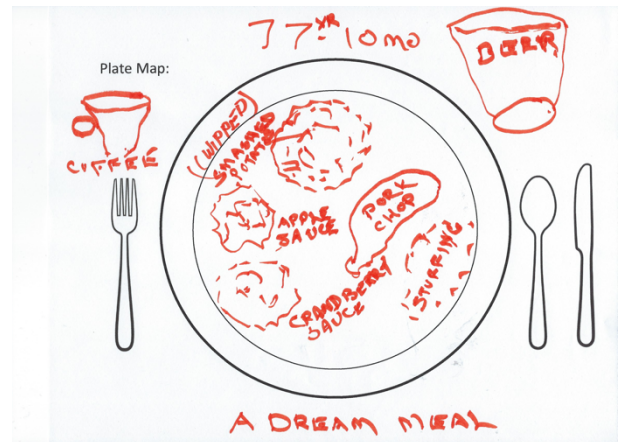
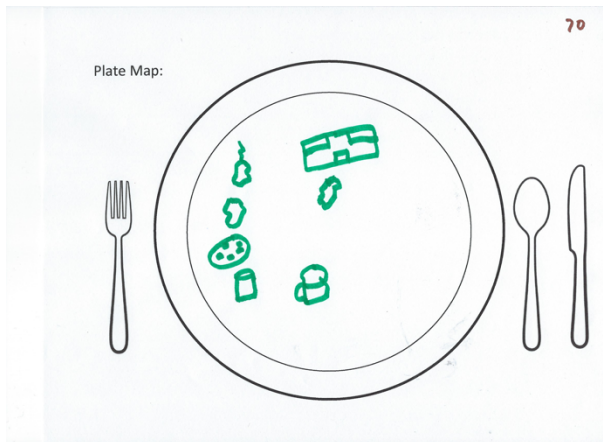
‘You know... this class is just going to show everyone how bad we eat... (to son) ‘Ok so you’re gonna need to help me with how to draw broccoli, yours is good’

Son ‘... you’re drawing broccoli?’



Older woman as she handed me her drawing:

‘...so this is my favorite, but I don’t eat it all that much because it is very fattening and all...’



Three men sitting together, all in their late 70s:

Johnny "Now understand that we are all old men, we don't care what we eat"

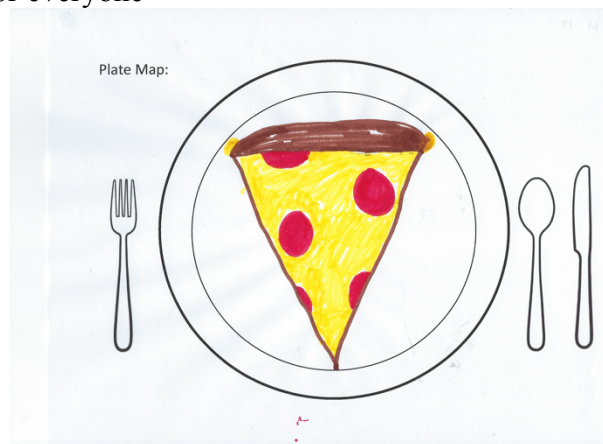
Jacob "That's how we stay looking as good as we do"

Johnny "And you can't forget the three cigarettes for dessert"

Jacob *Pauses and looks down at the plate* "...No I can't put them down that isn't food..."

Johnny (to Jacob) "Now I know those portions are not drawn to scale"

Johnny (to me) "Now you need to put down the ages on these, Sal write your age on there... put them on the others, I'm 72 and Jacob is 70... I think it would be interesting if you compared the different meals by age for everyone"



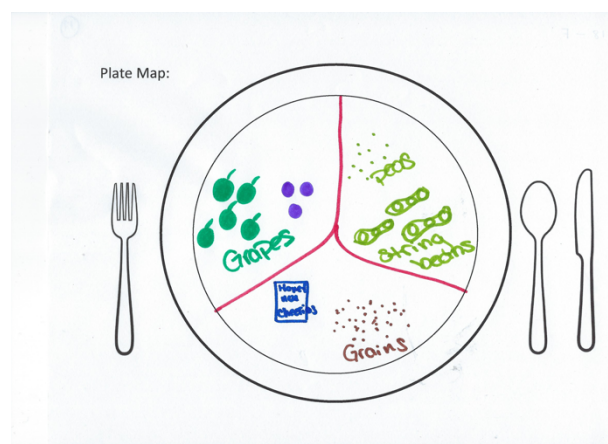
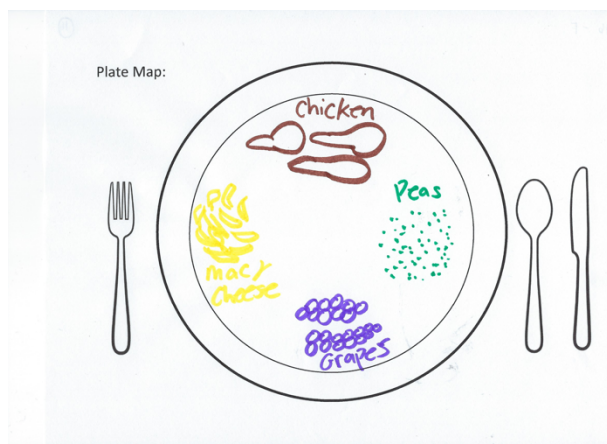
Two 18-year-old friends sitting in Burger King:

"Man this looks like shit"

"...I just gotta get some pepperoni on there, and the cheese"

"Should I draw an apple"

"No, man, just come on"



Family outside near the Tim Hortons:

Drew finished his first, hands it to me “Here you go, Fries. Cheeseburger. And a pizza. That’s it.”

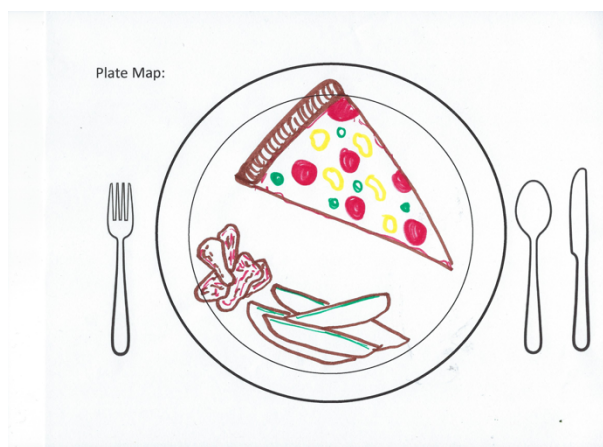
Drew (to Leila) “Just give it to her”

Leila “But I still have more space left, I wanna make her project look good!”

Drew “Just put a hamburger on there” *Leila ... grabs the markers* “Oh my goodness really... you put grapes”

Leila “Yeah I like fruit... okay and I need a starch...” *looks over at her sister drawing in quadrants on her plate* “Oh and peas!”

From residents living on the reservation (All participants were given pseudonyms):



Middle aged woman living on the reservation:

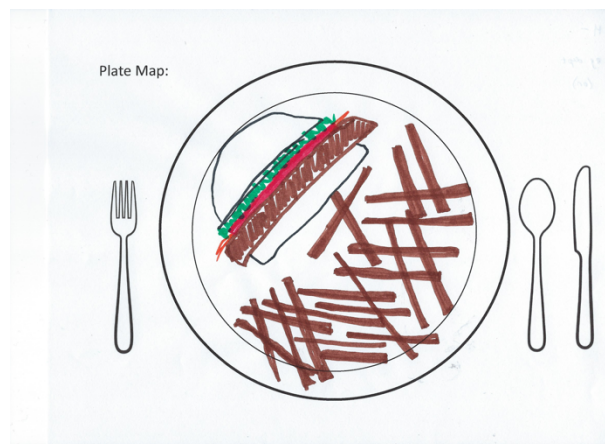
Lily: “Honestly I know how bad this is for me but I’m just going to be honest and this is what I usually eat... got my fried pickles on there...”



The youngest of the male Gakwi:yo:h Farms employees:

PI: So, do you think food affects your wellbeing and how you feel?

Michael: “Yeah definitely... I feel great when I’m eating my pizza and my skittles...”



Sitting at the Agriculture Department’s table during Christmas Bingo:

Ok so this is just a burger and fries...

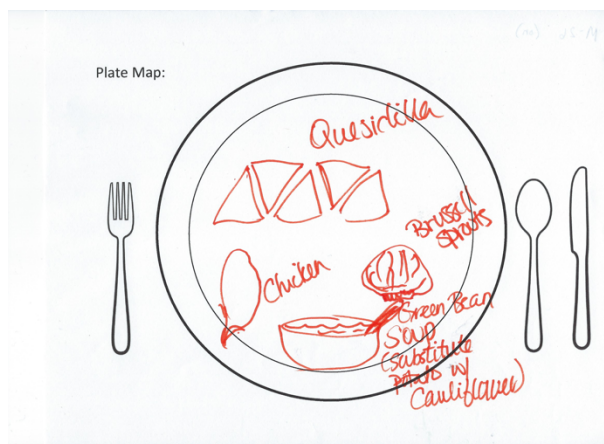
What type of burger? *from across the table*

I mean it could be anything, beef or bison

Turkey?

Yeah or turkey just not a veggie burger

everyone laughed



Middle aged man sitting with a friend at the CCC:

Jason: I mean I've really been into this new cauliflower trend recently... like there are cauliflower pizza crusts and everything... oh and Kombucha, I love Kombucha!

PI: Where do you have to go to get Kombucha?

Jason: Oh they sell it at Walmart like 30 minutes away

Friend with him: What in the world is Kombucha?

Jason: It's fermented like bacteria and stuff

Friend with him: Okay, what? That's gross!

From the aforementioned plate mapping conversations, a few key themes emerged.

Firstly, among those living off of the reservation, there was more of an idea of what they “should include” or how the picture would look and what it would say about them. Although I did not ask any further about their perceptions of health while they drew because I wanted them to only draw things that came into their heads organically, it would have been very interesting to delve deeper into their thought processes. For instance, one of the family members drew her plate into clear separate quadrants. I was curious if that had to do with something she had been shown or taught at school, either in the shape of a USDA MyPlate or if it was simply mirroring her school cafeteria plates. Though the dialogue ‘results’ are not ‘conclusive,’ they allow for a better look into the subconscious conversations participants had with themselves regarding healthy eating habits. Other methods, such as interviews, tend to minimize these natural side conversations given the rigid and sometimes cold connection between strangers. Drawing helped to ease these

barriers and although we still did not know each other, laughing about various ranges of artistic abilities helped to immediately lower some of these defensive barriers and build rapport.

In terms of the conversations I had with participants living on the reservation, the conversations tended to be much more diverse, and the foods they were drawing also reflected this. There were no major themes on the side-discussions, but there were only a few mentions of ‘traditional’ dishes, and both mentions came from employees of Gakwi:yo:h Farms. This was not as surprising seeing as they work closely on the Seneca Nation’s project of food reclamation. The other themes that emerged in these conversations was less of a desire for what could have been considered ‘good’ or ‘bad’ for you. Instead there was an unabashed honesty, ‘this is what I eat.’ Two examples of this can be seen with the plate with fried pickles, as well as the plate with the Skittles / pizza / Mountain Dew combination.

Chapter V

Findings and Analyses

Food Security Narratives

Thematic analyses of both the interviews and plate map drawings data reveal a marked frustration with the continued problem of food insecurity and diabetes on the Cattaraugus reservation. In terms of the interviews conducted with enrolled members living on the reservation, three subthemes emerged:

1. Accessibility – not only was a serious lack of fresh food availability reported, but also long distances to grocery stores and restaurants – other than fast food chains.
2. Lack of communication - between outside researchers and those living within the food desert that is the Cattaraugus reservation, leaving members feeling uninformed / disempowered.
3. Desire for tradition and education – in the original ways of sovereignty in agriculture, with the recognition that this must be accompanied by education since it has been so long since the traditional foods have been grown on the reservation that few would know how to prepare them.

Using the analysis tables that can be found in Appendix A, there were multiple themes in regards to shopping habits, beliefs about foods importance to culture and wellbeing, and changes that participants wish to see take place in the community that emerged. In terms of shopping habits, 64.7% of respondents said that they liked to cook, however only 23.5% of people reporting eating most meals at home as opposed to 47% who said they ate most meals out. Of the locations that people mentioned going out to eat, the majority of them were fast food restaurants, and only a select few reported seeking healthier options (which tended to be much further away). In terms of grocery shopping, not as many people mentioned a clear obstacle there, but the closest distance mentioned was 15 minutes away. In response to the question “What are the top five common items on your shopping list or things that you always have in your fridge / pantry?,” most reported carbohydrates and starches and the main staples – such as breads, cereals, and pastas. The next highest reported items were milk / butter, eggs, and fruits/ veggies all tied for second. Other popular items included things like juices, meats, and frozen pizzas.

In terms of popular perceptions of food, a clear majority of people, 92.3%, felt strongly that the foods they consumed affected their wellbeing and how they felt, which was not particularly surprising. However, within their actual word responses however, only 2/11 of them suggested feeling or acknowledging a potential positive effect from food, whereas 9/11, 81.1% of people attributed food to having negative effects on their bodies. Another theme that emerged in these responses was an acknowledgement ‘traditional/fresh’ as being ‘healthy’ and ‘processed’ as being ‘unhealthy’ and leading to worsening wellness.

Can you feel a difference when you eat different things?

“Yeah, healthy, you feel good about yourself... puts you in a depression... you walk around depressed... swearing, ‘what are you lookin at’ wanting them to feel the way you feel’ ‘I hope you arn’t looking at me the way I’m thinkin about... the way I’m lookin at you... ’” (13)

“Of course If I’m eating crap, or a lot of grease, I feel bad and if I’m eating healthier foods, I feel a lot better, my energy levels, but when I’m eating traditional healthy foods, I think that’s another level...” (14)

“Absolutely. [How so?]. I think that when I eat a bunch of carbs and sugar I feel like crap.”

A second perception of food that was explored in addition to wellness, was food’s importance to culture. Every single respondent noted that they felt food was important to culture. Six respondents noted the historical/ancestral connection they felt to food, six also noted that they wanted to return to more traditional dishes/sustainable practices, four mentioning food’s medicinal uses (especially for Native peoples’ health), three a community aspect, two stating it was a religious or sacred part of culture, and one mentioning food’s importance to trade / business.

“I think that food’s important to culture because our food is something that has followed us for hundreds of thousands of years so... they share like those historical bonds that we do... our like heirloom foods that cooperate better with our bodies so that says a lot right there when you see heirloom, indigenous foods, naturally grown foods, and the effects they have on the body, it’s gotta tell you something you know... for us as Native people yeah, it is a huge deal for us...” (12)

“...food here is really important because it actually is a religious thing for us. A lot of it originated from here, it is an especially big part of our culture...” (1)

“there is going to be a time when your friends need some items or whatever you’ve got, you’ve got a good notion of providing some plants, or beans or squash whatever you’ve got, and you make a trade in some way... the creator commanded us to perform these yearly ceremonies, and they are still being carried on to this day... and a lot of us our losing our way, and there aren’t enough of us that are paying enough attention to carry on...” (13)

“[important to] any culture or to my own? [Either]. Cause to the mainstream culture I don’t think it really matters but to us, to me, yes. It is important. [How so?] It’s important because it’s who we are it’s the definition of who we are, it’s part of who we are.” (16)

When asked what people wanted to see change on the reservation, most people made a mention of the new Department of Agriculture.

“I really like the Agriculture Department, I think that was a great idea... only because we

are getting away from growing our own food and I look at that department as hopefully one day having our own farm and we can do it all from there...” (15)

Of those who mentioned larger structural changes that they wanted to see happen, 8 mentioned more fresh and healthy options being made available, 8 also mentioned making food more affordable and available in general, 4 mentioned a fresh food market or co-op, 3 emphasized the need to educate the people further on healthy foods, 3 the importance of getting back to growing indigenous foods again, 2 respondents stated the need to change pretty much everything, and two also said just having more restaurants actually located on the reservation. Where food came into play in the most colorful ways were when people began to reminisce on the foods they typically ate growing up.

