Plains Anthropologist

ISSN: 0032-0447 (Print) 2052-546X (Online) Journal homepage: https://www.tandfonline.com/loi/ypan20

The Kiowa Odyssey: Evidence of historical relationships among Pueblo, Fremont, and Northwest Plains peoples

Scott G. Ortman & Lynda D. McNeil

To cite this article: Scott G. Ortman & Lynda D. McNeil (2018) The Kiowa Odyssey: Evidence of historical relationships among Pueblo, Fremont, and Northwest Plains peoples, Plains Anthropologist, 63:246, 152-174, DOI: 10.1080/00320447.2017.1335533

To link to this article: https://doi.org/10.1080/00320447.2017.1335533

PLAINS ANTHROPOLOGIST, Vol. 63 No. 246, May, 2018, 152–174

ARTICLE

The Kiowa Odyssey: Evidence of historical relationships among Pueblo, Fremont, and Northwest Plains peoples

SCOTT G. ORTMAN
University of Colorado Boulder

LYNDA D. MCNEIL
Arizona State University

A detail of North American prehistory that has long puzzled anthropologists is how the Kiowa speech community ended up on the Southern Plains, given that Kiowa is closely related to the Tanoan Pueblo languages of the US Southwest. In this paper, we present a variety of linguistic, ethnographic, and archaeological evidence which suggest: (1) Proto-Kiowa-Tanoan was spoken in Late Archaic and Eastern Basketmaker II sites on the Colorado Plateau; (2) Kiowan diverged from Proto-Tanoan prior to the Basketmaker III period; (3) Kiowa was among the languages spoken in Eastern Fremont sites; (4) Kiowa-speaking peoples migrated from the Fremont area to the Northwest Plains around 1300 CE; and (5) Kiowa people moved from the Yellowstone area to the Southern Plains by the early nineteenth century. This hypothesis suggests that Pueblo and Fremont peoples share threads of common heritage and that contemporary Kiowa people may have affiliations with certain Fremont and Northwest Plains sites.

KEYWORDS Northwest Plains, Kiowa, rock art, Kiowa-Tanoan, Fremont, Basketmaker

Ever since Harrington (1910) proposed that the Kiowa language was related to the Tanoan languages of New Mexico, anthropologists have puzzled over the connection. How could a language that is spoken by an equestrian, bison-hunting tribe of the Southern Plains share common ancestry with so many Pueblo languages? Many different explanations have been suggested over the years. Harrington

DOI 10.1080/00320447.2017.1335533

(1939) followed Kiowa oral tradition in speculating that the Kiowa-Tanoan homeland was in the Northern Plains and that Kiowa and Tanoan diverged as both groups moved southward. Schleiser (1994) continued this line of reasoning, associating the earliest ancestors of both Kiowa and Tanoan-speaking peoples with the Pelican Lake complex of the Northern Plains. More recently, Hickerson (1996) suggested the Kiowa tribe is related to the Jumanos, a group that ranged just to the east of the Rio Grande Pueblos during the period of Spanish colonization. Kroskrity (1993) goes even further, suggesting that the Kiowa speech community resulted from a "radical adaptive shift to a plains orientation" (1993:56) by a Pueblo group in the recent past.

Unfortunately, none of these models are consistent with Kiowa oral tradition and ethnohistory, both of which suggest present-day Kiowa identity emerged relatively recently in the vicinity of Yellowstone National Park (Boyd 1981; Levy 2001; Meadows 2008; Mooney 1898; Nabokov and Loendorf 2004). In this paper, we propose a solution that connects Kiowa traditions and Kiowa-Tanoan linguistics through Fremont archaeology. In a nutshell, we hypothesize the Kiowa speech community originated in the Eastern Fremont area around 450 CE, drifted northward to the Yellowstone area after 1300 CE, and then migrated south and east to the Southern Plains during historic times.

