



# Living Stone Bridges: Epistemological Divides in Heritage Environmental Communication

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This chapter presents the cultural perceptions of five Native American tribes and pueblos who communicated their environmental understandings of natural stone bridges during an ethnographic study funded by the National Park Service (NPS). Natural Bridges National Monument (the park) is located in southern Utah, USA. The participating tribes and pueblos stipulate that this is an ancient World-balancing location dominated by Bears Ears Buttes on the flank of the Abajo Massif, the two rivers who carved the bridges, and the massive living stone bridges themselves (Fig. 1). World-balancing ceremony areas have special significance to contemporary Native Americans. Spiritual leaders traveled long distances to such areas when extremes in weather, ecological health, and human social

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**Fig. 1** Owachomo Bridge, with a 180 ft. (65 m) span, 106 ft. (32 m) tall, 8 ft. (3 m) thick, and 27 ft. (8 m) wide at the top, and alive since Creation. (Photo: Richard Stoffle)

relationships called for the world to be set back into balance. This area and its associated plants, animals, water, minerals, rock peckings, rock paintings, artifacts, old kivas, and special topographic features define how this heritage cultural landscape was Created to maintain the Earth. As such, these resources and the place where they occur are a unique heritage foundation for contemporary Indian people. The participating tribes and pueblos are willing to engage with the NPS to recommend culturally appropriate interpretations and ways to protect this heritage park because of the cultural centrality of this area.

### HERITAGE ENVIRONMENTAL COMMUNICATION

The study contributes to a 140-year-old anthropological tradition that involves talking with people about themselves and their aboriginal environment adaptations and subsequently conveying these understandings to professional and general audiences. Cross-cultural communication of deep

culture (Lynch, 1996) that derives from *thick description* (Geertz, 1973) is difficult, and as such resembles the *Deep Ecology* philosophy established by Norwegian philosopher Arne Ness (Ness, 1973) and Sessions (1987). Like the current Deep Ecology Movement (Drengson & Inoue, 1995), Native Americans tend to view the Earth as a single whole whose parts are integrated, and which has human-like rights. Critics of the Deep Ecology Movement and indigenous cultural views, such as those presented here, have argued that the observations are not scientific findings but instead are religious interpretations, and thus are not useful knowledge (Keller, 2009). Despite critics of these types of philosophies, today there are graduate programs, such as one at the University of Oslo in the Center for Development and the Environment, that build upon the deep ecology movement (University of Oslo, 2020). Similarly, there are dozens of graduate programs, such as American Indian Studies at the University of Arizona (UofA), that build on Indigenous traditional cultural knowledge. Environmental communication across the epistemological divide created by these views is a foundation of this chapter.

Our analysis further draws on that of Clifford Geertz, who provided the social sciences with an understanding and appreciation of thick description (1973). Geertz applied thick description to anthropological studies, particularly to his own *interpretive anthropology* perspective. He urged anthropologists to consider the limitations placed upon them by their own cultural cosmologies when attempting to offer insight into the cultures of other people. He produced theory based on the notion that culture is essentially *semiotic*, that is, composed of signs and symbols, and it requires more than just words to convey the intended and imbedded meanings and deep understandings (Geertz, 1973). Thick description is required to interpret cultures.

Ecological communication is a foundation of cultural anthropology. For example, after 1881 Franz Boaz embraced *anthropogeography* as an holistic field of study; a perspective that he applied in North Africa, western Asia, and Baffin Island. He continued to use this analytical frame as a supervisor of the Jesup North Pacific Expedition to understand the peoples of Siberia and Canada for the American Museum of Natural History from 1897 to 1903 (Lowie, 1937, pp. 128–136).

Bronislaw Malinowski used systematic interviews and participant observation beginning in 1914 to understand the traditional people of the Trobriand Islands. His work was holistic in the sense that any aspect of life was to be understood itself, as well as its relationship to other aspects of

the environment where people lived. He maintained that anthropologists must have the goal of grasping the *native point of view*, understanding their relationship to life, and realizing their vision of the world (Malinowski, 1922). He observed that fishing in less dangerous lagoons required fewer religious restrictions than was required for fishing in the dangerous open oceans, which was an early observation of cultural adaptations to environmental differences (Malinowski et al., 1935). He would grapple with the applications of ethnographic findings to understanding and explaining how cultures change (Malinowski & Kayberry, 1946). A century ago, Malinowski's research documented his basic commitment to understanding peoples' relationships with their environments and effectively communicating these to the profession and public.