“then just pizza, wings, stuff like that...that became the new three sisters”

“Yeah so we grew up, I grew up poor, even though my family had money, it was my dad’s side with my mom, we still got the commodity stuff, or when she was pregnant with my brother and sister she actually got WIC, which was actually a big deal for us because I could actually get rice chex instead of chex oats or whatever they call that over at USDA...”

“We always did something quick because my mom was going to school and it was just her raising us so it was just whatever she could do she was working full time and going to school full time so it was a lot of pizza... deli food... goulash... stuff like that...”

“Well my mom... we had a limited supply of money so my mom... we would have potatoes for one, and she would have flour, so we would have fry bread, and she would make biscuits or... that’s about all I guess, or brown canned gravy, that kind of stuff, our meats were like salt pork... every now and then we would have chicken...”

The main theme that emerged throughout the stories people told about meals they remember growing up on the reservation, was this idea that commodity foods meant you were poor and thus, were relegated to eat unhealthy canned food. This was inline with what previous research had shown linking nutrition content to certain obesity and diabetes rates spikes among the populations who depended on food assistance the most. What many of those studies had not explained however, was the way that people began to look down to the ground when talking

about how they grew up, or not wanting to elaborate any further on certain meals. In multiple instances, in response to asking the question, “Do you remember certain meals that you would eat often growing up?” many interview participants would get noticeably flustered. I do not know if this was due to the clear ‘outsider’ nature of the question, or whether it was a source of embarrassment or insecurity. Gathering these stories directly from the people who had lived them, changes the research and the way various stakeholders can begin to view statistics.

The thematic analysis explained above, as well as in more depth in Appendix A, focuses primarily on the themes that emerged in the individual question and answers. Through a more holistic analysis of all of the interview transcriptions, additional themes emerged. The four most prevalent were:

1. Humor / entertainment factor
2. Tradition
3. The knowledge that processed foods are bad for the body and have adverse health effects
4. The enemy of convenience

Humor is often used as a defense or coping mechanism and can also present as a method of dissociation. However, using humor in this capacity can also help the body alleviate stress, anxiety, or depression and make a shift from agitation to calm (Vaillant, 2011). There were many instances where I saw this play out during interviews. In most of these cases, humor was used both as a calming mechanism, as well as an entertainment factor, to evoke a positive response and take some of the pressure off of the potential seriousness of the question/ answer / reality. One such example was when I asked a respondent if he/she/they preferred traditional dishes to non-traditional options.

“I do... but I try and do them far and in-between...”
[Why’s that?]

“Just because it is very heavy grease and stuff that I try and stay away from... not going to say that I don’t... like I indulge... like when I fall off that wagon... it takes a lot to get back on... like I just dive in...

Most people jump back up, but no....”

**makes swimming motions back and forth with his arms* (10).*

Processed foods, which tend to be higher in sugar, salt, and fat or ‘grease’ as the respondent alluded to, have all been shown to possess addictive properties similar to that of recreational drugs (Schulte, 2015). When the aforementioned respondent described binge eating and the addictive nature of foods, instead of making the narrative seem concerning, the respondent made an effort to get the interviewer to laugh, and to bond over the humor instead of more deeply addressing the issue. This was a common occurrence throughout the interviews, often paired, as it was in the previous case, with hand gestures complementing the verbal humor in another way to divert serious attention. A similar example of this was evident in the response to the question about food’s relationship with wellbeing.

[Do you think that what you eat affects the way you feel or your general wellbeing?]

Yes

[Yes, you can feel a difference, like when you eat processed stuff vs fresh...?]

Yeah, yes.

*This is the processds stuff *grabs side and laughs**

The second theme that emerged was the underlying acknowledgement of the importance of tradition. Although in many cases this was not specifically stated using the term ‘tradition,’ multiple respondents noted the previous ‘ways of life’ and how different everything is on the reservation today.

“If you think back to how families were, they always ate together, and you know, planned together, and so did we as a nation. You know, the community worked together to make sure that the food was planted and harvested and sorted so that the entire community had foods to eat and it was all healthy, it wasn’t any of this junk food.” (17)

In this particular quote, the respondent goes as far as to tie in the traditional methods of agriculture with the corresponding social practices. Not only is the community aspect of meal sharing mentioned, but also the sociability of the act of farming that was once an extremely importance source of engagement. When Mike Snyder mentions that the farm is not only a source of food reclamation and sovereignty for the nation, but also a way for Gakwi:yo:h Farm employees to feel more connected to a larger cause, he too, echoes this sentiment. So whereas the formal interview analyses identified the theme of excitement of the farm surrounding the availability of traditional foods, a more comprehensive examination of the interview data also reveals this second desire for the farm - for the model to function as both a restoration of food traditions as well as sustaining both social and community engagement traditions.

The third identified theme was a clear knowledge that respondents recognized the connection between processed food and poor health. Though this may be an obvious relationship to scholars within the field, one of the most significant obstacles in reaching or appealing to disadvantaged populations is often health literacy. Health literacy, as defined by the United States Department of Health and Human Services is the “degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (Neilson-Bowman, 2004, 32). In a report produced by the Institute of Medicine in 2004, researchers found that “people with low health literacy have less knowledge of disease management and of health-promoting behaviors,” meaning being both unaware of what constitutes a healthy diet and the importance of such as preventative measure in diabetes care and treatment (Nielson-Bowman, 2004, 8).

“...diabetes is a big thing, and it’s got a lot to do with all the imported food. [Like the processed foods?] Yeah like the processed food is real bad...”(1)

“So, I drew that spaghetti on your sheet of paper, but I know that’s bad for us. Our

bodies don't process pasta it's like the worst possible thing I know" (5)

Throughout these interviews, though not a large enough sample to support a definitive claim regarding the Cattaraugus reservation as a whole, there is a certain awareness or high health literacy regarding diet and consumption's effects on health outcomes. This is a significant finding and assessment of the local food climate as it provides context for future programming and/or outside interventions that may not have a chance to fully understand the population on a community level prior to implementation.

The fourth and final theme that appeared throughout the interview narratives was the 'enemy of convenience' in the attempt to limit processed 'fast' food consumption. In the 2017 UNICEF "The State of Food Security and Nutrition in the World" report, scholars explained how food insecurity alone can lead to increased rates of diabetes and obesity, but that there is importantly also an increased concern with "readily available and accessible highly processed foods," which tend to be less nutritious, and that this "shift away from traditional diets toward convenience foods" is also responsible for the increased disease rates (UNICEF, 2017, 23).

"I've always said our biggest enemy is convenience. So the time frame that we live in now, as much as we care to admit or not, a lot of us don't feed off the land. And on top of that, a lot of us are working 40-hour work weeks or more, and on top of that a lot of us are tied into the American school system, and the American life style, a lot of our kids play sports, to its like from school to sports, they're only home for, home and awake for like three hours of the day and within that three hours, you have to cook, clean, get them bathed, make sure they do their homework and their chores and things like that. That's no who we were, that's not who we are. So how do we bring that all back to say, how are we going to be Seneca in 2019. Convenience, assimilation... and it's by choice, it's not even by force anymore, and again I guess I would have to say generational historical trauma has contributed, and not having a pride about stuff, laziness, not having a responsibility to our community..." (14)

"you know more and more people don't follow [traditional farming methods], because of the convenience of Walmart, you can just go and get it off the shelf, but long ago there was no food stores, and when you grow, and to keep your crops healthy, to harvest, it was a big deal, because you had to take good care of it..." (13)

“I think one of the biggest problems that we have is most of our workers are single parents so when they get through working, unless they learn to plan ahead, they don’t have anything ready for their family, so they’re grabbing pizza, subs, fast food” (17)

According to the conversations showcased in this research study, there is a high rate of both single parent households as well as a pressure to work long hours on the Cattaraugus reservation. Both of these factors then drive residents (parents especially) to grab the most convenient food option for dinner, either after work or on the way home from a child’s practice/afterschool activity. This need for a quick food option then feeds directly into the food desert landscape present both on the reservation as well as in the surrounding areas. (Shown in more detail later in Figure 11).

Data Analysis of Co-op Feasibility Study

Located under the larger umbrella of the Seneca Nation of Indians’ Council, is the planning department. Previously the division which oversaw the Food is Our Medicine programming and pushed for the realization of the Seneca Nation Department of Agriculture, the planning department was also responsible for a food co-op feasibility report in the summer of 2017.⁴ Outsourcing the research project to a company called the Adelman Research Group, the goal of the study was to test for the need and desire in the community for a ‘healthy foods co-op.’ The goal of such Co-op, as stated in the study, was three-fold. Firstly, it would be to streamline access for those living on the Cattaraugus Territory, as well as employees of the SNI to fresh and healthier foods. The second goal was to bring others from off the reservation, but who still lived close by, to the Co-op. And the third main goal, was to be a source of “healthy

⁴ While the report has not been made available to the community or to the public, when I met with the head of the planning department on my most recent trip to Cattaraugus, she gave me permission to use the study as part of my dataset for this research, as long as my findings were shared with the SNI.

food sovereignty for the Seneca Nation” (Co-op Study, 2017, 2). The term “co-op” more broadly was coined from the word ‘cooperative,’ and it typically works as such. Members who buy into the co-op or cooperative are not only the recipients but the owners, so it creates a much more democratic business model. The company “Co+op, Stronger Together,” specialize in food co-ops and explain that “simply put, co-ops provide the framework that allows people to get what they want in a way that better meets their economic, social and cultural needs” (Co+op, 2019).

The four main stakeholder groups that were identified and targeted for the study were: Members of the Seneca Nation of Indians who live on or within 10 miles of the Cattaraugus Territory, Non-Members of the SNI who live within 10 miles of the Cattaraugus Territory, Employees of the SNI, and Farmers/Growers in the area around the territory. The methodology took the forms of direct mail survey with members of the Seneca Nation who live on the Cattaraugus Territory, telephone survey with non-members of the Seneca Nation who live in the vicinity but off territory, in-person surveys with attendees of activities at Cattaraugus Community Center, online survey with employees and Seneca Nation web site visitors, and finally telephone surveys with farmers and growers. In total there were n= 626 survey respondents.

The survey questions focused on the following topics. Current food shopping sources, healthy eating habits (the importance of healthy eating for themselves and their family, use of fresh produce, meats or fish when preparing meals, frequency of purchasing organic, etc.), feasibility of a Seneca Nation Healthy Foods Co-op, the percentage of people who currently grew vegetables, and the overall respondents’ demographic profiles. There were also two additional lines of questioning that pertained solely to farmers and gardeners. The first regarding the supply of food and products for co-ops, and the second to judge current interest in partnering

with the Seneca Nation Healthy Foods Co-op.

The majority of the findings that the group reported on were things that similarly stuck out to me during my time living nearby the Territory, such as the fact that there were gas stations and convenience stores located on the reservation which provided fast, unhealthy options, but no stores where you could actually buy fresh meals, bakery items, or any fruits and vegetables. While the area has not been officially designated a ‘food desert’ by the USDA, the Co-op feasibility study very blatantly said there was no denying it.

“The Territory has been defined as a food desert with the closest food stores being a Save-A-Lot in Gowanda and Shop ‘n Save on the border of N. Collins and Eden. With many people on Territory having transportation difficulties, access to these stores is difficult” (Co-op Study, 2017, 2).

In terms of overall accessibility and availability, the grocery / food stores which received the highest traffic by those living on the Cattaraugus Reservation and non-Members who lived within 10 miles of the land, was Walmart – the two locations mentioned were located in Hamburg, and the other in Dunkirk. Both of these stores take over 30 minutes to get to (depending on the precise area of residence) which means that there is no food store even in close proximity to the Cattaraugus reservation where people can get fresh meals and food supplies. Due to these findings, even without hearing the responses from those who took the surveys, one can see a very apparent need within this community.

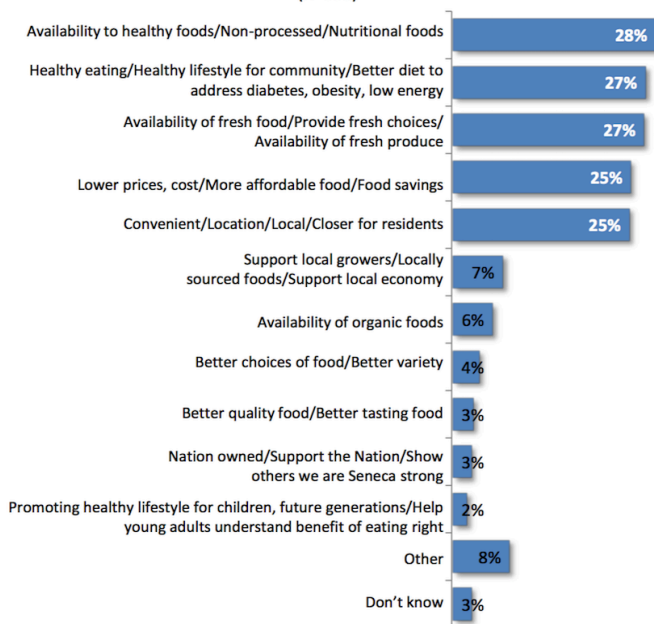
While all of the findings and responses from the study were quite fascinating and revealing, for the purpose of this research, I did not focus on the data from area farmers and gardeners who might be interested as the majority of the farmers that were interviewed were not enrolled SNI members. Additionally, because I am focusing on the work of the Department of Agriculture, and the possibilities that they have to expand and create a self-sustaining / sovereign organization, I did not look further into outside farmer availability. The two main areas of the

study that I did find to be particularly illuminating for my work, were the questions surrounding healthy eating and the potential benefits the Adelman Research Group saw possible from the Co-op.

Figure 8:

Seneca Healthy Foods Co-op: Benefits

What do you think would be the primary benefits of the Healthy Foods Co-op?
All Respondents
(N=555)



- When asked what would be the primary benefits of the Healthy Foods Co-op, the responses did not, for the most part, vary significantly by segment.
- Access to healthy and fresh foods, potential for healthy eating within the community, location, and lower costs were seen as the primary benefits of the Healthy Foods Co-op by the respondents.
- **There appears to be a stronger perception that the Healthy Foods Co-op would provide the benefit of improved healthy eating within the community by Seneca members.** The response "Healthy eating/Healthy lifestyle for community/Better diet to address diabetes, obesity, low energy" was mentioned more frequently by Seneca Members who live on or within the Territory (33%), and Members who live more than 10 miles from the Territory (30%), compared to Non-Members who live within 10 miles (15%).

Figure 9:

- Among respondents who live on or within 10 miles of the Territory:
 - There was a lower frequency of eating fresh fruits and vegetables, fresh meat, and grains on a daily basis among Members (52%-59%) compared to the Non-Members (64%-73%).
 - A higher percent of the Members eat ready-to-eat fresh meals on a daily OR weekly basis (40%) compared to the Non-Members (28%).

**How often do you and your family eat each of the following types of food?
% Daily and Weekly**

	Live On/Within 10 miles of Catt. Terr.		Live 10+ miles from Catt. Terr.	
	Members	Non-Members	Members	Non-Members
Fresh fruits and vegetables				
Daily	59%	73%	62%	70%
Weekly	37%	22%	34%	27%
Fresh meat including chicken, beef, pork, fish and game meats such as venison				
Daily	55%	70%	62%	68%
Weekly	40%	27%	30%	26%
Grains such as rice, whole grain breads, oatmeal, cereal, pasta, barley				
Daily	52%	64%	43%	59%
Weekly	44%	30%	51%	38%
Traditional bakery items such as donuts and muffins				
Daily	6%	4%	4%	2%
Weekly	38%	35%	30%	32%
Ready-to-eat fresh meals (not frozen)				
Daily	9%	12%	4%	9%
Weekly	31%	16%	40%	23%
N (varies based on respondents leaving some questions blank)	319-326	154-155	47	66

Figure 10:

If availability and cost were not an issue, which of the following types of food would you like to be able to eat or serve to your family more often?

