

Understanding Access to and Use of Traditional Foods by Hopi Single Parent Female Headed Households: Outreach to the Hopi Community and its Organizations

Cornelia Butler Flora, Iowa State University;
Matt Livingston, Pu'tavi and University of Arizona Extension;
Iva Honyestewa, Pu'tavi, Second Mesa;
Harrissa Koiquaptewa, Pu'tavi, Third Mesa

How do Hopi single mothers invest community capitals to increase their consumption of traditional Hopi foods? What capitals do they seek to increase by such investments? There is significant literature on the human capital and cultural capital aspects of traditional Native American diets (Cantrell, 2001;). We look at all the capitals – natural, cultural, human, social, political, financial and human -- that single mothers mention as related to their access to and use of these foods.

There is substantial evidence that the traditional diets of Native peoples contributed to their health and fitness, and that the “modern” diet of chips, fatty meats, sodas, and fried foods has contributed to an increase in obesity-related ailments, such as diabetes, stroke, gall stones, adverse pregnancy outcomes, and high blood pressure (Welty, 1991). Native American women were more likely to be obese than Native American men (Broussard, et al. 1991), with concomitant health-related problems, although by 2004 the obesity rate of Native American men passed that of Native American women (Vital Statistics, 2004). As De Cora (2001) points out, the impact of diabetes is not just on individual health and finances, but that of family members, the village, and the tribe.

Multiple resources have been mobilized on reservations by Cooperative Extension, the Forest Service, the Indian Health Service and not-for-profit organizations to return diets to the traditional foods (Struthers, et al. 2003; Bachar, et al. 2006; De Cora, 2001). These programs not only stress the nutrient benefits of reclaiming traditions food, but also reclaiming the cultural traditions that support the production and consumption of those foods.

Although the traditional diet is often equated with food insecurity, in-depth studies of traditional foods reveal a diet that was modest in terms of caloric intake, but balanced in terms of nutrients (Kavena, 1990). For example, in the near absence of sodium chloride, the high mineral content of traditional diets seems remarkable. Calloway, Giauque, and Costa (1974) report that samples of traditional Hopi and Papago foods were consistently higher in essential minerals than were the substituted federal commodity foods. The Hopi culinary practice of adding ashes of green plants to various corn foods raised still further the already superior content of most minerals, notably calcium and iron (Wirsing, et al. 1985).

Native American childhood obesity has increased rapidly since 1955 (Story, et al., 1999). It is likely that the measured increase in the obesity of Navajo school children between 1955 and 1988 (Sugarman, et al, 1990) was mirrored in the unmeasured increase in obesity of their neighbors, the Hopi. While there has been some work on school-based programs (Davis, et al. 1999; Cabellero, et al. 2003), mothers who respond to the negative impacts of food deserts on the reservation by gathering, preparing and serving native food with the participation of their children can have a major impact on children’s eating and activity preferences.

Methodology

The Hopi in particular have been subject to intensive and intrusive studies since the 1880s, which, however sympathetic, were outsiders assessing the Hopi. Because of the arid environment and extreme weather conditions, once the Spaniards were drive out in the Pueblo Revolt in 1680, there was only one European settlement on what is now their reservation – that of the Mormons near what is now Tuba City. The relative isolation and the fact that they were not

removed from the heart of their world (although their access to many important sacred sites was systematically limited (Cohen, 1987) meant that many cultural traditions were intact, although under constant attack. Those traditions, where food, agriculture and community were central and highly interrelated, were a source of profit for the Santa Fe railroad and of hypothesis testing or descriptive analysis by anthropologists and other scholars. Perhaps the most complete study, *Culture in Crisis: A Study of the Hopi Indians*, by Laura Thompson (1950), which looked at "five interrelated dimensions for purposes of structural analysis: 1) ecological; 2) somatic; 3) sociologic; 4) psychologic; 5) symbolic" (Thompson, 1950:12). As the Hopis gained sovereignty, they limited access to outside scholars, correctly questioning the use of Hopi data for non-Hopi ends, which at times contributed to the destruction of the sacred places most important for cultural continuity.