To build this argument, we first review linguistic evidence which suggests the Kiowa-Tanoan homeland was on the Colorado Plateau and not in the Northern Rio Grande or the Northwestern Plains. Then, we analyze reconstructed vocabulary for Kiowa-Tanoan subgroups to argue that Kiowa became distinct from Tanoan as Fremont society emerged north of the Pueblo area. Third, we review Kiowa placenames and historic documents which show that present-day Kiowa tribal identity did indeed take shape in the Northwest Plains around 1700 CE. Finally, we review details of the archaeological record and rock art iconography which suggest connections between Basketmaker, Fremont, and Northwest Plains peoples. We conclude by discussing the implications of this hypothesis for the culture area concept, the relationship between oral tradition and ethnogenesis, the reversibility of farming, and the role of Plains ethnography in furthering understandings of Basketmaker and Fremont society.

The Kiowa-Tanoan language family

We first want to emphasize the reality of Kiowa-Tanoan as a distinct language family. To put it bluntly, Kiowa and the Tanoan languages must share common ancestry. Hale (1967) documented systematic sound correspondences across hundreds of sets of words in Kiowa, Northern Tiwa, Tewa and Towa, and successfully reconstructed the consonants of the proto-language from which all these languages descended. He also documented an intricate pattern of phonetic alternations (differences in pronunciation depending on the phonetic environment) in all major branches of the family. For example, he reconstructed a number of Proto-Kiowa-Tanoan forms where **b* alternates with **p*, and **d* with **t*. This alternation involved a simple variation between voiced and voiceless stops and thus is not unusual. However, after Kiowa became isolated, Proto-Tanoan **b-* changed to **m-* and

**d-* changed to **n-* before nasalized vowels, with **m-* alternating with **p-* and **n-* alternating with **t-*. This alternation is unusual, and common linguistic ancestry is the only realistic explanation for how it could have come to exist.

More recently, Sutton (2010) documented an unusual noun classification and inverse number marking system in Kiowa and Tanoan which also supports a close relationship among the languages. For each of the daughter languages, nouns are classified into one of four groups, with each class having a different basic number. In Kiowa, for example, Class I nouns are prototypically singular or dual, Class II nouns are dual or plural, Class III nouns are only dual, and Class IV nouns have no inherent number. On top of this, there are affixes that indicate the inverse of this basic number. The unmarked form of a Class I noun is singular or dual but the inverse suffix makes the noun plural; the unmarked Class II noun is dual or plural and the inverse suffix makes it singular; the unmarked Class III noun is dual and the inverse suffix makes it singular or plural; and Class IV nouns are not inflected for number. The details of this system vary among the Tanoan languages, but it is present in all of them, and it has not been identified in any other language (Sutton 2010: 83). Once again, shared descent from a common ancestral language is the only realistic explanation.

Kiowa-Tanoans, Eastern Basketmakers, and the Fremont

To conclude that Kiowa-Tanoan is a valid language family is to imply that all the languages of this family are descended from a single ancestral language that was spoken in a real speech community somewhere and at some point in the past. Where and when was this language spoken? Ortman's (2012) work on Tewa origins is directed in part toward answering this question, and his results comprise the first elements of our proposal: that Proto-Kiowa-Tanoan, or PKT, was spoken by Late Archaic foragers of the Colorado Plateau, and that this language began to diversify as its speakers adopted maize agriculture and a more sedentary lifestyle. This conclusion is based on analyses of shared phonetic innovations and archaeological dating of plants, animals, cultigens, objects and actions reflected in reconstructed vocabulary.

Figure 1 presents a summary of the history of Kiowa-Tanoan languages and dialects, with the present-day languages at the bottom and the proto-language at the top. The depicted sequence of speech-community events derives from a study of shared phonetic innovations in the present-day languages (Ortman 2012:Chapter 6) using methods developed by Ross (1997, 1998). The logic of this analysis is similar to that used in defining evolutionary trees from shared derived characters in biology, but in this case the evidence of intermediate branching is provided by phonetic innovations that are shared by two or more daughter languages. Speech communities (languages or dialects) are represented as ellipses, and overlap indicates contact between dialects or languages (and their speakers).