Ethnography is a holistic description of a society and so it has always had an environmental component. Lowie (1937) defined ethnography as the science that studies "the sum total of what an individual acquires from his society." It depicts "the whole of cultural reality," like a natural science.

George Murdock, from the 1920s until the 1940s, suggested that ethnographers ask a set of similar questions so their studies could be compared. His arguments for systematic ethnographic field work were presented in his *Outline of Cultural Materials* and later a more specific guide called the *Survey of Cultural Elements* (1920–1940). The latter contained over 4400 ethnographic questions; including an entire section focused on the environment (Murdock et al., 1982). Murdock helped established the Human Relations Area File archive at Yale University, where all ethnographic reports were to be archived, divided by topics to permit easy comparisons of cultural patterns across many cultures. He began the journal *Ethnology* in 1962 for publishing comparative findings which were seen as the building blocks of anthropology as a science. There have always been human ecology and cross-cultural communication components in cultural anthropology.

The findings of this study are situated in the conceptual notion of *heritage environmental communication*, which is understood as a type of environmental communication that often occurs during contemporary cross-cultural communications when traditional people or scholars explain ancient relationships with the environment as these were established over hundreds or even thousands of years (Tilley, 2010; Yearly, 2006). A New Zealand study which assessed the role of cross-cultural communication in collaborative partnerships with the Maori people found that it is essential

to recognize the basic premises of Maori cultural guardianship and traditional knowledge (Lyver, 2005).

Interpreting past environmental knowledge and use patterns is a different challenge for environmental communication. Tilley (2004), for example, explains how and why thousands of years ago Europeans interacted with massive stones called *menhirs*. Cummins, Farmer, and Russell (2013) bring forward in time cultural understandings across hundreds of years in Barbados, West Indies. Antoinette (2012) reaches back in time to *speak for the enslaved* and their relationships with plantation environments along the Atlantic coast of the USA.

Native Americans in this chapter recount songs, stories, and natural relationships of their ancestors based on contemporary oral history and simply listening to voices recorded in stones. Humans develop social constructions of nature which imbue it with cultural meanings, establish appropriate patterns of interactions, and argue for preservation goals. These social constructions are the foundation for selected aspects of nature becoming key components in the heritage of a people.

In this chapter, environmental communication about natural heritage places and resources is considered different from communication about anthropogenic places where either there are special archeological residues or the place itself has been created as an artifact. Debates over the meanings of places or connections to them by contemporary peoples often can be resolved by using artifacts as evidence. Heritage communication about natural resources is different, especially where there are no associated artifacts and thus it is not possible to prove why they are culturally significant to people. Instead, traditional cultural logic and oral history must be used to establish what Tilley (1994) calls the *phenomenology of landscapes*. This is important because questions of association and meaning of non-artifactual natural places and resources are either believed or not. These officially are called Traditional Cultural Properties in the USA.

Others have documented the heritage value of natural resources that are not associated with artifacts. These include flying fish in Barbados, West Indies (Cumberbatch, 2013); sacred trees, mountains, and water sources in Nigeria (Borokini, 2016); water resources in Bahrain (Rudolff & al Zekri, 2014); falcons in Mongolia (Soma, 2012); and Paektu, a volcanic mountain on the China–North Korea border, which is the spiritual home for Korean people (Winstanley-Chesters & Ten, 2016). See also Yoko Kugo’s analysis of indigenous places, their meanings, and names in Alaska (chapter “Community Voices, Practices, and Memories in

Environmental Communication: Iliamna Lake Yup'ik Place Names, Alaska" of this book), where she discusses why it is important in heritage environmental communication to use native names and landscape understandings.

For this chapter, we consider three factors that make heritage environmental communication difficult (Stoffle et al., 2004). First, some problems occur because actors differ in terms of their knowledge of the issue. Resolution in these cases can occur through education, usually the scientists educating the lay persons. Second, other problems occur when people accurately perceive and agree on what is out there and value similar natural features but rank some above others and thus have different outcome goals. Here the *Nature Services* debate is instructive (Aisher & Damodaran, 2016; Holzman, 2012; Peterson, 2012). All agree that the components of nature have various positive benefits for other natural features as well as for humans. One perspective, however, prioritizes Human Services over Nature Services. Biologists tend to take the reverse position. A third type of problem occurs because the actors have different culturally based beliefs regarding what resources are involved; that is, what even exists in nature—how it is formed, whether or not it is sentient, and how it contributes to human heritage (Goldman, 1999; Jackson, 1981). When these cross-cultural social constructions of natural reality are fundamentally different, we can have an epistemologically derived problem (Stoffle et al., 1990).