Both the interviews and the focus groups were designed as a negotiation between external sources of resources and locally-perceived issues where collaboration could result in generalizable knowledge and supporting a healthy ecosystem, economic viability and social inclusion in villages on the reservation. Participatory action research seemed the most appropriate approach, creating a partnership between the investigators and the communities (Davis and Reid, 1999). Cantrell (2001) demonstrates the effectiveness of focus groups for sharing food-related knowledge among tribal members.

We built our approach on the experience gained by Livingston and Flora in the Hopi Pu'tavi Project study of Hopi farmers (Moon, Flora and Livingston, 2003) and Hopi food access study (Livingston and Flora, 2006). In those studies, representatives from each mesa were recruited to help design the interview schedule, identify the sample through a quota sampling frame, write up the interviews in English (Hopi was the language primarily used in the interviews, as English has limited utility in that complex and diverse system), and code the interviews, transforming open-ended answers into generally dichotomous variables. They also learned how to use descriptive statistics and generate testable hypotheses based on the data. One of goals was to increase the research capacity of the Hopi nation.

Our first commitment in the research is to return our finding to the communities for them to use. We used a methodology of listening sessions that the NCRCRD had used effectively to understand the potential of e-commerce on reservations, which included but was not limited to the Hopi reservation (Bregendahl and Flora, 2003). There is also concern about the validity of survey research, as pointed out by Byers (2003) in discussing the highly probable response biases in the well-supported Pathways study of American Indian children's food intake and physical activity.¹

We held several meetings with stakeholders on the reservation involved in Food Security and child well-being to get their input into our study and to frame the issues. The core team included

- Hopi Pu'tavi Project, Inc.
- Community Representatives: Ms. Iva Honyestewa, Ms. Harrissa Koiyaquaptewa,
- Leigh Kuwaniwisima –Director – Hopi Cultural Preservation Office
- Brenda Patterson – Director – Hopi Office of Youth Affairs, the Natwani Coalition
- Joyce Hamilton – Director – Hopi Office Diabetes & Tobacco Prevention
- Priscilla Pavatea – Director – Hopi Office of Range Management, Micah -Natural Resources Planner
- Dr. Cornelia Butler Flora – North Central Regional Center for Rural Development, Iowa State University
- Matt Livingston – Associate Agent – University of Arizona Cooperative Extension Hopi Office.

Appreciative Inquiry was used in developing the focus group questions. They are open ended questions that allow individuals to answer in a manner they choose. The questions assume that experiences. The questions used reflect the need to better understand what the food experiences have meant to people participating in the focus groups. The focus group interviews were sent to Dr. Flora at Iowa State University for review and for preparing the initial report.

In this analysis of the rich data from the surveys and focus groups, we focus on the intersection of community capitals that the women recognized as important for their own and their children's and grandchildren's health. Corn was a unifying force in this study. "Corn is life and piki is the perfect food" (Simmons, 1942: 52). As Lee (1957) makes clear, "...true Hopi life cannot go on without corn. Corn functions as food, but that is only one of its functions. No child can be born with security, nor live through the first hazardous twenty days of life, without corn. The entire process of growing and harvesting corn, in fact, is vital for a meaningful life, since the entire religious cycle of ceremonials is bound with the growing cycle of corn." (Lee, 1957:109).

While our initial survey focused on foods, women participating in the focus groups spontaneously pointed to the changes in physical activity related to cultural changes. Our participants showed a clear understanding of the environmental factors that had changed Hopi people from lean and fit to obese and unhealthy

Community Capitals Framework

Previous research has shown the impact of the mobilizing multiple capitals for community sustainability (Flora, et al. 2008; Fey, et al., 2006; Flora and Flora, 2007). There is also increasing evidence that obesity is an environmental issue, rather than one solved by only by medical intervention or education. Our interest in this analysis is to determine the capitals that Hopi single mothers mobilize for what reasons in order to get access to, prepare, and share traditional foods and how that resource mobilization changes the environment for a healthy lifestyle.

Natural Capital

Natural capital is critical for Hopi survival. It includes land, weather, hydrology, topography, and biodiversity. As a matrilineal society where the clan, which is determined by the mother's lineage, women determine land access to men of their clan, which includes unmarried males of direct descent and men who have married women of the clan. Traditionally, men and women have had different knowledge and use of natural capital, with the men, through hunting, having knowledge of fauna and flora, often bringing home wild edible plants that they find near their fields or coming and going from the field.