The first events in the history of Kiowa-Tanoan languages involved the gradual differentiation of the PKT speech community into four dialects: one ancestral to Kiowa, a second ancestral to Towa, a third to ancestral to the Tewa dialects, and a fourth ancestral to the Tiwa languages (see Figure 1). These four dialects took

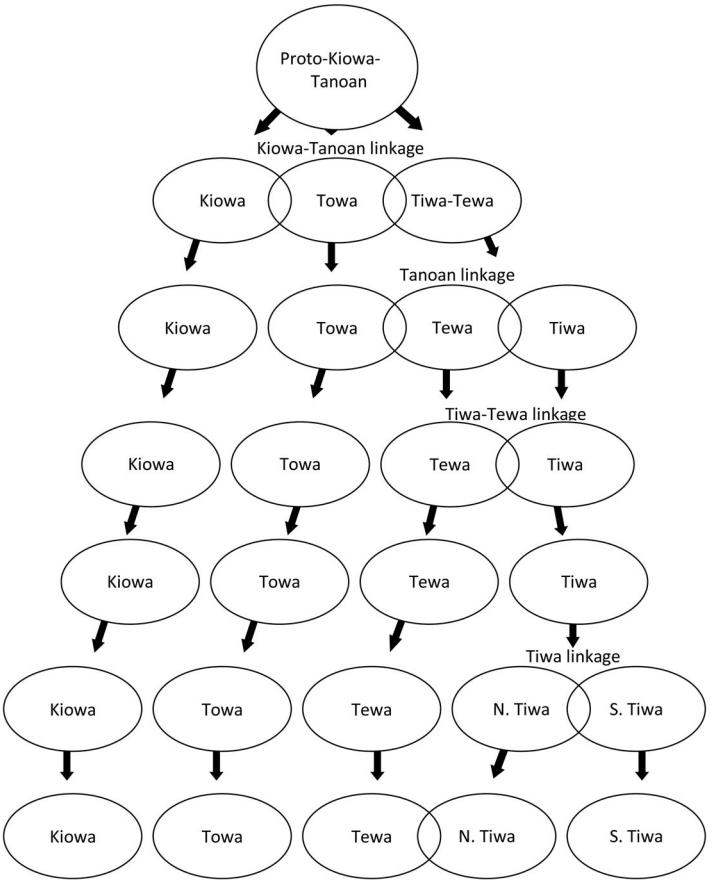

FIGURE 1 Evolution of Kiowa–Tanoan speech communities (after Ortman (2012:Figure 6.3)).

shape early in the history of the language family and were arranged in this order on the landscape, such that innovations diffused between adjacent dialects, but not across the entire dialect chain. The phonological data also imply that these dialects formed in a sequence, with Kiowa becoming distinct first, followed by Towa, then Tewa, and finally Northern and Southern Tiwa. All of this suggests a history of gradual demographic and geographic expansion over many centuries.

Defining the PKT homeland

One way of estimating where PKT was spoken is to examine the geographical distributions of plants and animals for which terms are reconstructible to the proto-language (Anthony 2007; Campbell 1998; Fowler 1972; Kirch and Green 2001; Shaul 2014). In general, one would expect speakers of the proto-language to have lived in an area where the natural ranges of these species overlap. We consider a number of reconstructed forms for PKT, Proto-Tanoan, and Proto-Tiwa that are useful for this purpose (Table 1). These reconstructions are based on the distribution of cognates in the present-day languages. The PKT terms are based on cognates in

TABLE 1

RECONSTRUCTED VOCABULARY FOR KIOWA–TANOAN SUBGROUPS.[A]