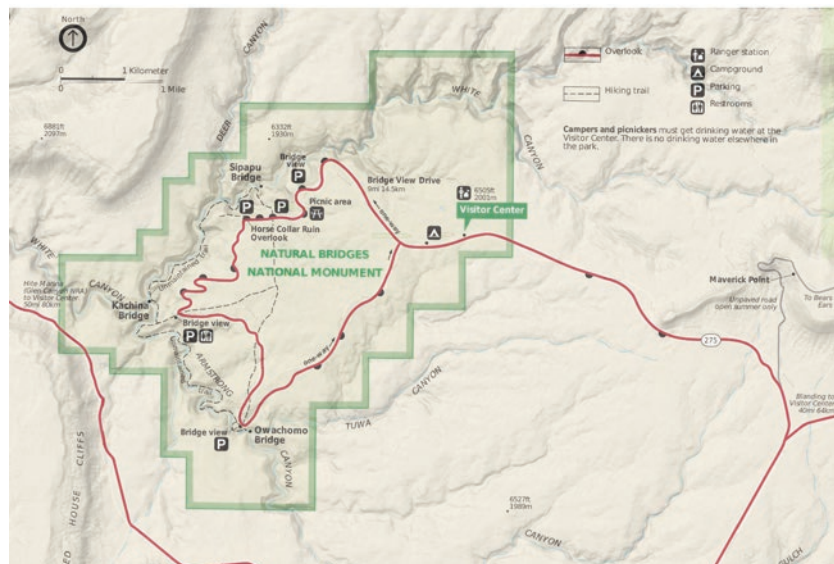
There is a fourth factor influencing heritage environmental communication, which is merely mentioned here because it is beyond the scope of this chapter. Joosse and her fellow scholars (2020, p. 6) call this *Discursive Colonization*, that is, the reproduction of the interests of the powerful through certain narrowly defined forms of knowledge and scholarship. Sometimes heritage communication does not get heard because it is politically suppressed. A postcolonial world emerged after the 1960s and expanded agency for traditional peoples in the early twenty-first century (Antoinette, 2012; Cummins et al., 2013). New voices have emerged to decolonize traditional lands (Smith, 2012) and bring what Aja Martinez (2020) terms the *Counterstory*.

This chapter is focused on how the notion that *the Earth is alive* can become a fundamental barrier to heritage environmental communication. This is an epistemological foundation of Native American beliefs and culture, or what Rappaport (1999, pp. 263–71, 446) calls an *ultimate sacred postulate* and what Goldman (1999) calls a philosophical *primitive*. The concept of a living universe is essential for understanding native culture

(Stoffle et al., 2016; Stoffle & Zedeño, 2002, p. 174). The universe is alive in the same way that humans are alive and fully sentient. It has physically discrete components that we call *elements*, and an energy source that brings them alive that is called *Puha* in the Numic language, something that can be translated as “Creation energy” or “power” (Stoffle & Zedeño, 2002). Elements like mountains, rivers, fauna, flora, wind, and minerals have most of the same characteristics as humans, including the ability to communicate, to help other elements, the power to accomplish their own goals or *agency*, and even the capacity to lie. The stone bridges in the park are understood by Native American people as *living beings* through this epistemological perspective.

### THE CASE STUDY

Native Americans have stipulated that there are *living stone bridges* in Natural Bridges National Monument, Utah, USA (Fig. 2), and in doing so they thus have framed a heritage environmental communication



**Fig. 2** Map of Natural Bridges National Monument. (This public image used with permission of the National Park Service)



challenge based on epistemological differences between themselves, park managers, and Western scientists. The Congress of the United States in 1908 identified three massive stone bridges as charismatic features of the natural landscape, and they thus qualified as a national heritage place worthy of federal protection by the NPS. This decision was based on the premise that these stone bridges are natural products, having been made by rivers and weather, and should be protected in a *nature park*. The stone bridges are managed with the advice of geologists and interpreted by the park managers as spectacular natural features.