	Live On/Within 10 miles of Catt. Terr.		Live 10+ miles from Catt. Terr.	
	Members	Non-Members	Members	Non-Members
Fresh fruits and vegetables	96%	91%	96%	91%
Fresh meat including chicken, beef and pork	88%	79%	79%	75%
Grains such as rice, whole grain breads, oatmeal, cereal, pasta, barley	63%	59%	60%	61%
Ready-to-eat fresh meals (not frozen)	44%	37%	34%	52%
Bakery items	26%	19%	21%	25%
None of these	1%	6%	-	3%
N	327	155	47	67

- The main overall trends that emerged from their findings were that there was a strong desire from residents living on the Cattaraugus Reservation and those living close by to have a place to buy fresh and healthy foods. With a reported 89% of the Members and 70% of the Non-Members who live on or within 10 miles of the Territory stating they were likely to shop at the Co-op. This was especially exciting for me to see in terms of the relative effectiveness of the implementation of any possible proposed initiatives or programs moving forward. This study clearly proves that participants would prefer to eat healthier if given the option to, with 96% of members and 91% of non-Members saying that if availability and cost were not an issue, the number one food group they would prefer to serve to their family more often was fruits and vegetables.

- Another key trend that emerged in the report was that 60% of members reported experiencing difficulties when food shopping. Whether that was food prices being too expensive, the lack of a fresh foods market nearby, lack of any type of grocery store, or transportation issues, over half of the population living on the Cattaraugus reservation reported continued food accessibility problems. There was one particular instance when I saw these difficulties manifest during my time on the reservation. It took place right after I had finished conducting an interview and plate map exercise. After thanking the participant for her time, we were still just sitting and chatting casually. She complained to me that she was stuck waiting for her husband or a kid to finally realize where she was and come pick her up since she couldn't reach any of them and did not have her own form of transportation. I offered to give her a ride home, saying that I was done for the day anyways, and she gratefully took me up on it. Having just talked for a while about the different types of foods she liked to eat and her grocery shopping habits, she began to explain in more detail to me that the reason she and her husband only buy canned goods and cereals when they go grocery shopping is because it is so difficult to get to the store. Not only do they have to coordinate to find a ride from someone, but gas there and back is so expensive she lamented. So this way, if they keep to canned items, they do not have to make the trip as frequently.

- The third and final important analysis point from the study can be seen in Figure 7 above

under the ‘potential benefits’ of the Co-op. The top two reported positive potential outcomes were 1. Availability to healthy foods/Non-processed/Nutritional foods and 2. Healthy eating/Healthy lifestyle for community/Better diet to address diabetes, obesity, low energy. Of the 555 respondents to this particular question, approximately 150 people, 27%, said that the presence of a Healthy Foods Co-op in the area would help them create a healthier lifestyle which could help to address their diabetes / obesity. With a respondent pool of 555 people, coming from a population which we have shown earlier to be potentially quite pessimistic, when it comes to the treatment and management of diabetes, saying they believe healthy foods could be the answer is extremely important. This belief is not only vital to the members sticking with a potential program, but also to the effectiveness of these types of interventions as research shows that changing the food available can directly influence diabetes and obesity rates (Lovasi, 2009). These numbers show the importance of an increase presence of healthy food options, and just how key food can be to disease management.

While the co-op study was able to provide more statistically significant data given the much larger sample size, the focus there was still on treating the residents and respondents largely as statistics. The survey never asked participants how they *felt* about the situation, what they wanted to see change, or anything to assess the emotional climate of the food landscape. This is particularly important when implementing diabetes interventions, and specifically within minority ethnic groups, as it has been shown that tailored community-based programming is much more effective (Peek, 2007).

Geographical / Area Analysis

The accessibility of fresh food stores (as was reported in the Co-op Feasibility study) both to residents living on the Cattaraugus reservation itself as well as in the surrounding area, is

extremely limited. This lack of accessibility and availability by itself is not necessarily a recipe for disaster, but the lack of healthy options, coupled with an abundance of unhealthy ones, has led to a serious lack of food sovereignty and security. 'Feeding America' a nonprofit aimed at fighting hunger across America through their expansive food bank network, has created a new interactive food insecurity map called 'Map the Meal Gap' that you can access online. The nation-wide map shows the rate of food insecurity broken down by every district and county for each state in the United States, and the location of food banks throughout. You can also further narrow your search by specifically focusing on food prices in the area, and whether they have gone up or down in recent years. Another tool is the ability to search for fast food restaurant presence in the area and whether those rates have gone up or not as well (Map the Meal Gap).

While this map is a great educational tool, and an impressive way to compile the years of important food insecurity work that Feeding America has done throughout the years, it can often glaze over smaller populations and communities within the larger map concept. For instance, for the State of New York, the Map shows an overall food insecurity rate of 11.9%. When you zoom in and narrow the map down even further, your options are to pick either a specific county or district. So in the case of Cattaraugus reservation, the land actually runs along three different counties, Erie County, Cattaraugus County, and Chautauqua County. These three counties which report on the map food insecurity rates of 12.7%, 12.5%, and 12.4% respectively. The map-makers at Feeding America recognized this glaring omission, and in their reports have made note that not only are populous counties that have low food insecurity rates actually home to the highest number of food insecure individuals, but also the fact that some counties which have low *average* food insecurity rates also have pockets of some of the highest rates in the country (Map the Meal Gap). It is extremely important to recognize that this over-arching view of nation-wide

food insecurity is important, and also leaves a lot out of the equation.

In an effort to find a more targeted geographic map of food insecurity specific to the region and population around which my research was centered, I turned to the IHS databases. However, the HIS geographic rates of food security / insecurity also proved to be much too far removed from the area in question, as the IHS offices responsible for the entire NY state are located in in Nashville area. And, to make matters worse, were also responsible for the entire east coast and more, from Maine to North Carolina, to Texas.

Out of this frustration and lack of any sort of public database that allowed for viewing the food landscape of any one area in its entirety, I realized that in order to see the types of trends I was looking for, I would have to make my own. Using the map located in Appendix C, I manually plotted the fast food restaurants in the area as compared to the healthy food stores and grocery stores. This clear depiction of the structural obstacles present living in a food desert serves as clear tangible evidence that this population is adversely affected by the artificial environment which has forcibly grown up around them.

Figure 11: Map of Restaurants in Surrounding Area



(For scale – 1 to 6 is 2 miles, 1 to 8 is three miles)

Legend:

- 1 = Native Pride Travel Plaza and Seneca One Stop
- 2 = Seneca Hawk
- 3 = Burger King, McDonalds, Tim Hortons
- 4 = Sunset Bay, Tom’s, Colony Restaurant
- 5 = Aunt Millies, The Big Chill (ice cream)
- 6 = Sunset Grill
- 7 = Family Dollar
- 8 = Save-a-lot

The map above further highlights the ‘food desert’ nature and food insecurity level that is present on the Cattaraugus reservation. If we think back to the USDA definitions listed in Chapter One, food insecurity is “a household-level economic and social condition of limited or uncertain access to adequate food” and food sovereignty, is “the right of peoples to healthy and

culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (USDA, World Democratic Forum). When the **only** restaurants that are available in the area are fast food restaurants or sit down dining with menus lacking many healthy options, no fully-stocked grocery stores, and no fresh food stands or farmers markets, the area is neither food secure or food sovereign. Additional maps of the larger area zoomed out to include the other grocery store options in the area can be found in Appendix C, along with photos from the insides taken during participant observation outings. The maps further emphasize the limited *availability* of the food as the distance needed to travel to any of the healthier stores or restaurants is about 20-30 minutes away from the reservation at a minimum. The photos that can be found in Appendix C of the locations that are listed in Figure 13 above highlight the unhealthy and extremely processed options that are by and large the only ‘convenient’ or quick options of food available to the residents of the Cattaraugus reservation and the surrounding area.

After my meeting with Dr. Rodney Haring, he had specifically posed the question to me after I had explained my interest in the local food deserts, do fast food companies target our communities specifically? Knowing the higher rates of Native American diabetes, lack of fresh food accessibility, and trends towards choosing a more processed diet, do they use that to exploit certain people? While I could not find any precise research that linked the two together in a definite causal relationship, it is definitely something that should be followed up on in further research studies.

A Cross - Cultural Analysis

Geographically, the Seneca Nation and the rest of the Haudenosaunee are much closer to many of their Canadian First Nations and Indigenous neighbor populations as opposed to other

Nations such as the Pima Indians in the United States. However, physical location is pretty much where the similarities stop. Previously, similar studies were mentioned that were done to compare the Pima with their neighbors in Mexico to expose the structural differences as a result of being located within the borders of the United States. The same can be done with the SNI and northern Canadian nations, which provides a good cross-cultural base on which to further extrapolate larger themes.

The Seneca Nation of Indians diabetes rates for adults is roughly 50% compared to the general US population of approximately 9%. In Canada, the diabetes prevalence rate for First Nations individuals living on a reservation is 17.2% and for First Nations individuals living off of a reservation is it about 10.3%, compared to the general population's incidence rate of 5% (Crowshoe et. al. 2018). The Canadian Government has recognized this >2x increase as a major health problem for the country. In 2015, the Truth and Reconciliation Commission (TRC) made it their mission to request various government entities to admit and acknowledge the role of colonization and historical oppression of Indigenous Canadians in every area from health to language. They also called for a period of reconciliation, something that the United States has also yet to implement. Namely within the health clause, was a charge to the *"federal, provincial, territorial, and Aboriginal governments"* to claim responsibility for, and fully acknowledge, that *the current health status of Canadian Aboriginals "is a direct result of previous Canadian government policies, including residential schools"* (Truth and Reconciliation, 2015).

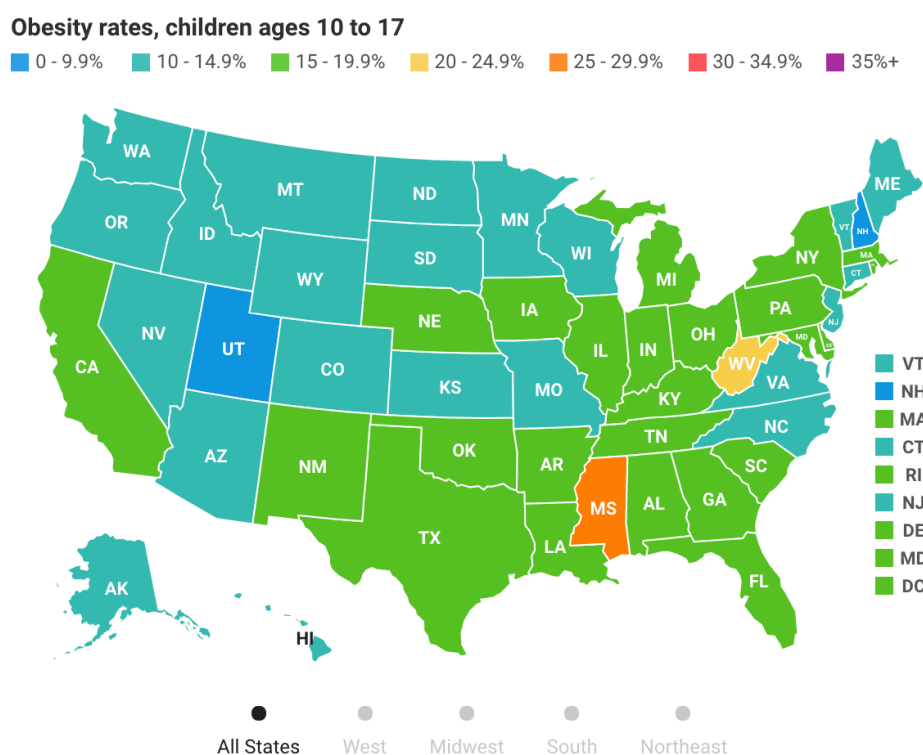
The World Health Organization has also clearly stated and made known in the UN Permanent Forum on Indigenous Issues that colonization is the most significant determinant of health affecting Indigenous individuals globally (Cunningham, 2009). This systemic problem requires a systemic solution. The structure of sovereignty and relations with governing powers

differs between Canada and the United States. However, the fact that concrete actions were taken to address the public health concerns of an approximately 2x increase in certain ethnic groups, whereas we have seen less action across the U.S. with an approximately 5x increase among Indigenous populations is disheartening. After multiple studies in Alberta which found that the processes of diabetes care are largely deficient and associated with higher rates of morbidity and mortality, the Diabetes Canada Clinical Practice Guidelines Expert Committee called for the “social origins of disease and illness” (namely diabetes) to be addressed explicitly “within Indigenous contexts of colonization, inequity and exclusion” understanding that the impacts of colonization are still very much felt today (Crowshoe et. al. 2018). The United States has yet to make a similar declaration surrounding a need for this same treatment of diabetes among Indigenous Native American populations. This research shows how a similar admission from the U.S. government would prove valuable not only in reconciliation efforts, but would also trickle down to produce a substantial health benefit for many Indigenous American Nations.

Within the contiguous United States, another cross-cultural analysis can be made to compare the Cattaraugus Reservation of the Seneca Nation of Indians to the Mississippi Delta region. While the majority of residents in this area are not Native, and do not add to the larger narrative of Indigenous health discrepancies, a comparative analysis in this context can provide additional insight into the various socio-cultural causes for diabetes. The main reason we would look to the Mississippi Delta is due to the area’s high rate of obesity and diabetes. As compared to the general US population rate of about 9%, the state of Mississippi has an average rate of 13%, with the Mississippi Delta area along the river reporting an average diabetes rate of approximately 20% (America’s Health Rankings). Mississippi also has the second highest rate of adult obesity, 37.3%, second only to West Virginia with 38.1%, and the highest rate of childhood

obesity (ages 10-17), with 26.1%. Mississippi is also home to the highest rate of food insecurity in the country with 21.5% of the population having ‘experienced limited or uncertain access to adequate healthy food at some point during the year’ (State of Obesity). While still not on the same level as prevalence rates among Native populations, it creates the closest comparison model between non-Native and Native rates within the United States.

Figure 12: Obesity Rates for Youth Ages 10-17
<https://www.stateofobesity.org/children1017/>



Anna Wolfe, a reporter at Mississippi Today, wrote an in-depth piece for the Clarion Ledger in 2017 entitled “Surrounded by crops, lacking food: A health paradox in the Mississippi Delta.” In this article, she turned to narratives from the residents of the area themselves, to report on the lived experiences beyond the surface story the numbers presented. Her method of story

telling was one that inspired me to turn to personal narratives to tell the story of health in this way with the SNI. In a phone interview with Wolfe, I asked her what she believes to be the main issues surrounding food insecurity in the area, and how much she thought the factor of race played a role in it. She responded,

“...people talk too much about food deserts and not having access to foods or to good foods, which is definitely part of it, but the main thing for the Delta area is POVERTY, poverty, poverty... there is also definitely a lack of access to education, lack of awareness of what kinds of foods to eat and to buy so it ends up being foods that aren't as good for you...”

And to my race point she stated very simply,

“Race? Race is everything in Mississippi, you can't separate the two.”

This response aligned closely with my previous research on food security across the country and also brought up similar risk factors specific to native populations and diabetes diagnoses.

Another question I asked Ms. Wolfe stemmed from personal curiosity as our interview took place right before I was scheduled to go back up to the reservation to conduct interviews myself. Understanding her positionality in these historically Black towns as a white woman ‘outsider,’ I asked, “How was the receptiveness of the general population? Were they skeptical of you being there?” She responded noting just how important that question was and how so many people fail to think about that aspect of her work.

“That’s a great question actually, and I guess I should have known this but I didn't, Holmes is actually the poorest county in the United States so you have a lot of journalists coming in, looking in on them, the things they’re doing wrong... and people really don’t like that...”

By looking at two communities who themselves have comparable income rates, employment rates, diabetes rates, obesity rates, and food insecurity rates, despite the extremely

different numbers for the respective state-wide populations, we can start to ask more pointed questions ‘why.’