A participant at one Focus Group said, "*I don't really know much about plants. If my mom mentions it I don't pay attention. When they ask me to go with them that's when I get involved. I picked nanakofsi-oregano. My husband picks the wild spinach.*" Women also, through gathering, share knowledge of flora in the region. A Hopi woman at another focus group sessions stated, "*Probably every once in awhile I cooked the wild greens. I learned from my husband the wild green. Spinach we had he gets at his field. I go out but I don't know what it looks like, if I go by myself I wouldn't know what to pick.*" As a result, important nutrients and seasonings have come from wild plants and animals.

All the focus groups were aware of natural capital as a source of food. But they saw this changing, particularly as a source of protein. Many of the women mentioned that there now was no one in their family that hunted. Others pointed out that one of their favorite dishes, rabbit stew, was no longer possible as the rabbits had "a plague", which meant that the wild rabbit were no longer "good for you". This shift in natural capital removed one of the favorite meats from the menu, and meant substituting domesticated meat, particularly sheep or pork, rather required

cash, rather than skill, to acquire. While men hunted, the matrilineal ties meant that nephews would often provide wild meat for single mothers.

The women in the interviews and focus groups were proud of the use of natural capital in traditional foods. They pointed out that traditional foods

- Utilize a wide diversity of wild plants and animals.
- Do not use industrial products
- Depend upon the rain and hydrology
- Maintains cultivated biodiversity through saving seeds from previous harvests.
- Utilize every part of the corn: pollen, silk, fungus, stover, green leaves, dry leaves, cob, and the kernels.

Wild plants are still consumed by the Hopi and traditionally provided a source of fresh produce for the population. (Hough, 1899, Whiting, 1939). Our respondents showed great interest in maintaining and reviving knowledge and use of wild food sources

Tumble weeds was one that we cooked called Russian thistle. It was pretty good, it tasted like spinach. Me and Ed went down below looking for the real young weeds, I got corn husk and that's what I wrapped the tumble weeds in I added no ung tus havu [another wild plant] to it for flavoring. I cooked it like tamale. I was hesitant to taste it. It was good Richard was really eating it good. I gave it to my mom she said it was good. Also gave to sister and her son. Now I know I won't starve someday. (Focus group at Iskasokpu)

Some of the women were concerned about the loss of traditional knowledge about where to find the plants and how to use them. Officials in the Hopi Department of Natural Resources are concerned that poor harvest techniques may keep these important endemic species from reproducing. Too often some plants are completely removed from sites due to over-picking. DNR does encourage community members to make use of the plant resources and their Office of Range Management/Land Operations technicians do make presentations to schools and community groups about these edible wild plants.

Cultural Capital

Cultural capital provides a particular manner to see the world, define what has value, and what things are possible to change. Cultural hegemony has resulted in the devaluing of the cultural capital of the Hopi. It includes world view, language, ways of knowing, and what is possible to change. While acceptance of natural capital has been important for Hopi survival, there has been consistent concern and debate among the Hopi as to whether the negative impacts of cultural intrusion should be accepted, resisted, or adapted (Thompson and Joseph, 1947; Dozier, 1951). Most interventions on Indian reservations link improvement in health status with cultural capital (see, for example, Penn-Kennedy and Barber, 1995; Cantrell, 2001).

Our respondents stressed the intersection between traditional Hopi foods and cultural capital.

- It allows for the transfer of traditional customs.
- It is part of being Hopi
- It is part of Hopi culture
- It has a spiritual meaning
- It brings harmony
- It is utilized in ceremonies and initiations
- It identifies Hopi womanhood
- It is given when a woman participates in ceremonies, weddings, etc.
- One receives traditional seed from the katsinas
- One participates in ceremonies to get a good harvest
- Traditional food uses the ancestral language

Language retention was extremely important to our focus group participants. Not all of them felt fluent in Hopi, and food gave them a way to be connected to it.