In 2018–2020 the NPS funded an Ethnographic Overview and Assessment (EOA) involving representatives from a number of tribes and pueblos in order to officially have Native American representatives share their heritage cultural perceptions about park plants, animals, water, archeology, and the three stone bridges. A total of 292 ethnographic knowledge sharing events documented that the placement of the stone bridges on two rivers and at the foot of a mountain was a plan of Creation, and that each bridge is alive and sentient with its own agency and personality. These heritage cultural stipulations are in keeping with a common Native American epistemological premise that the world is alive and reflects (i.e., can talk about) its purposes as these were defined by Creation (Stoffle et al., 2016). The bridges further serve as portals for use by humans and other life forms when they travel back and forth to alternative dimensions (Stoffle et al., 2020a; Varner, 2012).

Here we discuss the resulting *epistemological divide* that now frames all heritage environmental communications about these stone bridges between the native people and Western-trained scientists and park managers (Stoffle et al., 2017). Effective heritage environmental communication in this and other national parks can result in culturally appropriate park interpretations and lead to sustainable land-use decisions. These positive results, however, can be hampered when the participants act with different epistemologies about what is really in the natural environment and what is happening to it because of proposed projects, management decisions, and use by tourists (Stoffle et al., 2016).

## STUDY LOCATION

The National Park Service (NPS) funded the park's first Native American EOA study in 2018–2021 (Stoffle et al., 2020b). U.S. President Roosevelt in 1908 defined the park's meaning when he proclaimed:



WHEREAS, a number of natural bridges situated in southeastern Utah, having heights more lofty and spans far greater than any heretofore known to exist, are of the greatest scientific interest, and it appears that the public interests would be promoted by reserving these extraordinary examples of stream erosion with as much land as may be necessary for the proper protection thereof.

This establishment legislation by Congress that identified the park as a geological wonder continues today. This is the Western science-based foundation theme presented in the park's interpretative video for tourists, adult and youth reading materials sold in the Visitor Center, and interpretive displays located along park walking trails and overlooks. According to this theme the park is a place of unique and naturally formed massive stone bridges carved by running water.

Southern Utah topography is dominated by high uplifted volcanic massifs, broken sedimentary plateaus, and deeply gouged canyons. The Colorado River flows from the Rocky Mountains in the east to combine with the Green River from the north at Canyonlands National Park before they together flow through the Grand Canyon to the Sea of Cortez in Mexico. The park is located around two much smaller rivers, the White River and the Armstrong River, whose headwaters are generally located in the Abajo Massif, a largely snow-capped Sky Island standing high above the surrounding region. Bears Ears Buttes are a specific headwater for these rivers (Fig. 3).

The White and Armstrong Rivers have carved out a broken sedimentary plateau, making deep canyons before flowing into the Colorado River about 30 miles to the west of the park. Over eons these meandering rivers cut deeply into the soft sandstones. The rivers formed oxbow meanders which were eventually undercut, thus forming the three stone bridges: the Owachomo, the Kachina, and the Sipapu. These are the spectacular centers of the park (Fig. 4).

## STUDY METHODS

The NPS funded the EOA to understand the cultural meanings and importance of the natural and archeological resources within the park that are associated with Native Americans. The EOA was officially designed to be participatory (Joosse et al., 2020, pp. 6–8) so the tribal and pueblo representatives would share their opinions as to where the study visits



**Fig. 3** Bears Ears Buttes from Park Mesa. (Photo: Richard Stoffle)

should occur and what were the most salient topics to be discussed. The study was also funded to meet certain park management and interpretation goals including (1) learning about tribal perceptions of the stone bridges, (2) knowing oral histories of the ancient farming homesteads in the center of the park, (3) understanding the intended purposes of the peckings and paintings near the bridges, and (4) hearing about the contemporary uses of the abundant and rare plants located throughout the park. Together these cultural perspectives potentially serve to inform park interpretations in the visitor center museum and along hiking trails and provide new ideas for park management, especially how tourists visitors should interact and treat heritage places like the stone bridges (Stoffle et al., 2020c).