Diabetes Prevention Programs Guidelines

Over the years, ‘health promotion’ diabetes prevention has taken many different forms. Many of the interventions and programs that have been implemented failed to include the community itself. One researcher, hailed as a good example of collaborative programming with native populations, is Macaulay, and in particular her work titled “Community empowerment for the primary prevention of type 2 diabetes: Kanien’kehá: ka (Mohawk) ways for the Kahnawake schools diabetes prevention program.” Macaulay opens her research with a history of the Mohawks of Kahnawake and the Six Nations Iroquois Confederacy, creating a basis from which the reader should then look to understand the context of diabetes she goes on to present. Macaulay describes how her first studies began to investigate the disease prevalence “presented in an open, interactive forum, allowing key community members to ‘self-diagnose’ diabetes as a relevant health issue,” the importance of which she noted was evident through her personal discussions with the Kahnawake family physician (Macaulay, 1997, 7). In her conclusion Macaulay first and foremost takes time to emphasize how more often than not, social justice for Indigenous populations is not realized due to the United States storied past of ‘governmental and colonial racism,’ going on to explain how her model of diabetes prevention has tailored to this very issue, and the success they have seen. Her findings state that the successfulness and longevity of the program are due to the fact that:

1. It did not try to force an outsider model, but was instead based upon their own traditional methods.

2. The program was fully community based and run which remains closely inline with the ‘strong autonomous roots’ that define the Kanien’kehá:ka.
3. The issue of diabetes and diabetes prevention was not seen as ‘socially disparaging’ and was instead explained as a threat to future generations and therefore needed immediate attention due to the importance and belief in the Seven Generations way of life.
4. To actively keep in mind the importance of participatory democracy in Kanien’kehá:ka culture, and the ‘value of social justice underlying health promotion.’

I aim to carry these four main guidelines for success that Macaulay outlines in her work in my own research. Not only does the similarity in the two Nations (both being members of the Iroquois confederacy and having a similar history of traditional agriculture rooted in the sustenance of the three sisters) make her work a fantastic comparison point for my own, but her devotion to holding Native voices and autonomy to be self-evident is the primary reason for my decision to have her work serve as a larger framework. Puneet Chawla Sahota highlights the collaborative approach the work of Macaulay facilitates in claiming that it benefits communities by empowering them to feel heard in the solutions that are proposed, provides assistance from academic researchers in the field directly to the community, and can even lead to potential policy recommendations that are especially important when it comes to “challenges such as diabetes” (Sahota, 2012, 826).

Chapter VI

Proposals and Discussion

The *ways of thinking* and approaching the issue of diabetes and food insecurity is typically where research tends to go wrong. A lifestyle-affected disease is not just what one's BMI is or how often someone works out. Instead this focus should center on a cultural mentality as well as lifestyle change. A cultural mentality begins with how regard food and medicine and food as medicine. The saying 'food as medicine' was coined by Hippocrates through the phrase "Let food be thy medicine and medicine be thy food." Despite the fact that it has become a very popular catchphrase, it currently circulates the web and general public health discourse under the wrong pretense. In the early 1700s the concept of 'medicine' and 'treatment' consisted of using traditional knowledge of indigenous plants for the care of ailments and happened largely in the home. This all changed with the institutionalization of medicine from the late 1800s to early 1900s. With the popularization of hospitals came a new school of thought. Medicine no longer came from the earth around you, but from men in white labcoats. As the focus shifted to technical detail and a specific diagnosis, treatment began to exclude this idea of food as medicine and treatments moved farther away from the 'natural,' and the traditional folk knowledge of plants and their medicinal properties also became delegitimized.

Throughout multiple discussions during my time on the Cattaraugus Reservation and speaking with various enrolled members living there, a certain theme continued to emerge. Many research participants harkened back to the old stereotype of Native peoples being 'savages' or 'barbaric.' Something that hold a bit of a painful irony in their minds. "We weren't stupid at all, we actually had it together" said one interview respondent. It has just been in the last few years that popular culture and researchers have begun to turn back to the Indigenous populations as a

real source of knowledge. Mainly to look at their previous ways of life to try and emulate the type of lifestyle in harmony with the earth. “It is such a cool time to see our kids growing up in a world where it is no longer such a bad thing to be Native. There is no longer a ton of shame around it.”

Proposed Programs:

Continuing to work collaboratively with the Department of Agriculture, there are two concrete plans I wish to propose for this exciting period of growth on the Cattaraugus Reservation. The first is a pamphlet that will I will produce to be made available in both the Seneca Nation Council building, as well as the new Department of Agriculture building once constructed. The current pamphlet that the Council building contains describes how to address loved ones living with diabetes, is very outdated. The new design includes a more detailed and up-to-date list of the various classes that the CCC offers, as well as the Department of Agriculture, and more about the cultural contexts that exist and should never be separated from dealing with the disease of diabetes.

Secondly, I propose the development of a website for the Seneca Nation Department of Agriculture. Although we would have to look into further funding or grants in order to secure the site, the idea behind a website would be a place for people to come together to post recipes, exchange Indigenous knowledge and stories, serve as a supporting community for one another, and post step-by-step videos taken at Gerry’s cooking classes for those who are unable to attend, to watch at home. This targets two of the major changes that research participants reported wishing to see take place in the area, a resurgence of the planting of their traditional Indigenous foods, as well as education around them.

Two of the models for this forum are the diaTribe Foundation based out of San Francisco, merged with the work of the Sioux Chef. The diaTribe Foundation does a great job of creating online communities of people either living with or caring for someone with diabetes. The Sioux Chef, a.k.a. Sean Sherman, a member of the Ogala Lakota tribe, started both a larger social media presence and published a book all with the goal of revitalizing Native cuisine and in the process, “identifying North American Cuisine and reclaiming an important culinary culture long buried and often inaccessible” (Sioux Chef, 2018).

In terms of the farm work being done by Gakwi:yo:h Farms, I looked to the model of the Agricultural Resources Project of the Salt River Indian Community for a guiding comparison. Gary Nabhan, in his book “Enduring Seeds: Native American Agriculture and Wild Plant Conservation,” explains that for this particular river community, over 75% of their farmable land had been rented out to non-Natives for decades, and by starting this project of growing their traditional foods again, they have “newly demonstrated the value of crops from their own tribal legacies” (Nabhan, 1989, 64). This restored connection of food to land to a historical legacy goes well beyond the physical act of farming. “These cultural communities offer us insights into the mutually reinforcing connections between a sufficiently earthly spiritual life, and skilled concern for the ecological integrity of food-producing land and plants” (Nabhan, 1989, 71).

Anthropologist Edward Spicer studied Indigenous populations around the world and after realizing that there was a large variation in levels of cultural assimilation within these groups, he decided to try and figure out why this was the case. In conclusion he found that regardless of the level of oppression they had faced, the only thing that mattered was whether enough members of the community continued with a proclivity for shared values and symbols across generations (Nabhan, 1989). In terms of bringing this into the realm of agricultural production and

specifically the Seneca Nation Department of Agriculture, I believe the answer lies in this idea that was previously mentioned of the “ecology of the heart,” the fact that in order to preserve and care for the earth, there is a necessary “emotional regard for the natural world” that must be present (Wilson, 2017). This idea fits seamlessly within the larger concept of Indigenous food sovereignty. As Nabhan explains, “a cultural community that persists in its farming tradition does not simply conserve indigenous seedstocks because of economic justifications; the seeds themselves become the symbols, reflections of the people’s own spiritual and aesthetic identity, and of the land that has shaped them” (Nabhan, 1989, 85). Having been blessed enough to have witnessed the work of Gakwi:yo:h Farms first hand and feeling the magic of returning to the land to hand plant seeds, I know that the potential of this project for the Cattaraugus reservation is truly limitless. I saw the ecology of the heart present not only radiating out of both Mike Snyder and Gerry Fisher over the summer, but I also saw it in the stories that people told me during their interviews later that winter. In our one-on-one interview in December Mike said to me in response to me asking him about the goals for the Department of Agriculture,

“Well I have to go back to the whole reason why. Why are we doing this? We are doing this because our people are killing themselves. By food. Every day, every meal. And we can either be proactive, or we can be reactive. Us being reactive hasn’t worked out too well for us. So me, it is a whole new approach to us catching up, let’s connect people... people are lost, they don’t have a connection, they don’t have a purpose...”

“You know it goes back to something I was always told. We have two mothers. The mother that birthed us, and mother earth. Our mother is crying out. Are we going to listen, and are we going to help? And that’s kinda the way I look at it... as a person of original habitat of this country, there is a responsible not only to the earth but to my people, to foster connections, and hopefully all that, will hopefully drive it. And even if it is just a few at a time, all these guys that work in our department, they feel it, they feel that connection, they feel needed, they feel wanted, they know that the community is depending on them and they’re not scared, they take it on....And that’s something that I want to share with as many people that want to feel it, so growing the foods its one, bringing them back, repatriation I think is the technical term, but there are so many different goals along the way that I think about, just trying to create a healthy avenue.”

Food Policy Implications and Options:

The negative health outcomes that resulted from the commodity food options are not just a cumulative problem of the past nor are they limited to Native populations. Just recently the Trump administration proposed another initiative to the list of food assistance programs, this one called the ‘Harvest Box.’ The 2019 plan calls for a complete change to the Food Stamp program. Despite First Lady Michelle Obama making the fight for healthier food options to be made available across the country, especially for students in lower-income neighborhoods, at the forefront of her mission, the White House has now taken a very different stance. The ‘Harvest Box’ would change the contents of the current commodity food packages and take away individuals’ ability to choose how they use their own food stamps. Those who are currently members of the SNAP plan have the autonomy to use an EBT card to buy the food of their choice, as long as it meets a list of guidelines. These guidelines include foodstuffs such as breads, cereals, fruits and vegetables, and exclude items such as alcohol, cigarettes, and pet food (USDA). Not only would the Trump proposal cut the funding for the program by almost 30%, but it would also “replace half the benefits people receive with boxed, nonperishable - i.e., not fresh - foods chosen by the government and not by the people eating them” (Godoy, 2018). These are the exact same foods that have been the staple of the foods provided as part of the FDPIR food packages delivered to families on reservations across the country and throughout this research have been shown to negatively affect health and wellbeing. There is a national outcry. Valarie Blue Bird Jernigan, an enrolled member of the Choctaw Nation in Oklahoma, in an interview with NPR stated in response to the new ‘box’ plan, “If you want to know what eating primarily shelf-stable and packaged foods does to a household or family or community, I think you could look closely at the Native American experience” (Godoy, 2018). Alluding not

only to the sky-rocketing rates of obesity and diabetes, but also to the fact that unpacking those commodity boxes bought with it a powerful stigma. Joe Van Alstine from the Little Traverse Bay Bands of Odawa Indians in Michigan adds, “I grew up on it, a bunch of my friends did. It was always the stigma of the can... you opened it up, and it was gross and nasty-looking” (Godoy, 2018). It is this same ‘nasty-looking’ food that is now being put back on the table for inclusion in the Trump administrations’ ‘Harvest Box,’ bringing with it a flood of memories for those who are all too familiar with its proposed contents. A popular term that was coined as the rates of obesity soared among Native Populations was the name ‘commod bod,’ to describe the overweight physique common among those who relied heavily on the foods available in the FDPIR packages. As a country with one of the highest rates of obesity for a first world nation, one can only wonder what effect decreasing the nutritional value of the food provided through food assistance programs will do to this rate.

The fact that this is an issue that expands outside of Indigenous populations means that nationwide change is much more likely to happen, as the number of stakeholders within this issue expands. As this happens, policymakers and advocates need to use this as an opportunity to expand the reach of various food subsidy programs or food desert programming to include reservations across the United States as well. As seen in the cross-cultural comparison with Canada, the first step should be to make amends and admit the causal relationship present at the heart of these negative health outcomes. The second step would be to create larger policies surrounding fast food restaurant locations in comparison to healthy food stores or fresh food availability. An example of which can be seen in the South Los Angeles Community Plan and their “Stand Alone Fast Food Restaurant Density” policy. This policy called for a “½-mile distance requirement for free standing fast food restaurants from any fast food restaurants” in

order to reduce fast food consumption rates (Community Health Council, 2017, 5). This would also need to happen in conjunction with a healthy food price ceiling, making sure that regardless of a person's income bracket, the unhealthier options are not the only ones made affordable. The final policy proposal, would be a mandated increase in positive corporate involvement in the area.

Corporate Involvement in the Area

As seen in the map listed in the geographical analysis chapter, the vast majority of the food available in close proximity to the Cattaraugus Reservation is fast food restaurants. McDonalds, Burger King, Tim Hortons, and even Aunt Millie's, are home to a menu filled with calorie- and sodium-rich and nutrient-poor food options. For many single parent households or even just low-income families who live on the reservation, these restaurants are the best, if not the only, option available due to the limited prep time necessary and the associated low cost. There is an increasing trend in corporations across the country of looking towards social entrepreneurship as a flagship value to market to the younger generations. Millennials are becoming more informed consumers and choosing companies / products based on what they stand for, and what *good* they are doing throughout the community or the country as a whole. In a recent article in Forbes magazine, scholars produced the results of their latest "detailed analysis of the data and many interviews with business leaders" in which they titled the findings "The Rise of The Social Enterprise" (Bersin, 2018). They found that 77% of the respondents reported that "citizenship and social impact" were noted as being critical or important and also being rated the "least ready" by the executives who were surveyed. In this particular case which can serve as a case study for corporate social entrepreneurship, businesses, especially those in the food business, could strive to be more a part of the solution for food desert areas versus being part of

the problem. This might look like Walmart providing incentives for area residents to shop at their stores, and *buy healthy foods*. This way the company gets to prove to consumers that they are enacting positive change, all the while actually providing an important service for the local communities.

Future Directions / Studies

The first follow up study would be to expand the scope of both the plate map exercises as well as the interviewing. Following a similar line of questioning as well as providing the same template for the plate maps, only with a larger respondent pool would allow for more rigorous and statistically significant results. The second suggested study would be to follow Gakwi:yo:h Farms as they continue to expand, grow, and hopefully being to provide substantial fresh produce to the residents of the Cattaraugus reservation. If the aforementioned programs are put in place, another study should be implemented in order to gauge their effectiveness, as well as any other beneficial interventions or programming that could potentially spin off of from them.

Two other types of studies that this research touched on but should be explored further are both the cross-cultural comparison model, expanding to additional Indigenous populations across the United States or elsewhere, using this Seneca Nation Department of Agriculture's model of returning to food sovereignty as a template in other places. And similarly, looking deeper into the similarities and differences present in the historical narratives that each unique population brings and how that may or may not be affecting their health and disease rates today. Another cross-cultural study could look further into discrepancies between diabetes rates and the food availability within historically African American towns, such as the Mississippi Delta. While there was a brief look into that comparison in the previous section, a deeper study that

evaluated both the food landscapes present in the town compared to the reservation, compared to specific demographic rates to see if there are any differences within the two most affected populations.

An 'ecology of the heart' is the answer not only to solving the issues of food insecurity on the Cattaraugus Reservation specifically, but also this method of being and believing can extend to help with the entire agricultural and nutritional crisis across the country. Anderson said that Indigenous communities have "...found ways to involve not only love but the whole panoply of human emotions in the conservation effort. We must learn from them or we will not survive" (Nabhan, 1989, 85). Mike Snyder explained to me in our informal focus group that he sees community farming as the way to solve the entire cascade of negative effects monoculture has unleashed on the United States. By having one or two farms where local residents can actively work themselves, or if not, can pick freshly grown produce, this reduces fossil fuel emissions for transportation, storage and packaging costs/waste, land waste and biodiversity loss by having more diverse crops planted, they provide more nutrient rich options which can positively affect disease rates, but this just scratches the surface.

Conclusion

This thesis has taken a holistic look into the disproportionate rates of obesity and diabetes among the Seneca Nation of Indians on the Cattaraugus reservation. By focusing on the lived experiences on the reservation I found that there is much more to the equation than a 'genetic predisposition' or consumer behavior / taste buds, and instead the structural frameworks of historical oppression, commodity foods, and limited fresh food availability in the area, have contributed just as significantly to the disease burden experienced today. These findings are extremely important because they provide a much needed contextualization to the public health

statistics that have become commonplace today. They help to provide an outline (in unison with Macaulay's previous work) as to how interventions in the area should target the cultural importance of food specific to the SNI in order to be the most effective. From broken treaties, forced removals, land betrayals, and general mistreatment from the government, to what some would argue should be classified as cultural genocide, Indigenous populations across the United States have suffered extreme historical injustices. The SNI is no different. This must be taken into account when dealing with diseases that result from structural racism like food deserts. The Cattaraugus reservation and surrounding area is a food desert. It should be treated like one by the USDA and all others who look to the area for development, involvement, or programming. The clear lack of accessibility shown not only in the interviews and plate map discussions listed above, but also as listed in the Co-op feasibility study defines it as such.