There are a variety of ways that *bahana* foods are introduced to the Hopi, which have cultural and human capital implications. The first was commodity foods.

Commodity food use at the Hopi Reservation provided an outside source of foods to the Hopi community. From comments made by participants of the Focus Group sessions these foods in of themselves did not affect the use of traditional Hopi foods to any great extent. Much of the commodity material that came onto the reservation was often as a trade item from the Navajo communities surrounding the Hopi Reservation. One of the Bacavi participants stated, *"I didn't know what canned food was. The only thing I remember is the butter and cheese. My grandfather used to work on the Navajo Rez and she would bring it home. I never did get commodity food unless someone gives it to me."* A participant from Shungopovi commented, *"We use to get commodity foods like powdered milk, cheese, canned meats. My Navaho grandma use to give us her commodity foods. After dances when the dance is over and all this bread is given out; we use to go to Pinion to trade commodity foods for our bread and piki. I remember using the canned chicken to make tamales it's easy to make."*

The availability of these foods used by people, and along with the easier availability of commercially available foods, did have an effect on the use of Hopi foods. Part of this is the increased participation of women in a wage economy and having less time to prepare traditional meals. Participants were asked how the availability of non-Hopi foods affects their use of traditional foods. A respondent from Bacavi Village said, *"I grew up on commodity food. Yes, it does make it difficult because it is readily available."* Another person from Shungopovi echoes that comment, *"We use to get commodity foods, powdered eggs, dry milk cheese, roast beef, sugar juices. There wasn't anything really healthy like greens. There were mainly ready made foods. Store makes it not easy to cook traditional foods mainly the grease I guess. We mainly eat bahana foods. Only on special occasions we eat traditional foods. Like noqkwivi we could make any time but we don't. I don't think the store makes it easy."* Other comments also expressed the concern that easy access to non-Hopi foods make it less likely that the meal being prepared will be a traditional Hopi meal.

Hopi children are far more exposed to non-Hopi foods such as hamburgers, cheese puffs, dill pickles with kool-aid, pizza and a host of other foods. Their tastes make it difficult for some families to have the Hopi foods because the kids prefer the non-Hopi. At Shungopovi Village, one individual said, *"I cook the sheep's head – teaching kids to eat these foods, intestines. Lots of meat – stew – kids wanted other foods – When I was a child we had rabbit meat. Changed a lot, I go out to eat a lot, but I have to watch what I order."* Another commented, *"Kids are always in a rush, we eat a lot of spam but it has a lot of fat. Buy mainly frozen vegetables. I don't by corn and spinach, in cans. Like liver & fish. Kids like. Eating habits have changed a lot because there always rushing. Weekends able to cook more oatmeal – Changed we had a big family. Eat all together."*

The respondents attributed the cultural change in food consumption to the pressures of modern life – speed more important than the food itself or the cultural and social capital traditional Hopi food preparation and consumption entails.

Human Capital

Human capital represents the skills and abilities of each individual. Health is the base upon which other individual capacities, such as education, leadership, and self-esteem are based. The women in our interviews and focus groups stress the special ways that Hopi food contributed to their human capital. They described it as

- Healthy
- Delicious
- Bringing energy and survival

- Helping in the transition of puberty
- Allowing us to teach our sons and daughters
- Increasing our knowledge of where we live as we gather wild foods

The ability to cook Hopi food is a valued aspect of Hopi women's human capital. Learning to make piki begins at a young age. It is messy and dangerous, and requires supervision and patience on the part of the adult involved, usually a grandmother

The piki stone was right in there in the back room of the kitchen. She [my grandmother] would leave me a little of her piki batter and tell me to cool down her stone after she finish making piki. I was just about 8 or 9 years old. I remember making these little pikis about six inches long. The stone was still hot, so that I would be splattering the batter every where. Every time she made piki she would leave me some batter to cool down the stone. I was so proud I use to take it to my other grandma who washed my hair off.

Our respondents reiterated that Hopi food was healthy food – and contrast that to the current foods eaten, particularly chips, fried foods, and pop, which they observed turning from a seldom consumed treat to a ubiquitous item of constant consumption.