This analysis is based on 292 ethnographic interviews with official representatives of four tribes and pueblos. Representatives were sent to participate in the study from (1) the Pueblo of Zuni, (2) the San Juan Southern Paiute Tribe, (3) Acoma Pueblo, and (4) the Ute Mountain Ute



**Fig. 4** Kachina Bridge at confluence of White and Armstrong Rivers with rock panel and structures behind, group Kiva in bottom, and residential mesa on horizon. (Photo: Richard Stoffle)

Tribe, especially the White Mesa people. Data sharing occurred at six formal locations and wherever tribal or pueblo representatives wanted to stop and talk. These locations reflect the kinds of resources in the park, including overlooks into the canyon, a previously excavated traditional farm house on the mesa, a large painting of a Red Bear on a rock wall, abundant plant communities, spectacular landscape views including ones of the nearby Bears Ears Buttes, and the Visitor Center with a park movie and museum interpretations. Most interviews were taped with the permission of the representative to ensure accuracy. All tribal governments and representatives understood that no confidential information was being sought and that findings, after being reviewed by the tribe, would become public through new interpretative displays, the training of park rangers, and perhaps in an updated visitor movie.

## STUDY FINDINGS

Cultural perspectives shared by representatives describe the stone bridges as being situated in a matrix of nearby and functionally interdependent places. For example, the Red Bear pictograph panel, which is located on a sheltered face of a massive sandstone cliff, is high above the confluence of two rivers (Fig. 5). It has a panoramic viewscape that includes Bears Ears Buttes, which are a source of river water and a spiritual place on the Abajo Massif. The panel close-up (Fig. 6) clearly identifies small red dots that occur above the image. These dots also occur above the other three bear (black, yellow, and white bears located in the region outside the park) that are pecked and painted on similar panels suggesting their connection with star and planet alignments ceremonies.

Each related cultural place, the resources it contains, and the views between places add to the meaning of the stone bridges and an understanding of why the area has always been special to Native Americans. It is important to recognize that the area has been occupied for more than 13,000 years, as indicated by the nearby discovery of Clovis Period spear points (Pitblado, 1998). This is the time-depth frame within which most



**Fig. 5** Red Bear painting panel high above confluence of rivers. With viewscape of Bears Ears Buttes. (Photo: Richard Stoffle)



**Fig. 6** Close-Up of Red Bear painting panel. (This image used with permission of Joseph Kayne Photography ([www.josephkaynephoto.com](http://www.josephkaynephoto.com)). © Joseph Kayne)

oral history events are referenced, but there is a time before time that is also relevant. Both times can be accessed by properly prepared and trained spiritual people through a stone bridge portal.

The cultural perspectives of participating tribes and pueblos represent a range of ideas about the park; however, there was general agreement regarding many issues. One of these is the interpretation of the bridges as being alive. The bridges are surrounded by other living elements like Bears Ears Buttes, the rivers and springs, minerals, medicine plants, and spiritual animals, all of whom were made and given purpose at Creation. Native Americans who came to this area in the past and their descendants today recognize that the matrix of significant elements was placed here at Creation to attract humans to the area. The energy of all resources stimulates their interaction with each other and brings humans to conduct ceremony. The resources participate in various kinds of ceremonies, but clearly this is a place designed for the conduct of world-balancing ceremonies.



The following are EOA study statements from participating tribal and pueblo representatives. These have been selected for this analysis but have not been edited.

### *Zuni*

- Areas such as Owachomo Bridge are a part of the Zuni cultural landscape, as the area itself is home to many shrines and offerings that further cement the link between the community and the monument.
- Kachina Bridge is a highly ceremonial place. This is indicated by the confluence of Armstrong River and White River, the great kiva depression nearby, and the painted walls of the small structure by the bridge. Zuni people still place certain images on walls of highly ceremonial structures today.

### *Southern Paiute*

- The natural bridges represent one of the origin places of the Southern Paiute people, which some believe took place at Rainbow Bridge, located southeast in the Grand Canyon. This was the location where the different people of today were all one people with one language, before the split off and the different languages of the world were created. Songs, prayers, and offerings which are Southern Paiute practices associated with natural bridges were often performed by religious leaders.
- The ethereal characteristics of these bridges are so powerful that the bridges occupy an immense presence within the community. As a sign of respect and awe certain tribal members will not pass under bridges in response to the power they hold. So are the social norms of the San Juan Paiutes. Going under or through them is against our teachings, unless you have a reason to be with the bridges. These bridges have a powerful role in the beliefs of the San Juan Paiutes which illustrates the years of interaction the community has had with these geological features.
- Rock peckings and paintings in the monument are not art. They demonstrate the narratives of the past inhabitants of this region. The Southern Paiute people made these markings when all of the tribes were one people, and they have continued this practice throughout time.