Overall, one central theme that needs to be addressed among the enrolled SNI Cattaraugus reservation inhabitants today, is the narrative of genetic predisposition that continues to hold true in so many minds. While there may still be some truth to the fact that Indigenous populations are more genetically predisposed to diabetes, epigenetics also plays a major role. Not only was the 'thrifty gene' theory disproved, but as explained earlier, Schulz's study shows that the increase of Type 2 diabetes is not genetically based, but is instead environmental in origin. The disproportionately high rate of Type 2 diabetes in SNI is consistent with Schulz's argument. Significantly, Shultz makes the further point that a Western diet is the main reason for high diabetes rates in Indigenous populations, as well as in the United States and across the world. The history of commodity foods that participants recounted in my research interviews directly shows how the introduction of a Western diet in conjunction with structural injustices have impacted multiple generations and continue to be impactful in the present context. The Co-

op feasibility study proved that the desire for increased availability of foods exists. The plate maps showed that there was no strong preference or natural tendencies among those who live on the Cattaraugus reservation to prefer a fast food meal. When research participants were asked what foods first came to mind as things they “liked to eat,” I found no significant difference between reservation residents and non-residents in the incidence of fast food meals drawn during plate mapping exercises. Lastly, my interviews provided strong evidence that the population living on the Cattaraugus reservation is ready for a major change in the area’s food availability.

This is the environment -- and the climate of eagerness -- that the Seneca Nation of Indians Department of Agriculture is poised to capitalize on. This is an exciting and important time for collective action that promises to shift the landscape of food insecurity and related health disparities.

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Appendices

Appendix A:

Interviews - Analyzed		
Q.1 – Do you like to cook? (17/17; 100%)		
Yes, Yeah – 11 (64.7%)	No, Not really – 4 (23.5%)	UC - Eh, Occasionally - 2
Q.1a – If yes, “what food do you like to make?” If no, “what food do you like to eat?” (17/17; 100%)		
I.1 – ‘I eat a lot, but the only thing I don’t eat is tapioca.’ But most time...I eat a lot of apples, I eat a lot of squash, corn, beans, a lot of all the traditional foods, I eat a lot of that, I eat a lot of wild game, a lot of wild fish. Smoked...broiled...		
I.2 – Pizza...pizza and chicken wings		
I.3 – ‘Yeah, a lot of the comfort foods, but I’ve been branching out to other stuff too, like fancier things, I used to watch food network quite a bit haha so...’		
I.4 – ‘Yeah... a lot of pasta meals, pasta and sauce... yeah pasta cause its easy...’		
I.5 – ‘Yeah there’s a few... I like uh... Spaghetti... noodles... The easy stuff’		
I.6 – Anything really		
I.7 – Chicken, asparagus, rice, rice and beans, Puerto Rican food, with pork, pizza, and spaghetti		
I.8 – Breakfast		
I.9 – Chicken... chicken and pasta		
I.10 – Soups		
I.11 – I like to make all of our traditional dishes...but I also like Japanese food Ummm corn soup, anything with venison, so game meats		
I.12 – Seafood... seafood and pasta		
I.13 – Yes. Everything. Not everything.		
I.14 – twice baked potatoes, and some kind of steamed veggies		
I.15 – I like to make anything that my children would like... just simple foods		
I.16 – Comfort foods		
I.17 – I make Mexican lasagna...Haha spaghetti, I like spicy foods, yeah		
Themes: ‘Traditional foods’ ‘comfort foods’ easy/simple		
Q.2 – How often do you eat in/how often do you eat out? (17/17; 100%)		
Eat most meals out – 8 (47%)	Half and half – 3 (17.6%)	Eat most meals at home – 4 (23.5%)
We are lucky if we get one [at home]	It’s probably half and half...	Three days out
Aww jeez... probably a good most of the time	9 or 10 and then the rest like we would probably order out	Four out of 7 Um I cook every day, maybe

<p>Probably three prepared, the rest eating out.</p> <p>Three meals at home... and then the rest of the week me and my wife go out</p> <p>Three or four [the rest eat out]</p> <p>Like four – the weekend I will go and eat out</p> <p>Well I got no one at home that will cook for me - go out a lot</p> <p>Maybe two</p>	<p>I would say about half.</p>	<p>once, maybe once a week I'll go out to eat</p> <p>Um probably two (times a week to go out)</p>
<p>Uncategorized – 2 Well my girlfriend cooks like on a week day, like four times out of the week like Fridays are our <i>inaudible</i></p>		
<p>Q.3 – Where do you eat out? (13/17; 76.4%)</p>		
<p>I.1 – We go to the poppy seed a lot.. Rockwoods, you got an Ace pizza thing going on there, you've got um... a wood fire oven and that's real good... I tested out their wings yesterday, they put them in a wood fired oven</p>		
<p>I.2 – N/A</p>		
<p>I.3 – if I'm with the kids just get them something at McDonalds, and if not we go to, just one of the local places like Toms or Aunt Millies...</p>		
<p>I.4 – Fast food restaurants... Tim Hortons, Burger King, the ones that are local</p>		
<p>I.5 – Oh we go all over</p>		
<p>I.6 – N/A</p>		
<p>I.7 – Longhorns, Applebees, Outback, Red Lobster, TGI Fridays</p>		
<p>I.8 – N/A</p>		
<p>I.9 – Goods... and weekends more like Hamburg... Outback</p>		
<p>I.10 – delta sonic</p>		
<p>I.11 – N/A</p>		
<p>I.12 – I would say most of the time its pizza and wings...</p>		
<p>I.13 – Ruby Tuesday – salad bar</p>		
<p>I.14 – It all depends on my cravings, and how far I want to drive. So usually when I get home I'm kinda lazy and so I'll just go to the local diners outside the res, and either Gowanda, or Irving. There are more restaurants in Irving</p>		
<p>I.15 – Outback</p>		
<p>I.16 – Um, lately farm to table...community kitchen... There's a place called the mustard</p>		

seed and the poppy seed		
I.17 – Um various restaurants, somewhere where there are choices, and healthy foods.		
Themes: Majority fast food & chains; Select few seek healthier options		
Q.3a – How far do you have to drive?		
N/A – 12/17 = 70.6% (1,2,3,4,6,7,8,11,12, 13,15,16)	More than 20 minutes – 2 (9,10)	20 minutes or less – 3 (5,14,17)
I.5 – 20 minutes or so.		
I.9 - it takes me forever to get to a good grocery store		
I.10 - It would take a normal person about 35 minutes to get there		
I.14 – About 15 minutes		
I.17 - Hmm probably about 20 minutes away.		
Q.4 – Where do you shop for groceries? (Respondents could answer multiple times.)		
Walmart - 4	Wegmans – 6 More organic foods, more expensive	Tops - 2
Shop n Save - 2	BKs - 1	Sam’s Club - 1
Summertime vegetable stands - 1		
Q.5 - What are the top five things that you get from the grocery store?		
I.1 – Um... beans, corn, squash or pumpkin... whether its canned or not, umm a lot of lettuce... eggs, and bacon. Eggs and bacon every day...		
I.2 – Um frozen pizza, bread, milk, pasta maybe, spaghetti		
I.3 – A lot of greens, apples... a kinda funny thing the kids like spinach a lot, but apples a lot of apples we go through about two bags a week, Milk sometimes, and bread... although the milk has started to decrease, sometimes I’ll get a half quart and it’ll go quick, or it’ll expire... oh and eggs...		
I.4 – Spaghetti sauce, pasta, hamburger chicken, and like eggs... or milk and cereal		
I.5 – Mostly canned products, my husband buys potato chips, can’t live without the, can’t forget the potato chips, cereal... because I eat a lot of oatmeal, vegetables, canned vegetables... um that’s about all I guess		
I.6 – Eggs, milk, bread, cereal, and... probably chicken.		
I.7 – Cereal, Bread, Cookies, and that’s about it I don’t know		
I.8 – Eggs, milk..... bagels... yeah eggs, milk, bagels... yeah		
I.9 – I usually try to have apples, oranges, chicken, aand... lately rice		
I.10 – Stovetop popcorn..., and fresh fruit. Pizza rolls. Um... I like, I’ve been really into kombucha recently.		
I.11 – Onion, carrots, celery, potatoes... and probably chicken?		
I.12 – Eggs, almond milk, fruit, bread... and.... I would say... probably like lunch meat or		

something.		
I.13 – ...ribs... Potatoes and butter... that is enough... to make me happy		
I.14 – almond milk, some sort juice our kids either like grape juice or orange juice or both, bananas, strawberries, blueberries.		
I.15 – Probably... apples, milk, um... grapes, bread, and juice, orange juice		
I.16 – Bread, milk, eggs... coffee, and creamer.		
I.17 – N/A		
Carbohydrates/Starches (Bread, Bagels, Pasta, Cereal, Oatmeal, Cookies, Chips, Popcorn, Rice) – 11 (2,3,4,5,6,7,8,10,12,15,16)		
Fruits/Vegetables – 9 (1,3,5,9,10,11,12,14,15)	Milk/Butter – 9 (2,3,4,8,12,13,14,15,16)	Eggs – 6 (1,3,4,6,8,12)
Meat (Bacon, Chicken, Luncheon Meat) – 5 (2,6,9,11,12)	Misc. Drink – Juice/Coffee/Creamer – 3 (14,15,16)	Frozen Pizza/Pizza Rolls – 2 (2,10)
Q.6 - Do you think what you eat affects the way that you feel or your general wellbeing?		
N/A - 4	Yes – 12/13 (92.3%)	No – 1 (7.6%)
Of the additional comments, only 2/11 suggests a positive effect from food – whereas 9/11 attributed food to negative effects (81.8%).		
I.1 – N/A		
I.2 – Yes, I feel good when I'm eating my pizza		
I.3 – N/A		
I.4 – Oh yes.. yeah. Oh yeah I feel like garbage		
I.5 – Umm no... because I watch what I eat		
I.6 – Yes.		
I.7 – N/A		
I.8 – Uh yes, yeah.. If I don't eat right away I can get sluggish, you know energy... I'm a personal trainer so...		
I.9 – I feel bloated, like if I eat something greasy...		
I.10 – If I eat something heavy, like think or processes I feel sluggish...But I also feel bloated after I eat like vegetables, but I know that bloating actually is really good for you like your digestive system, means your intestinal track is working		
I.11 – Yes. [Yes, you can feel a difference, like when you eat processed stuff vs fresh...?] Yeah, yes. This is the processed stuff <i>grabs side</i> hahah no		
I.12 – N/A		
I.13 – Yes. [How so?] Can you feel a difference when you eat different things? Yeah, healthy, you feel good about yourself Puts you in a depression... you walk around depressed... swearing, 'what are you lookin at' wanting them to feel the way you feel' 'I hope you arn't looking at me the way I'm thinkin about... the way I'm lookin at you...'		
I.14 – Of course If I'm eating crap, or a lot of grease, I feel bad and if I'm eating healthier foods, I feel a lot better, my energy levels, but when I'm eating traditional healthy foods, I think that's another level of <i>inaudible</i>		
I.15 – Yes I would have to say so		
I.16 – Absolutely. [How so?]. I think that when I eat a bunch of carbs and sugar I feel like		

crap.
I.17 – Oh sure
Themes: Clear connection between food and its effects – mostly negative, though. Traditional/Fresh – healthy; Processed - unhealthy
Q.7 - How important do you think food is to culture?
I.1 – Well food, a lot of this food here is really important because it actually is a religious thing for us. A lot of it originated from here, it is an especially a big part of our culture, and everybody... I don't know how true it is, but it's my thinking that every... kind of people has their own kind of three sisters, you know we've got the corn bean and squash, well everybody in the world that has culture, has got their....their staples... Yeah, and we always got our herbs from the wild, but around the world they all got their personal herbs too like, the cheyenes will have oregano, you go to asia they'll give you a lot of turmeric and curry and things like that
I.2 – N/A
I.3 – I think it is very important, just with, just some of the stuff people have grown up eating, like with my kids, they're 8 and 7... or 9! 9 and 7, so I'm just trying to get them out of the whole fast food kinda thing and back to the stuff I was eating when I was a kid, which was a lot of beans, you know we were here so we had wild game, they like deer meat, they like the the bison so far... and other than that... just try and get them into it...
I.4 – I think it is very important, because the way we eat is different than what our bodies... what our makeup is... and I think it effects like how our bodies react, and our genetics... I think it goes as far as genetics
I.5 – Very important <i>chuckles</i> I mean you have to have food to live!
I.6 – I think it is pretty important... I don't know necessarily about the food itself... but around here natives they like to eat, like everything they like bring together 'oh come over for dinner' there's always food involved, [So a large community aspect?] Yeah
I.7 – Very important - if you don't eat food, you can die, that's how important
I.8 – Extremely important, it is how everyone knows who is who
I.9 – Yeah I think it is really important because it gets you back... like I know this program is getting you back to growing your own... sustainability... even if it is just for your own household. [Do you like eating traditional food when they make they traditional dishes?] Oh yeah... I would rather have that than the other stuff...
I.10 – N/A
I.11 – N/A
I.12 – Very important. I think that food's important to culture because our food is something that has followed us for hundreds of thousands of years so... they share like those historical bonds that we do and if you look at newer food that has been introduced to our people, you can see the impact and the changes that it's made because medical wise we have always had a reaction, and so it is a huge factor like milk, sugar, salt, that weren't part of our diet historically have had a huge adverse effect, especially on our people, and what makes that really difficult is because we still remember the foods that we used to make before, with our like heirloom foods that cooperate better with our bodies so that says a lot right there when you see heirloom, indigenous foods, naturally grown foods, and the effects they have on the body, it's gotta tell you something you know... for us as Native people yeah, it is a huge deal for us...
I.13 – food to culture, or culture to food? [Either way!]

Cause one supports the other... and visa versa... and then how to store your food for your cultural events that take place throughout the year, **that's important**... you know more and more people don't follow it, because of the convenience of Walmart, you can just go and get it off the shelf, but long ago there was no food stores, and when you grow, and to keep your crops healthy, to harvest, it was a big deal, because you had to take good care of it, cause it could get bugs and disease so you had to know how to take good care, to store it, if you don't do a good job storing it, you're just leaving it to bugs... mice... and rats... they'll love you for it... but folks here... **it plays a big part in nourishment, your body, so you can get through the weather, to be healthy**, so you can make it through the winter to another planting season, that is how it is done every year, harvest, and a big winter, and you have got to make it through to at least the ripening of the wild onions, and rhubarb, and after that, strawberries you know, you have to know when it is time to plant, cause you have corn, and early enough, august September, that is when you have to be able to follow the ceremonies, in the winter, and be thankful for the creator, because you have been able to make it, and through another winter... because after that, the work begins again, another year, and if you don't make it, you don't make it... but you have to be able to have young kids in your family who's paid attention, to what you're doing, to what you've been involved in, so that they have a notion of how to continue, how to **pick up where grandpa left off... and remember these things you know** [To pass it on]

Mmmhm and it is not like going to school and learning them things, it is by staying home, and being close to your family, its is not by being out you know at town and impressing all the girls and the guys, it goes both ways... it is not about that... being concerned about what is going on in your life and in your family's life and your friend's life, **because there is going to be a time when your friends need some items or whatever you've got, you've got a good notion of providing some plants, or beans or squash whatever you've got, and you make a trade in some way, and maybe you're an artisan or something, and you've got some nice things to wear in your trade**, and then you'll be looking nice when it comes time to go to the creator... the creator commanded us to perform these yearly ceremonies, and they are still being carried on to this day... and a lot of us our losing our way, and there aren't enough of us that are paying enough attention to carry on and make it through... *inaudible*

I.14 – Well I've been told that **food is sacred**, it sounds catchy, but it is only sacred if it applicable. So to me, it is applicable. Why? Because I grow my own food. Aside from the farm I grow my own stuff at home. But the nice part is, because I don't have chef training, so its like all the potential dishes to go with the foods just going home?, and just being comfortable cooking, so to answer your question, yeah I think it is **very important** and in the language, our language is very descriptive, a lot of it ties to cooking, or food related practices, so it is interesting to see what these words really mean because it shows you **the process that our elders went through to cook the corn or anything else, what kind of tools they had, so it is like a direct connection to the past, I think it is very important**

I.15 – **Definitely**. [How so?] - Well... because... I think **it's important** because we are supposed to grow our own food... umm... and to **teach our younger generation the importance of growing to keep it going...** and I only say that because I don't grow myself and I wish I did like every day but other than that... I think that's about it

I.16 – Any culture or to my own? [Either]. Cause to the mainstream culture I don't think it really matters but to us, to me, yes. **It is important**. [How so?] It's important because it's who we are **it's the definition of who we are**, it's part of who we are.