Many of our respondents went to boarding school or were with the Latter Day Saints placement program with Mormon families. In such situations, they learned to eat fast food and pizza, which they recognize as not as healthy as Hopi food. For these women, it took them out of the community during crucial years where they would otherwise be learning to cook more complex Hopi foods. One woman compared herself to her sisters, who did not go to boarding school or family placement. "Even now they make corn stew; I don't even know how to do that."

Others are proud of teaching their granddaughters – and grandsons – how to cook. "My oldest granddaughter learned how to cook Hopi food. She always wants blue marbles and piki. My daughters were about 7 years old when they learned how to make piki, so when they went through the grinding ceremonies they already knew how make piki."

Social Capital

Social capital is key for women's access to the ingredients for tradition food. Social capital involves mutual trust and collective reciprocity, generally built on the matrilineal clan. Social capital and cultural capital merged as women's participation in preparing food for a variety of ceremonies meant that they also received traditional food, although there is a growing tendency, which concerned some of the women greatly, of using purchased food in ceremonial gifts.

Traditional foods connect generations through both production and consumption and gives an opportunity to demonstrate reciprocity.

- Families share what they produce
- It permits women to repay others
- It connects the community
- Women can participate in planting and harvesting with their clan
- Women receive traditional food from their relatives
- Women learn to cook traditional food from their grandparents

Women take food to the kivas for the men's ceremonies and meetings. Many of our respondents were concerned that more and more "bahana" food was appearing, rather than the simple Hopi fare that their husbands and uncles requested.

Political Capital

Political capital is the ability to influence the rules and regulations that determine access to resources and their presence in organizations that manage resources. The women were particularly concerned about the quality of food they received in the food boxes distributed through the villages. They felt they had no control and were clearly the “beneficiaries” of outdated and unwanted food, as has been shown in studies of other food pantries (Tarasuk and Eaton, 2005). While the interviews and focus groups yielded a number of possible collective actions that could increase single mother’s access to traditional food, the women in the project did not suggest ways to implement these actions. Suggestions included

- Women should have their own communal plots to grow traditional food.
- Schools should serve traditional food in the cafeteria
- The community should provide a tractor to rent.
- The villages should form coalitions of men to help single mothers produce traditional food

Financial Capital

Financial capital on the Hopi reservation means operating in the cash economy, something that outsiders have been pushing for over a century (Adams, 1979). For single mothers, traditional food gave them a chance to separate themselves from the cash economy by being more self-reliant and gave them another art with which to earn money on the reservation by making and selling piki bread. These ways of generating and saving financial capital depended heavily on the networks provided by cultural and social capital.

The financial capital benefits the respondents mentioned included

- Women are independent of purchased food
- Women help in the harvest and receive seed
- Women earn money by making traditional food – piki, etc.

While one would never purchase the products of Hopi agriculture, selling prepared traditional Hopi food – generally around a variety of dances and festivals – is culturally appropriate.

Built Capital

Build capital is the physical infrastructure that makes production of the other capitals possible. While the women valued their piki stones, piki houses, and gardens, they also noted the down side of built capital – decreased activity. They told stories of walking up the mesa when the school bus let them off on the bottom, of walking to the fields with their grandmothers and grandfathers, and the joy that walking together inspired in them. They reported that they did not like it at the time – but that they were very fit as a result. They appreciated the tractor in helping prepare the land, but also mentioned the traditional water harvesting and windbreaks that they helped put into the fields as they participated in the planting and the harvesting.

Conclusions

The participants in our research saw the multiple values of traditional Hopi foods, and, as single mothers, had found ways to access them through mobilizing natural, cultural, and social capital. Yet they were pessimistic about its future – and thus the future of the health of the Hopi people. Based on our work in other communities, the next steps, if the women choose to take them, is to utilize the capitals where they are the strongest to build political capital through advocacy coalitions to increase awareness of Hopi foods, continue education around the benefits of Hopi food, expand the illustrated cookbook that shows how to prepare Hopi foods, and support classes where young people learn to cook the foods with their elders. From the stories the women told of their own involvement with Hopi foods, embedded knowledge – that which comes from physically

gathering and preparing food in a social situation – is the best way to gain the human capital and cultural capital benefits of the traditional Hopi diet.

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