### *Acoma Pueblo*

- Natural Bridges is one of the four stops made after the Acoma people's emergence from *Shipap* on their migration to present-day Acoma.
- The Acoma people's connection to these traditional lands is paramount for the overall health of the local and world ecosystems. Acoma people maintain that Mother Earth provides these resources through a reciprocal relationship with the Acoma people. Thus, anything that keeps us away from this area poses risks to both nature and Acoma identity.
- Sipapu Bridge, named after the Puebloan place of emergence—known as *Shipap* to the Acoma people, is a physical representation of their origin spot from the underworld, where the first people emerged into the current world. Acoma representatives agreed that the name is appropriate in this context.
- As large, geological features in this desert landscape, the natural bridges likely contributed to calendar-type observations, which are essential to Acoma lifeways, as they dictate farming and ceremonial practices. These activities would be performed by religious leaders.

### *Ute Mountain Ute*

- Bridges are powerful altars. Ute people pray to natural bridges to bring strength to the area and use them in reciprocal transactions to bring blessings to themselves.
- Creation stories, such as the one of Bear, illustrate the Ute people's direct connection to and creation within this cultural landscape. We identify with archeology, including the Red Bear panel, and viewscapes, such as the Bears Ears Buttes (see Fig. 5). These features demonstrate the long-standing connection the Ute people had with Natural Bridges, as well as the significance of this sacred cultural landscape.

## ANALYSIS

Native American cultural perspectives are filled with stipulations that contrast with those held by Western science, especially geology and archeology, and thus are at odds with current NPS interpretations of this park, its history, and what is out there. The most obvious of these conflicting



stipulations is that the park and its resources are alive and have been so since Creation. From the Indian perspective these park resources are alive without the presence of humans, and so are not social constructions. The park resources did not come alive because Indian people developed a social construction of the living universe, but instead the universe has been alive since Creation and Native Americans were taught this by the elements themselves and the Creator.

This premise contributes to an epistemological divide when it comes to learning more about park resources. Scientists take samples and study them in a laboratory to determine age and origin of stones, soils, and artifacts. Native Americans, on the other hand, sit for long periods near a resource and it tells them who it is and what it desires from park management and interpretation. The resource asks why these people are here and expresses concern or pleasure regarding their behaviors. It is the home of the resource and it thus has a right to direct visitor behavior.

The notion of culturally appropriate communication with park resources is very much contested. Native Americans during this study were attracted to a resources or place like below a stone bridge. Here they sat quietly for long periods to listen to the bridge recount its memories about past visits by Indian people and what they sang and said to it in ceremonies. The bridge is like an elder, who once she/he begins to talk is not interrupted. The bridge stories may take a long time for it to tell and the listener should be respectful. Elders expect respectful visitors to introduce themselves, explain why they are present, and share ideas. The act of heritage learning from elders involves cultural protocols and requires time and patience.

In one instance an elder lady from the Ute Mountain Ute tribe had just completed a study discussion while sitting below Owachomo Bridge. A German couple approached and asked the elder a question. She wondered if they would stay for the answer and they said yes. So the elder took more than 45 minutes to explain her people's relationship with Owachomo Bridge. After returning to Germany the couple sent a response regarding the exchange under the bridge describing it as the most important event during their months of visiting U.S. national parks (Stoffle et al., 2020b). This underlies the ongoing issue of what it can mean to learn about Native American culture in national parks and perhaps how it may be best for this kind of heritage communication to occur.

Culturally more accurate interpretations of park resources and history are key for achieving the dual purpose of educating the public and gaining

their support for preserving parks. The EOA had a specific goal of documenting Native American assessments of what is currently said about cultural resources in the park so these potentially can be incorporated into new park films, brochures, ranger training, and interpretative displays.

Tribal and pueblo representatives expressed a desire to bring their voices into the park and so they shared hundreds of ideas for making park interpretations speak to Indian issues. This occurred in 37 taped idea-sharing sessions in the Visitor Center and elsewhere during hikes. One entire chapter of the EOA report (Stoffle et al., 2020b) is devoted to these recommendations; a few are presented here.