I.17 – Well, I think it is part of the process. If you think back to how families were they always ate together, and you know planned together, and so did we as a nation. You know, the community worked together to make sure that the food was planted and harvested and sorted so that the entire community had foods to eat and it was all healthy, it wasn't any of this junk food

N/A – 3 (2,10,11)

Extremely/Very/Really/pretty important – 14/14 100% of the respondents who answered this question indicated that food is very important to culture (1,3,4,5,6,7,8,9,12,13,14,15,16,17)

Themes:

Historical/Ancestral Connection - 6 (1,13,14,15,16,17)

Traditional Dishes/Sustainable Practices - 6 (3,9,13,14,15,17)

Medicinal/Health (especially for Native peoples' health) - 4 (4,12,13,17)

Community Aspect - 3 (6,13,17)

Religious/Sacred - 2 (1,14)

Trade/Business -1 (13)

Quotes:

“three sisters, you know we've got the corn bean and squash” (1)

“like with my kids, they're ... 9 and 7, so I'm just trying to get them out of the whole fast food kinda thing and back to the stuff I was eating when I was a kid, which was a lot of beans, you know we were here so we had wild game, they like deer meat, they like the the bison so far... and other than that... just try and get them into it...” (3)

“I think that food's important to culture because our food is something that has followed us for hundreds of thousands of years so... they share like those historical bonds that we do and if you look at newer food that has been introduced to our people, you can see the impact and the changes that it's made because medical wise we have always had a reaction, and so it is a huge factor like milk, sugar, salt, that weren't part of our diet historically have had a huge adverse effect, especially on our people, and what makes that really difficult is because we still remember the foods that we used to make before, with our like heirloom foods that cooperate better with our bodies so that says a lot right there when you see heirloom, indigenous foods, naturally grown foods, and the effects they have on the body, it's gotta tell you something you know... for us as Native people yeah, it is a huge deal for us...” (12)

“If you think back to how families were they always ate together, and you know planned together, and so did we as a nation. You know, the community worked together to make sure that the food was planted and harvested and sorted so that the entire community had foods to eat and it was all healthy, it wasn't any of this junk food” (17)

Q.8 - Is there anything that you would change about the food on the reservation?

I.1 – We are doing it - this is it! We are doing it, I would definitely change everything about it, we are actually trying to turn it around and, like we have been eating this food for such a long time that if we don't eat this way, it is something to do with our DNA where it makes... I'm trying to think of the word... but diabetes is a big thing, and it's got a lot to do with all the imported food. [Like the processed foods?] Yeah like the processed food is real bad... even I can tell, if I eat milk or ice cream or something I'm done, it'll kill me man, *laughing I'm dying*

<i>man hahaha yeppp</i>
I.2 – Well I don't really eat on the reservation... [But if there were more restaurants on the reservation do you think you would go?] Oh yeah.
I.3 – Yeah I guess the hardest thing is just to educate people [About what to eat?] Yeah how to eat, and I think it is the basis for what we are trying to do here, we've got the cooking classes, and you have volunteers that can come up, and you can get a quart of beans for just a little bit of time, I think that's what people don't, you know its readily available, they don't have to work for it, you know with farming... its..It's a lot more work, and time,
I.4 – I think maybe... Yeah I guess...? Like more restaurants? I don't think it is really changing the food as it is the prices... I think a lot of the healthy foods are really expensive, so maybe more accessible...
I.5 – Um what would I change... there isn't really anything....So like having more...? I think just basically everything...because you only get your fruits and vegetables in the summertime, in the springtime you get your strawberries and cherries or whatever, but it isn't always fresh when you get it from the store
I.6 – Make it more easily available and affordable, like we have the Wolf's run right here, with a convenience store, but it's expensive...
I.7 – Well yeah cause my wife is Native American, so is my son so I would say yeah, I would live to see more restaurants on the res , more stores like...[More food stores?] Yeah like even healthy foods - Like fresh foods and stuff. There is a lack of fresh foods.
I.8 – N/A
I.9 – More healthy food available... [Would you go if there were more restaurants? On the actual reservation?] I don't know... [Or would you rather have a food mart or something?] I would rather go to like a food stand or something like that.
I.10 – That there's food available on the reservation!
I.11 – We are trying to now yes, trying to make people eat more healthier and add more white corn into their diet and make it more accessible for them [Are you guys going to have, when you get more produce from the farm , a place where people can buy produce here?] We... would like to, I would like to. Yeah like long term...Maybe yeah, like a food coop I know that long term we are looking to, but to have just a side food stand...
I.12 – N/A
I.13 – N/A
I.14 – What would I change? Well we are looking at a grocery coop, or the TSA, tribal supported agriculture, a farm stand , and with the bison, and even the white corn, it hasn't been, in our community, readily available for such a long time, we have to reestablish a market . So a lot of our products are going to have to be given out for taste-tests to build the market for them to, I guess for people to consume. Especially if it is the indigenous food ways, like the conventional crops, they're already buying it, so they already know what to expect, how to prepare it what dishes to make. But with our indigenous stuff I always get 'what does a bear been taste like, what does a skunk bean taste like, what do you use it with?' and I'm like I'm just growing these myself! I will tell you in four months!
I've always said our biggest enemy is convenience. So the time frame that we live in now, as much as we care to admit or not, a lot of us don't feed off the land. And on top of that, a lot of us are working 40-hour work weeks or more, and on top of that a lot of us are tied into the American school system, and the American life style, a lot of our kids play sports, to its like

from school to sports, they're only home for, home and awake for like three hours of the day and within that three hours, you have to cook, clean, get them bathed, make sure they do their homework and their chores and things like that. That's not who we were, that's not who we are. So how do we bring that all back to say, how are we going to be Seneca in 2019.

Convenience, assimilation... and it's by choice, it's not even by force anymore, and again I guess I would have to say generational historical trauma has contributed, and not having a pride about stuff, laziness, not having a responsibility to our community, alteration of our taste buds, 'cause there are flavors that – naturally sweet isn't sweet compared to what we can buy, everything is *whew* so I think that contributes as well so it is a combination of a lot of things you know. Not having the knowledge, cause a lot of our grandparents went to boarding school, so they lost a lot of knowledge. So how can...? I always say... cause people around here say 'oh it is the parent's responsibility'... but my thing is what if the parents are broken, what if the grandparents are broken, how are they going to **teach healthiness** when is it just a cycle of brokenness? Who in the family is going to finally say, I love you, and I want to be stronger, and this is how we do it. Where do you look to? So I feel like the farm is again something that helps them.

[Do you think is it a larger problem among the youth? Or across all age groups?]

Across all age groups. They start when they're young. What I've seen, about, I can always come from an athletic perspective as an athlete, but by the time you are done playing sports competitively, for some people it is after high school, for some people after college, along that whoole line, a lot of people have been eating crap, and metabolism slows down, and people gain weight when they stop playing sports. That athletic lifestyle is, everything is on the go I'm gonna run to burger king and grab something quick, habits are formed, and they are tough to undo. They never learned how to cook for themselves, so it carries with them. So I am 36 now, and I can honestly say that's kinda what happened to me. So I'm trying to go back now, and I got kids, and I can't... people are looking at whether I wanna admit it or not, and I acknowledge it. People look at me, you know growing these foods, and they're like oh you should be, you know asking me how does this taste, how do you cook this, how do you prepare this, and I'm like, I don't want to come across as a fraud either, but like I'm straight up with people, I'll tell them like, hey, I'm learning this stuff too, I learn with you. I'm not even trying to act like I'm an expert on any of this you know, so, I'll find out, lemme find out, that's what I like to say, lemme find out and I'll get back to you. But no, if they're older, there are so many people in my family that have diabetes... obesity... I guess yeah obesity... heart disease, on William's side there's like three of my great-uncles died from heart disease... cancer... so I don't think its one demographic from another

I.15 – Um I would probably like, like **I really like the agriculture department**, I think that was a great idea, yeah, um... only because we are getting away from **growing our own food** and I look at that department as hopefully one day having our own farm and we can do it all from... **there getting our food from there** – [Yeah that would be awesome] Yeah!

I.16 – Sure... **I would develop a food coop for us**. That's what I would do. I would take all of the food is being brought back by our agriculture department and make it available to all Senecas either for purchase, or for distribution, **especially to families that would not necessarily be able to afford it**. [That's awesome] I would purchase it personally but...

I.17 – Makes face... **one thing?!?** (that I would like to see change re: food on the reservation)

[Hahaha or multiple things...] Yeah, yeah... I would like to have healthy food more available , I think one of the biggest problems that we have is most of our workers are single parents so when they get through working, unless they learn to plan ahead, they don't have anything ready for their family, so they're grabbing pizza, subs, fast food.		
N/A – 3 (8,12,13)		
<i>Extremely/Very/Really/pretty important – 14/14 100% of the respondents who answered this question indicated that they would change something (1,3,4,5,6,7,8,9,12,13,14,15,16,17)</i>		
Themes:		
Provide fresher/healthier options - 8 (1,5,7,9,11,14,15,17)		
Make food more available and affordable - 8 (4,6,10,11,14,15,16,17)		
Offer a farm-fresh, food coop/market – 4 (9,11,14,16)		
Good changes are being made – 3 (1,14,15)		
Educate people - (3,14,17)		
Get back to growing our own food/indigenous food – 3 (11,14,15)		
Change everything/multiple things – 2 (1,17)		
More restaurants on the reservation – 2 (2,7)		
Quotes:		
<i>“I really like the agriculture department, I think that was a great idea, yeah, um... only because we are getting away from growing our own food and I look at that department as hopefully one day having our own farm and we can do it all from...there getting our food from there” (15)</i>		
Q.9 - Have you noticed any food prices going up? Or not really?		
N/A – 10	Yeah/Yes/A little bit - 4	No/Not really - 2
UC – I don't really pay too much attention		
I.1 – I mean not really, just in my mind where I'm spending my money on it, because I eat more organic food then I did before, when I did eat organic food, I grew it		
I.2 – Yeah going up.		
I.3,4,5,8,9,10,13,14,16,17 – N/A		
I.6 – I don't really pay too much attention		
I.7 – Uh, like kinda expensive but not too much [Have you seen prices on good going up a lot lately?] Um yeah kinda on like milk and bread		
I.11 – Yes		
I.12 – No I haven't to be honest with you... on meat you notice more but you have to take into account the natural disasters that are taking place, North Carolina, California... I don't think I've noticed a huge, huge raise in that, just specific things		
I.15 – Umm a little bit		
Q.10 – What do you think of when you hear the words 'food desert'? Have you heard that term used before?		
N/A – 8 (1,6,11,12,13,14,15,16)		
No, Don't know, Never heard that term before – 6 (4,5,7,8,9,10)		
I.2 - I think like there's like not a lot of good healthy choices, not a lot of food availability		

I.3 - Ummm, I guess it seems like something like a lot of local farmers I guess arnt producing enough, there is a need for it I guess, people are too into that readily available stuff

I.17 - Well Cattaraugus is definitely a food desert because we have to travel so far away to get our foods.

Q.11 – Do you remember certain meals that you would eat growing up? (Food Memories)

I.2 - Yeah my mom always cooked a lot growing up, and my grandma would always cook pancakes, stuff like that. Nothing too specific, just pork chops...

I.4 - Oh yeah it was like fry bread, biscuits, homemade biscuits, like macaroni soup, was stuff that we ate because it was... we were poor and so it was more plentiful with the amount of kids that my parents had, it was something that you could make cheap, but everyone could have some, so those were the meals... [Like the staples...] Yeah not the healthiest... but

Christine continued: "I was thinking about what I told you about how we just had to "eat poor" - it would be interesting to compare how much money people had and how they ate? Yeah like commodity food vs...?"

Well everyone on the res was raised on commodity food... that's why my mom would just make the macaroni soup, see she had seven kids, there were seven of us so she would have the macaroni soup and then add a can of tomatoes, and just have that with fry bread and we could all eat. And you know they sometimes would give you the actual oil with it to fry it, but other times it was just animal lard. So, we would most of the time fry the fry bread with lard not oil... and we still do sometimes haha it honestly tastes better that way anyways...hahah..."

I.5 - Well my mom... we had a limited supply of money so my mom... we would have potatoes for one, and she would have flour, so we would have fry bread, and she would make biscuits or... that's about all I guess, or brown canned gravy, that kind of stuff, our meats were like salt pork... every now and then we would have chicken...

"So, I drew that spaghetti on your sheet of paper, but I know that's bad for us. Our bodies don't process pasta it's like the worst possible thing I know." [I responded oh pasta? I didn't know that what do you mean?] And she said that their bodies were different and couldn't break it down, she could tell every time she ate it, "pasta and milk stuff" she said, she also went on to tell me that her nephew has really bad diabetes and couldn't visit her last year because he cut his hand and it wouldn't heal, so it was just a really large open sore he couldn't do anything about, "I told him no worries there is always next year, but he is kinda getting old so I don't know how many 'next years' there are left."

I.6 - Spaghetti, chicken... nothing besides that in particular

I.8 – tuna bagels

I.9 - Uh corn soup...uh... probably deli sandwiches...[Do you still eat the corn soup now? Do you make it?] Yeah... more like for special occasions type stuff... and then just pizza, wings, stuff like that...that became the new three sisters

I.10 - We always did something quick because my mom was going to school and it was just her raising us so it was just whatever she could do she was working full time and going to school full time so it was a lot of pizza... deli food... goulash... stuff like that

I.11 - Yeah... Um let's see french fries and pancakes... hahaha. I did have to end up learning how to cook when I was young cause my mom was a single mom and she worked for the state so she had... she drove a snow plow, so she was gone from 12 to 12. So I actually had to cook to take care of my sister so, whatever we had in the house is what I used to make, so what we had was four and potatoes all the time...

I.12 - I would definitely say beans and rice was a big part of our diet, there was, for us being a low income family it was a lot of commodity foods, it was a lot of commodity you know farina? And canned foods and cereal, and for us it was a luxury to eat a really good meal and for my mom that meant greens, and vegetables, and meat, it was always two vegetables and a meat, or a starch a vegetable and a meat, to her that was a well rounded meal, and so she would always try and make sure that every meal was like that. For us pizza was just something that was maybe once every couple of months not like where is is once a week for our family now, so growing up I would say our meals were always really well rounded, but there was also, she had to work, she didn't get to work with fresh foods she had to use a lot of commodity foods because we were low income

I.13 - Well my grandma... bean soup..... and potatoes. [Do you still eat that now?] Yeah... [Do you make it?] Yeah... but not like grandma...