Native Americans recommended the following interpretation changes: (1) we never left this area we just live somewhere else today; (2) the area was sacred to many Native American cultural groups and the park should say this; (3) the bridges continue to be culturally important to us so we send them prayers and they send wisdom back to us; (4) the stone bridges are alive and can talk as can the plants, animals, and places where we lived in the ancient past so these should be treated with respect and guided by protocols jointly produced by NPS and Native Americans; (5) the park is not an accident of geology but is instead part of a larger plan to have a place for individual healing and world-balancing ceremonies.

These heritage interpretations are difficult for the park to discuss in displays, films, and ranger tours. The first three involve cultural affiliation, perceived continued sacredness, and the movement of prayers to and from the park. Spirituality is a difficult issue for the park to address because of the congressionally mandated legal separation of government and religion institutions in the USA and because there are few agency guidelines for dealing with such issues. The latter two conversations are even more difficult for the park because they argue against the Western science interpretation of the stone bridges as having been produced by river erosion. They also are troubling for the park because if the stone bridges are alive and sentient, they potentially become *someone* to engage with during land management decisions. This would involve bringing Native Americans to talk with the bridges and potentially incorporating the recommendations from the bridges into management (Stoffle et al., 2016).

Native Americans recommended management changes regarding the bridges, including (1) other people such as tourists can be in the park, but they should be told by the NPS that this is a special Creation place, and (2) before visitors walk under a stone bridge, they should stop, introduce themselves, and ask for permission to visit. The park will have major

concerns about implementing these recommendations inasmuch as they involve both the recognition of a cultural view of Creation and spirituality and establishing public guidelines for interacting with stone bridges.

## DISCUSSION

The notion of an *epistemological divide* has been used here to explain why oppositional heritage environmental communication is fundamentally different from other kinds of communication problems. These are pervasive in Native American interactions with federal land managers, and thus constitute what is called *macro-evidence* by Gingrich (2009, p. 179), inasmuch as similar patterns have been documented in so many instances among so many kinds of native peoples.

After arguing for much of his career as a Native American spokesperson and lawyer, Vine Deloria (1997) wrote a polemic called *Red Earth, White Lies*, in which he describes a number of “extreme” cases where Indian people maintain some truth about the world that is disputed by Western science. In the book, Deloria stipulates that everything Indian people say about the Earth is *veritas* (the truth), which is what a lawyer does when beginning an argument.

Resolving these types of problems tends not to be a part of either the training or background of Native Americans, NPS personnel, or Western scientists. While anthropologists and other social scientists work on the complexity of cross-cultural communication (Gudykunst, 2003; Hall, 1959; Maffie, 2000, 2020), there are few research-based solutions for improving heritage environmental communications. Carroll (2014) suggests that Tribal Parks made and managed by native people offer alternative perspectives to conservation and communication by accounting for their own land-based epistemologies and practices. When the tribes control the interpretation and management of a park, they can directly explain and use their culture.

The Stone Bridges case illustrates that fundamental problems can derive from failures to communicate about and listen to culturally based differences in environmental perception. The case also raises the question as to whether or not more talking between cultural groups can bring understandings that are sufficient to (re)solve such problems. Geertz (1973, pp. 3–33) argues that the capacity to produce thick descriptions is needed for interpretation and communication of culture. Brody (1998, pp. 6–7) demonstrated that even when the anthropologist and the native expert

speak the same language it is necessary to interpret colloquial speech. In their *Talking with Nature* analysis, Stoffle, Arnold, and Bullettts (2016, p. 94) concluded that Native Americans prefer that their knowledge be given equal weight as veristic reality along with (or parallel to) contrastive ones from Western science, but for the moment most Native Americans simply want to exercise significant control over the preservation and use of their traditional heritage natural resources and would like their stories to be accurately interpreted.

Lessons from other parks suggest a way forward when an impasse is reached on important communication issues. Traditionally the NPS relied on science as a foundation and test of the truth about park resources and culture history. Today, however, most national parks have shifted from finding one truth to presenting multiple perspectives on a question even if these disagree, which is called a *multi-vocalic perspective*. This communication adaptation is political in that it is a management decision to be inclusive and permit the public to recognize that there often is no single common resource interpretation or best management practice.