I.14 - Yeah so we grew up, I grew up poor, even though my family had money, it was my dad's side with my mom, we still got the commodity stuff, or when she was pregnant with my brother and sister she actually got WIC, which was actually a big deal for us because I could actually get rice chex instead of chex oats or whatever they call that over as USDA, and I could actually get name branded orange juice instead of some orange juice, concentrated orange juice that tasted like crap, so I looked forward for when my mom was pregnant cause she got the WIC diets. But I remember one of my favorite dishes that she used to make, and she was by far no cook, she wasn't a chef but she cooked, as you had to when you are a single mom with three kids, kraft mac and cheese, beans, potato chips and dip, that was my dish when I was younger. But she made like, she didn't get real fancy, but there was always like one main meal and a side dish, but my grandpa, it was always meat and potatoes. [Do you think that everyone growing up on commodity food changes the way that they eat now?] Well we are creatures of habit. So to have to learn how to cook using different stuff you've never even used before, it does definitely change... and I'm not saying... well... and tastebuds too, well you get accustomed to the way that certain things taste, and even if it is healthier, better, more expensive, some people will still like the other. They're used to it - like I like canned mushrooms, as opposed to fresh mushrooms, on my pizzas, on everything.

I.15 - Umm... yeah like I always remember my dad always made like those Salisbury steaks and potatoes, we always had that when we were little. That was the one I remember mainly... and then like... we didn't really eat spaghetti that much... but it was that and then my mom always made a like a warm dinner with and vegetables.

N/A – 5 (1,3,7,16,17)

Themes: Foods – fry bread (4,5), pancakes/biscuits (2,4,5,11), pork chops/salt pork (2,5), macaroni soup (4), commodity foods (4,12,14), spaghetti/farina (5,6,12), chicken (5,6), tuna bagels (6), corn/bean soup (9,13), deli sandwiches (9,10), pizza (9,10), goulash (10) french fries (11), potatoes and four/meat and sides (11,12,14,15), beans and rice/beans (12,14), potatoes (13), kraft mac and cheese (14), potato chips and dip (14)
Poor/single parent –5 (4,5,11,12,14), Unhealthy/not fresh foods – 2 (4,5,14)
Commodity foods meant – you were poor and thus, were relegated to eat unhealthy, canned

food.

Quotes:

“then just pizza, wings, stuff like that...that became the new three sisters” (9)

“For us it was a luxury to eat a really good meal and for my mom that meant greens, and vegetables, and meat. It was always two vegetables and a meat, or a starch a vegetable and a meat, to her that was a well-rounded meal.” (12)

Q.12 – If you could learn how to cook certain dishes, like going to Gerry’s classes, would that help with cooking?

N/A – 7 (3,4,7,12,13,14,17)

Of those who responded with yes or no, they would like to learn how to cook certain dishes/attend Gerry’s cooking classes – 8/9 (88.88%) said Yes, they would like to go. And - 1/9 (11.11%) said No (his tastebuds are very particular)

I.1 - Oh tamales is a big one... we actually joined Mike at his house and all made them at his house. Oh that’s so fun, on my last day here they made a bunch of dishes and they were so good

I.2 - Oh yeah I always watch her... I’m like how does she make it look so easy? Yeah I think if people taught me how to cook it would be easier

I.5 - No not really, my tastebuds are... they’re very particular...

I.6 - I have not [been to any of Gerry’s classes]

[Do you think that if you went to the classes and learned how to cook the meals they are doing that you would be more likely to make them more often?] Yeah I think so

I.8 - Oh yeah, definitely

I.9 - 9: No I haven’t... (been) [Would you be interested?] Yeah I’ve been trying to get her to come down here and give us one here. Yeah that would be awesome! I think they might try to actually! Yeah if she could come down for a cooking class that would be great so people could learn [Learn more about...?] Like how easy or how simple it is to get everything together...how to get started...or with meal prep

I.10 - I didn’t even know she was doing any (cooking classes)?

I.11 - We did cornbread, we did mush, we did corn soup, we did tamales, umm we made cookies using the white corn, pumpkin pie - from scratch...but up here I’m just doing them for the guys, cause some of them have never cleaned corn the traditional way.

I.15 - No I haven’t gone, but I would like to go.

I.16 - Yeah! Sure... I probably know...most of them (the traditional dishes). Yeah but I would still love to go.

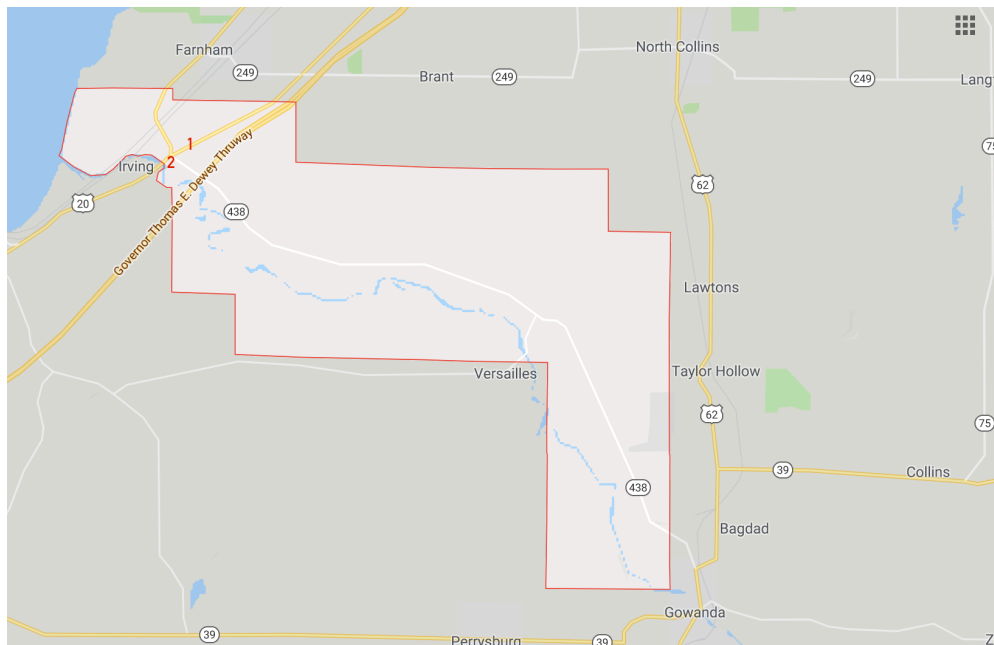
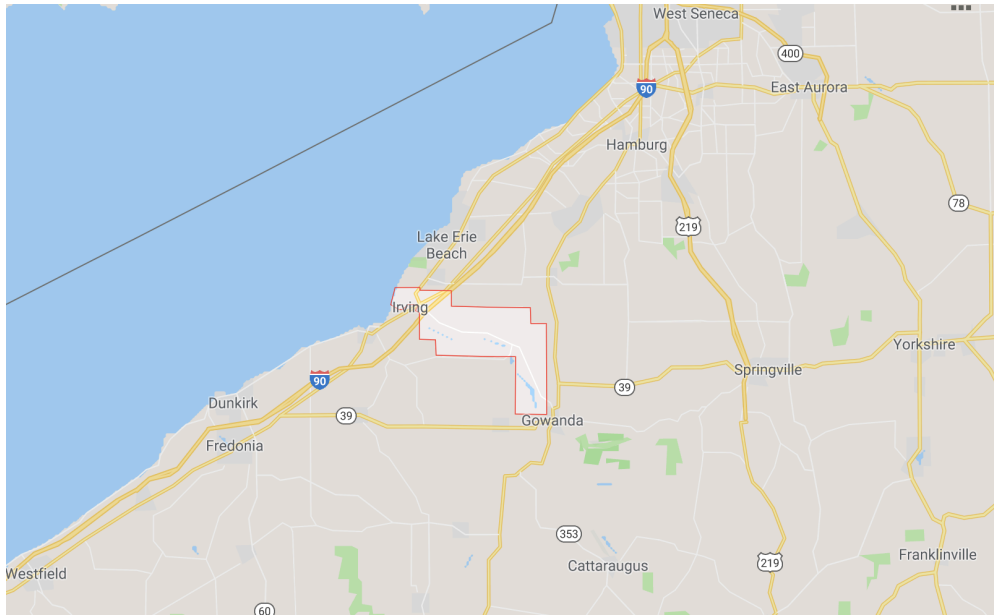
I.17 – Yeah. So, basically we have two kitchens next to each other. There is a cannery, where all the food processing is, and a, we call it food demonstration kitchen, but it is going to be all cooking classes. Cause it closes the loop, so its from- we are going to be handing out seeds, we are going to be growing them ourselves, I don’t know they are talking about even coming and plowing people’s yards...But that’s, there’s some of the community members, that’s a whole crew of people that I would have to hire on. Cause once I do one, how do I distinguish?

Appendix B

Semi-Structured Interview Questions:

1. What do you like to eat? Do you like to cook?
 - a. If so, what dishes do you like to make?
2. Where do you do most of your grocery shopping?
3. How many meals a week would you say you prepare?
4. And how many meals a week do you eat out (restaurant or other location)?
5. Do you think what you eat affects the way you feel or your general wellbeing? How so?
6. How important do you think food is to culture?
7. Do you have certain foods that bring back memories for you either positive or negative?
8. How important is food specifically within your community here in Cattaraugus?
9. How many restaurants are there on the Cattaraugus reservation?
10. What is one thing you would change about the food available to you here on the reservation?
 - a. What about in the surrounding towns?
11. What is the first thing that comes to mind when you hear the words 'food desert'?
12. Have you noticed food prices in the area going up over the past few years or not much of an issue?
13. Do you ever worry that you aren't going to have enough food for your family to eat?
14. Would you say that you yourself are food secure or food insecure?
15. Do you think the whole area (Gowanda, Silver Springs, etc.) is lacking in fresh food availability, or do you think it is especially bad here on the reservation?
16. What are the top five common items on your shopping list or things that you always have in your fridge / pantry?
17. If you could learn how to cook one thing what would it be?
 - a. Have you been to any of the cooking classes with Gerry and have you applied anything you learned from them yet?

Maps of Area Restaurants & Pictures:

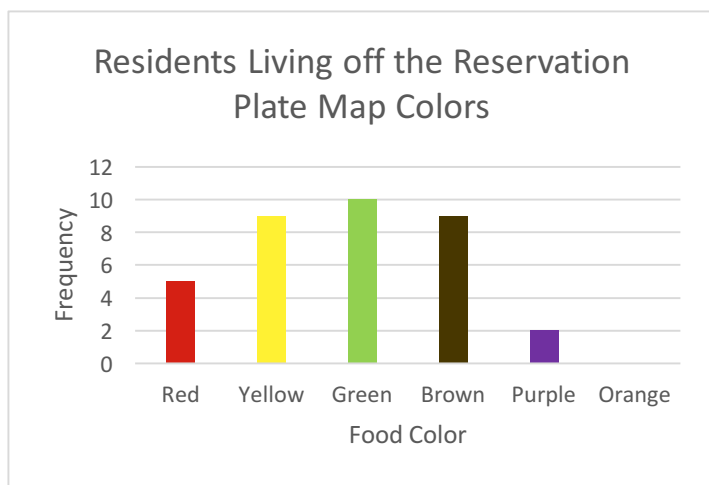




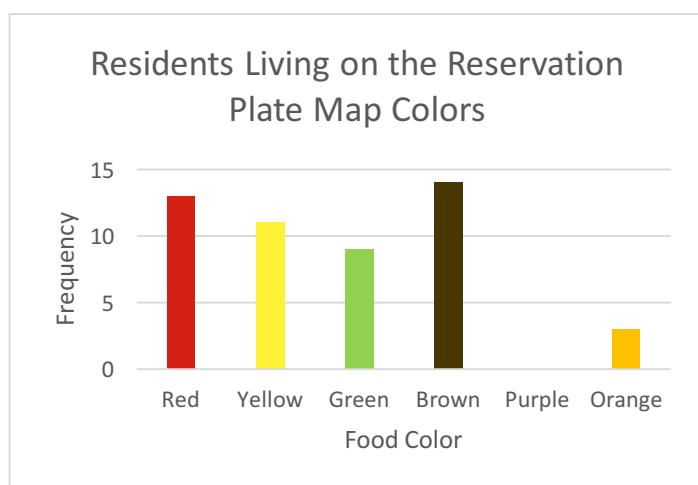
Appendix C
Plate Map Analysis:

Of the 17 plate maps drawn by those living off of the reservation, 11 were drawn with the colors of the markers according to the particular color of the foods they were drawing. When the 11 plates were then coded by the color (used to draw actual pieces of food not receptacles), the following data were presented:

Off the Reservation
Plate Map Colors - Bar

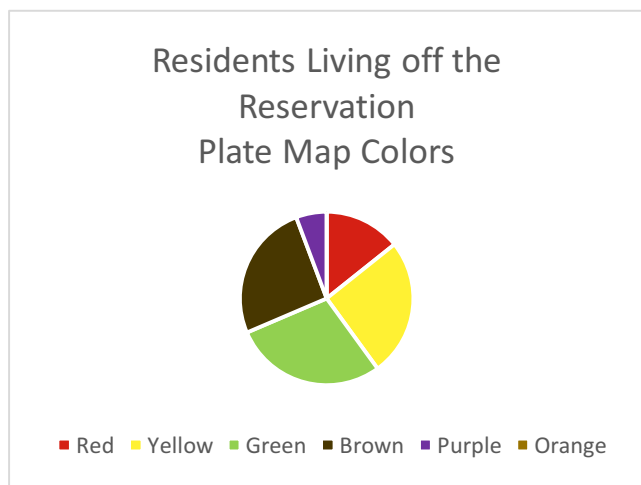


On the Reservation
Plate Map Colors - Bar



Of the 14 plate maps drawn by those living on the reservation, 11 were also drawn with colors directly relating to the actual color of the foods depicted. When the 11 plates were then coded by color, (used to draw actual pieces of food and not receptacles), the following data were presented:

Off the Reservation Plate Map
Colors - Pie



On the Reservation Plate Map
Colors - Pie

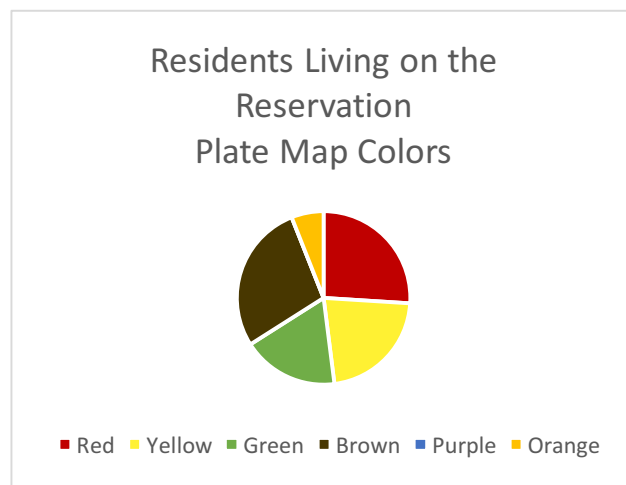
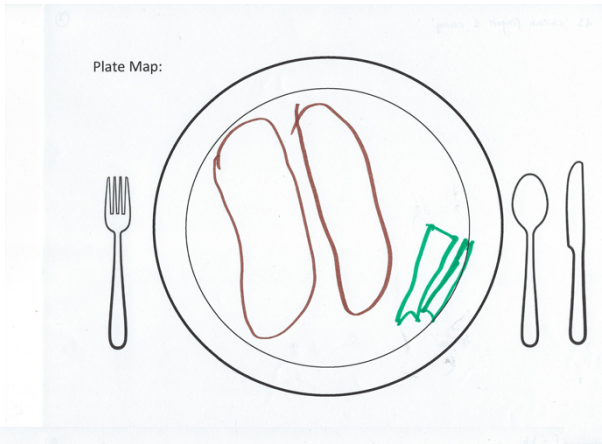