Each national park answers visitor questions about past use by contemporary Indian peoples, but typically contrastive views are provided by archeologists, historians, and certainly the Native American groups themselves. An EOA conducted at Sunset Crater National Monument near Flagstaff, Arizona identified a distinctive disagreement regarding a volcanic eruption. Professional archeologists and geologists describe the Indian response to the AD 1066 eruption as fearful and them as running away. A painting of running people with hands in air in fear was for decades prominently displayed in the visitor center. Indian people in the EOA study had the reverse interpretation. Volcanic craters are common in the southwestern USA, and are often called *earth navels* by pueblo people and responded to by most Indian people as places where the Earth is reborn (see Van Vlack, chapter “[Dancing with Lava: Indigenous Interactions with an Active Volcano in Arizona](#)” of this book). The Sunset Volcano was an active eruption that lasted for about 100 years. It became, according to EOA native representatives, a central place for spiritual leaders, who constructed areas for living, viewing, observing, and talking with the volcano in a new village built nearby at what is now Wapakti National Monument.

Sunset Crater National Monument resolved their communication disagreements by retaining the original displays with the Western science interpretation, but adding a heritage kiosk surrounded by seats. On the kiosk is a map of contemporary Indian groups who have expressed a

connection with the park, and next to each of their names is a phone receiver connected to a taped message so the tourist can hear their view of the volcano in the native voice (Toupal & Stoffle, 2004). Such an approach is mirrored in other parks that provide multi-vocalic brochures, museum displays, and complex visitor films (Ruppert & Smythe, 2017).

The present analysis should be contextualized as both a part of an ongoing process of the NPS seeking culturally sensitive Native American interpretations of park histories and to understand complex native relationships with non-artifactual places. For example, Natural Bridges are similar to a massive single stone bridge called Rainbow Bridge, which is located about 125 miles to the southwest in a side canyon of the Colorado River (Jett, 1992). It was placed on the National Register of Historic Places (NRHP) in 1910 and became a National Monument to protect and celebrate the bridge as a natural wonder.

Although culturally associated Native Americans participated in Rainbow Bridge's "discovery" by Euroamericans, they were neither highlighted in the monument's interpretations nor involved in its management. More than a 100 years after the monument was established, the NPS hired anthropologist David Ruppert (2017) to conduct EOA interviews with five tribes and pueblos. The research produced findings similar to those of the Natural Bridges EOA. Subsequently Rainbow Bridge was placed on the NRHP as a Traditional Cultural Property and is now interpreted as both a natural wonder and a culturally central native place.

While political decisions have resolved some heritage communication disagreements, the management of national park resources is based on knowledge domains that are dominated by Western science. These university-trained subject experts advise park managers on when to do a controlled burn, how to stabilize an eroding archeology site, which beetle is killing the pine trees, what is causing declines in the rabbit population, and how to protect raptor nesting. Science specialists tend to doubt Native American recommendations about how to protect heritage natural resources. While there may be clear physical cause-and-effect interpretations of a given problem, from a Native American perspective the problem is often that the area is out of spiritual balance and the resources miss hearing ceremonial performances. Balancing resources, places, and even the world is, after all, why the Creator made the park and taught Indian people the appropriate ceremonies. Scientists also tend to doubt that Indian representatives can learn actionable environmental information by sitting with the resources and listening to their knowledge. Potential common

ground for resolving these park management challenges can derive from Western science, national parks, and Native American understandings being either combined or used side by side.

An essential step for resolving heritage environmental communication barriers is to define their source and find common ground, even if it may be to agree to disagree or not to seek a single final answer. Easy solutions are unlikely to occur in cross-cultural communication involving epistemological differences, and so systematic ethnography and other social science research is suggested. The NPS and Western scientists cannot just sit down and talk with native representatives. Words are symbols according to Geertz (1973), and so to just hear a word is not necessarily to understand its full meaning. Cultural knowledge involves specific kinds of places, food, music, group discussions, and translation from one language to another, according to Hopi elder Emory Sekaquaptewa (personal communication). As such, native cultural knowledge is not unlike that surrounding Passover (also called Pesach) for Jewish people. New place-based research is required to identify and culturally explain during cross-cultural communication. The research should produce thick descriptions of environmental issues based on interpretations provided by Native Americans. By funding this EOA study, Natural Bridges National Monument and the National Park Service have expressed a willingness to listen to native perspectives and to consider new public interpretations and policies based on accurate cross-cultural interpretations.

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