Plate Maps – Residents off the Reservation

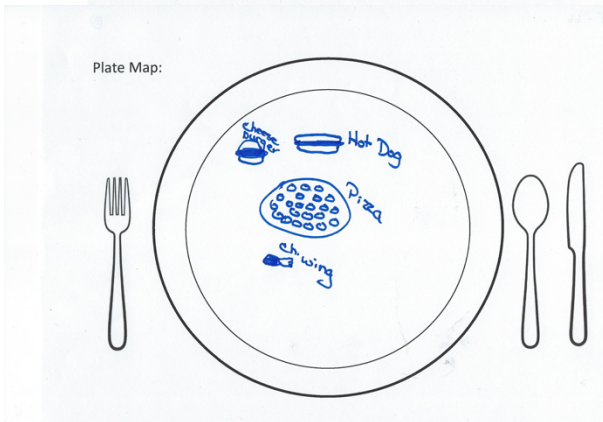
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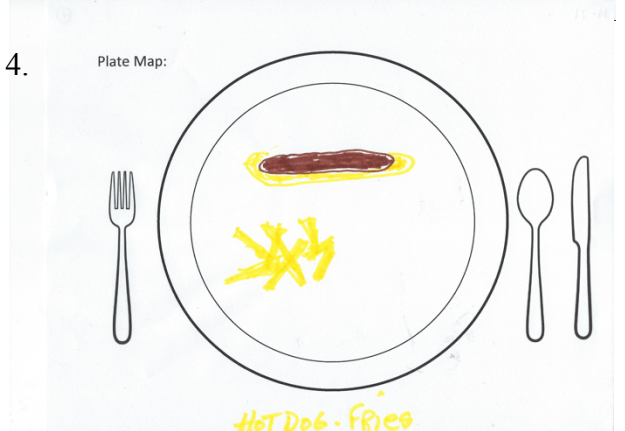
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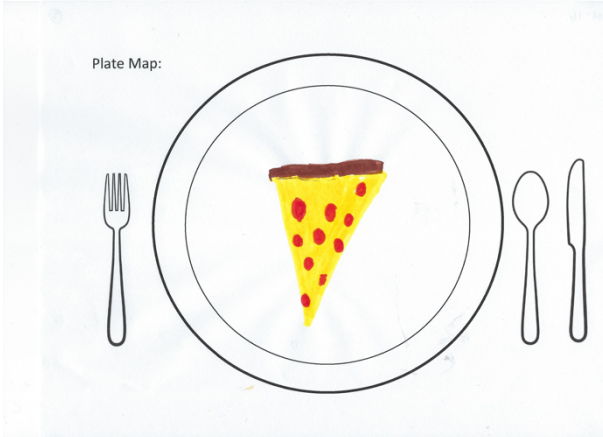
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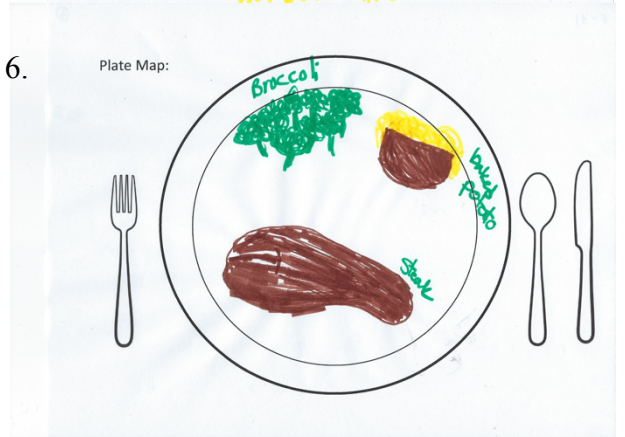
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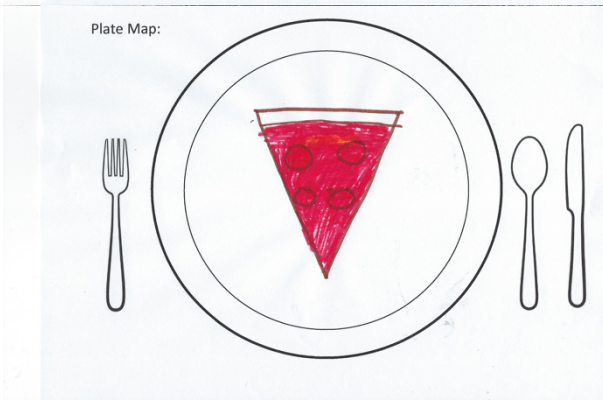
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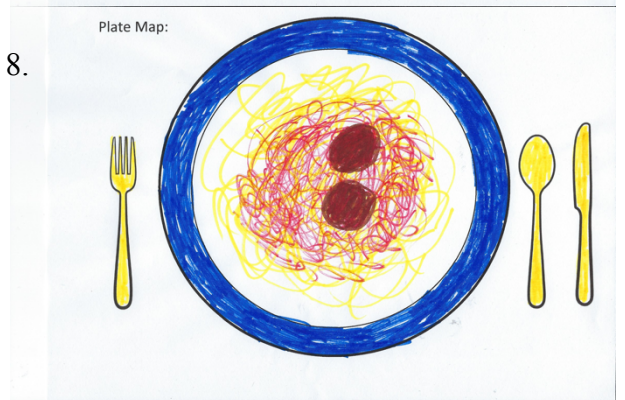
6.



7.



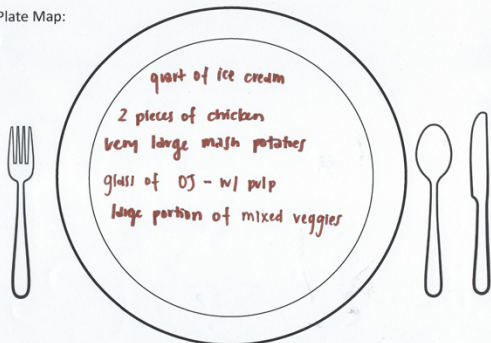
8.



9.

Plate Map:

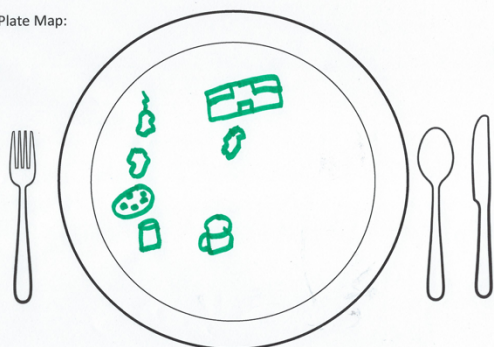
72



10.

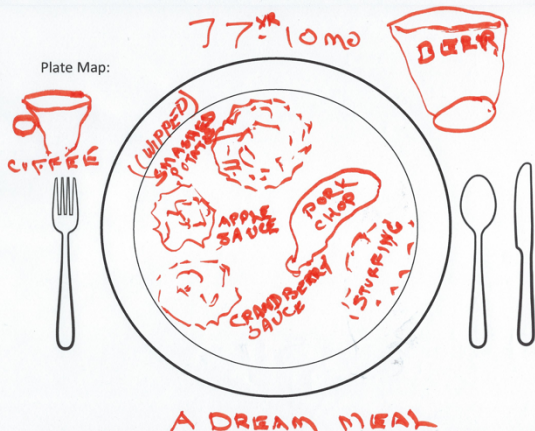
Plate Map:

70



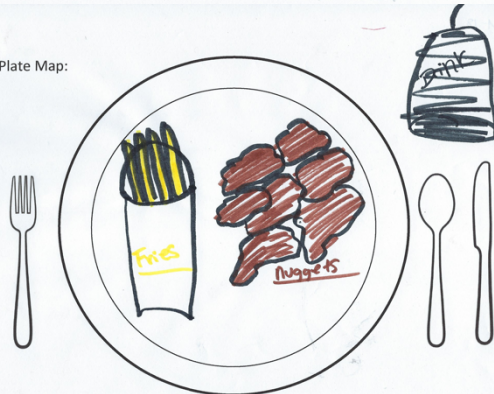
11.

Plate Map:



12.

Plate Map:



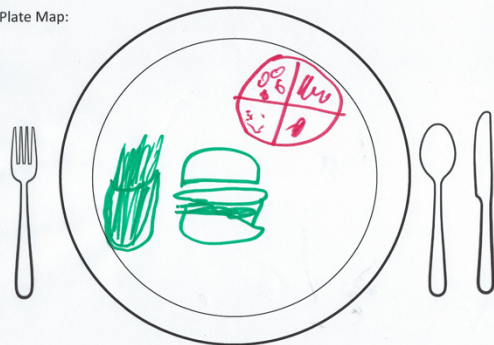
13.

Plate Map:



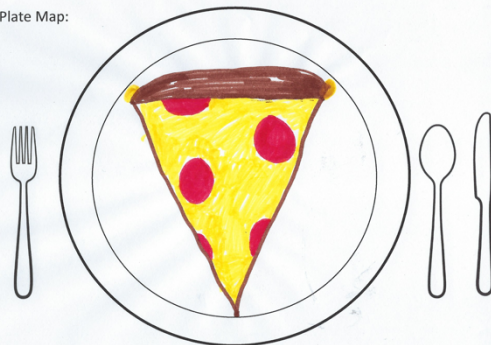
14.

Plate Map:



15.

Plate Map:



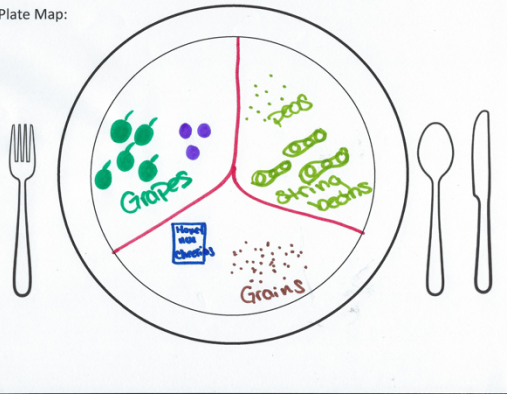
16.

Plate Map:



17.

Plate Map:



Descriptions:

1. Male – 43 yrs old
Chicken fingers and celery
2. Male – 64 yrs old
(drawn by PI)
Steak, Mashed potatoes, green beans,
and a side salad
3. Female – 66 yrs old
Cheeseburger, hot dog, pizza, and a chicken
wing
4. Male – 71 yrs old
Hot dog and French fries
5. Male – 16 yrs old (with mom)
Slice of pepperoni pizza
6. Female – 45 yrs old
Broccoli, baked potato, and steak
7. Female – ‘In her 60s’
Slice of pepperoni pizza
8. Male – ‘In his 60s’
Spaghetti and two meatballs

9. Male – 72 yrs old
(Asked for PI to write)
Quart of ice cream, two pieces of chicken,
very large mashed potatoes, glass of orange
juice with pulp, and a large portion of
mixed veggies
10. Male – 70 yrs old
TV dinner, Hershey’s kisses, cookie,
glass of soda, mug of coffee
11. Male – 77 and 10 months old

(Whipped) Smashed potatoes, apple
sauce, cranberry sauce, pork chop,
stuffing, a mug of coffee and a glass of
beer
12. Male – 18 yrs old

Chicken nuggets, a sleeve of French
fries, and a drink
13. Male – 18 yrs old

A slice of peperoni pizza
14. Male – 26 yrs old

Pepperoni pizza, cheeseburger, and a
sleeve of French fries
15. Female – 17 yrs old (with family)

Chicken nuggets, sandwich, donuts, salad,
pineapples, cereal, and pizza
16. Female – 16 yrs old (with family)

Chicken nuggets, green peas,
macaroni and cheese, and grapes

17. Female – 18 yrs old

Green and red grapes, green string beans,
A box of honey nut cheerios, and
miscellaneous 'grains'

Plate Maps – Residents on the Reservation

1.

Plate Map:



2.

Plate Map:



3.

Plate Map:



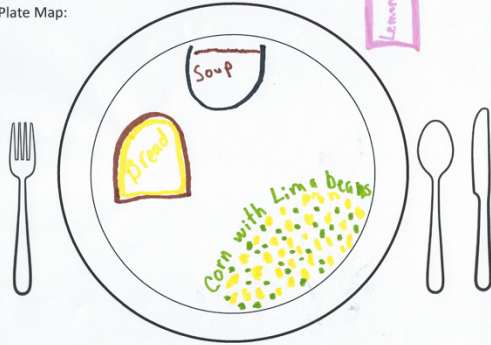
4.

Plate Map:



5.

Plate Map:



6.

Plate Map:



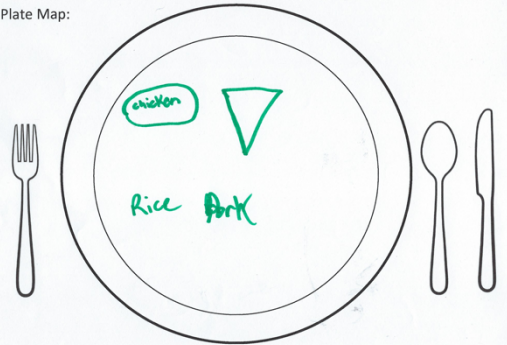
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Plate Map:



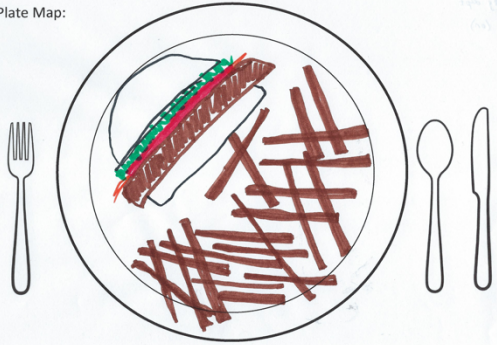
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Plate Map:



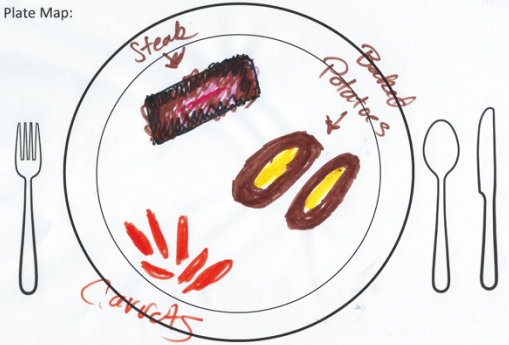
9.

Plate Map:



10.

Plate Map:



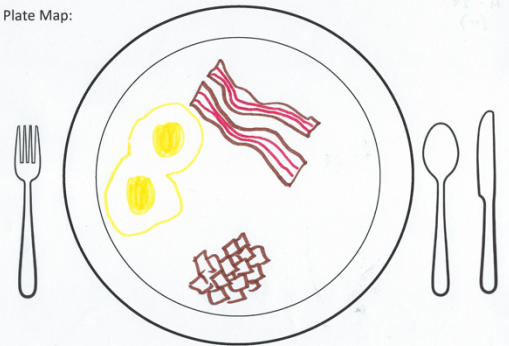
11.

Plate Map:



12.

Plate Map:



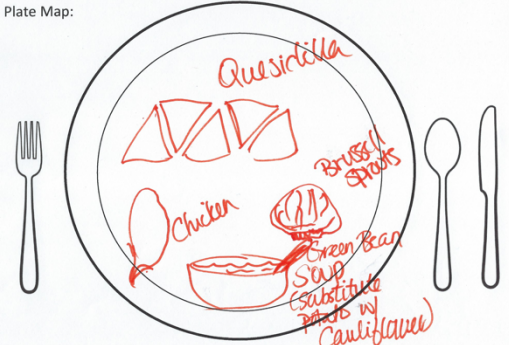
13.

Plate Map:



14.

Plate Map:



Descriptions:

1. Female
Lobster, shrimp, crab legs, brussel sprouts, seaweed salad, sushi, clams,
2. Female
Shrimp and muscle pasta, cantelope, and salad with fruit
3. Female
Pepperoni pizza, chicken nuggets, and fried pickles
4. Male
Pepperoni pizza, chicken nuggets, skittles, and a mountain dew
5. Male
A bowl of soup, piece of bread, corn with lima beans, and a glass of lemonade
6. Male
Grilled chicken, mashed potatoes, salad
7. Male
Spaghetti and meatballs with a salad
8. Male
Chicken, pizza, rice, and pork

9. Male
Cheeseburger, or bison burger, and fries

10. Male
Steak, baked potatoes and carrots

11. Female
Meatballs and spaghetti

12. Male
Eggs, bacon, and hash brown potatoes

13. Male
Chicken, rice, and broccoli

14. Male
Quesadilla, chicken, Brussel sprouts,
and green bean soup (but substituted
potato with cauliflower)