Proto-Kiowa-Tanoan
Plants
**ʼeya* 'willow', **sẹ* 'prickly pear', **siw-* 'wild onion', **kʷẹ* 'oak', **tu* 'cottonwood', **k̇uo* 'spruce', **sẹgo* 'wild potato', **sa* 'tobacco', **pɨ́o* 'ripe corn', **ia* '(flint)corn', **cʰą* 'squash, gourd', **ɨa* 'sunflower plant'
Animals
**kʷæl* 'coyote, wolf', **kiu* 'prairie dog', **k̇ʷuo* 'jackrabbit', **ṫo* 'antelope', **pẹ* 'deer', **kol-* 'bison', **pu* "gopher', **pɨ* 'fish', **kolno* 'badger', **tsu* 'dog'
Things/Actions
**tu* 'house', **tʰɨ* 'dwell', **ɻẹṭʰu-* 'ladder', **pɻẹ* 'sleeping mat', **si* 'stone point', **cæ̨* 'hammer', **kʰæy* 'skin, hide', **bų* 'bag', **cẹ* 'sinew', **to* 'shoe, moccasin', **pʰu* 'snare', **pǫ́* 'to sound', **tup-* 'flute, whistle', **pʰe* 'to smoke tobacco', **si̗* - 'to boil', **kų* 'ceremony, dance', **pɨa* 'drum'
Proto-Tanoan
Plants
**pʰuol-* 'yucca', **ṫo* 'pinyon nut', **gʷẹ* 'ponderosa', **no̗* - 'aspen', **hų* 'juniper', **kʰų* '(flour)corn', **kʰɨ* 'kernel', **tą* 'bean'
Animals
**ti* 'elk', **k̇uo* 'bighorn sheep', **so̗* 'skunk', **ce* 'eagle', **pɨ* 'fish', **delu* 'turkey'
Things/Actions
**suo* 'arrow', **tukʰʷa* 'pithouse', **tʼú̗* - '(coiled) basket', **búlu* 'pottery (bowl), round', **ɨ* 'bow', **kʰia* 'axe', **pi̗* 'thread', **pẹd-* 'sew', **pʼæ̨* 'road, trail', **æ* 'metate', **tʼá:* 'to grind', **kæ* 'to plant', **nąpa* 'field'
Proto-Tiwan
Animals
**tolí* 'macaw', **kʼuolo-* 'turtle'[b]
Things/Actions
**cial* 'gourd rattle', **ɬowo* 'viga', **nąkʰú̗* 'adobe', **kwiawi-pʼíẹ* 'raceroad', **cud-* 'shirt', **cɨlmɻyu* 'turquoise', **ṫókʰẹ* 'cotton', **pisólo* 'blanket', **pʼókú* 'tortilla'

[a]Reconstructions from Ortman (2012:Appendix A) unless otherwise noted.
[b]The attested forms are: N. Tiwa, *kʼuolóna*; S. Tiwa, *pʼakuaráde*; Tewa, *o:ku:*; Towa, *á:pɨlʼą́*; Kiowa, *tʼọkʼɔ̨ nkʰį* "water-shield-hard"; The Tiwa terms are cognate, the others of independent coinage.

Kiowa and at least one Tanoan language; the Proto-Tanoan terms are based on cognates in Towa and at least one other Tanoan language, and the absence of a Kiowa cognate; and the Proto-Tiwa terms are based on cognates in Northern and Southern Tiwa combined with the absence of cognates in the other languages. The list of PKT and Proto-Tanoan plant terms (Table 1) includes major species found in middle- and upper-elevation contexts in the western United States, from cottonwood, pinyon pine, juniper, yucca and prickly pear to Gambel oak, ponderosa pine, aspen, and blue spruce. The environment suggested by this list is mirrored by several terms for middle- and high-elevation fauna, including skunk, deer, bighorn sheep, wolf, and elk. The geographical distributions of a few key species from these lists helps to define the Kiowa-Tanoan homeland more closely (Figure 2). These key species are ponderosa pine, blue spruce, and quaking aspen, which occur only in upland settings (Little 1971–1978), and also the wild potato species *Solanum jamesii*. This last

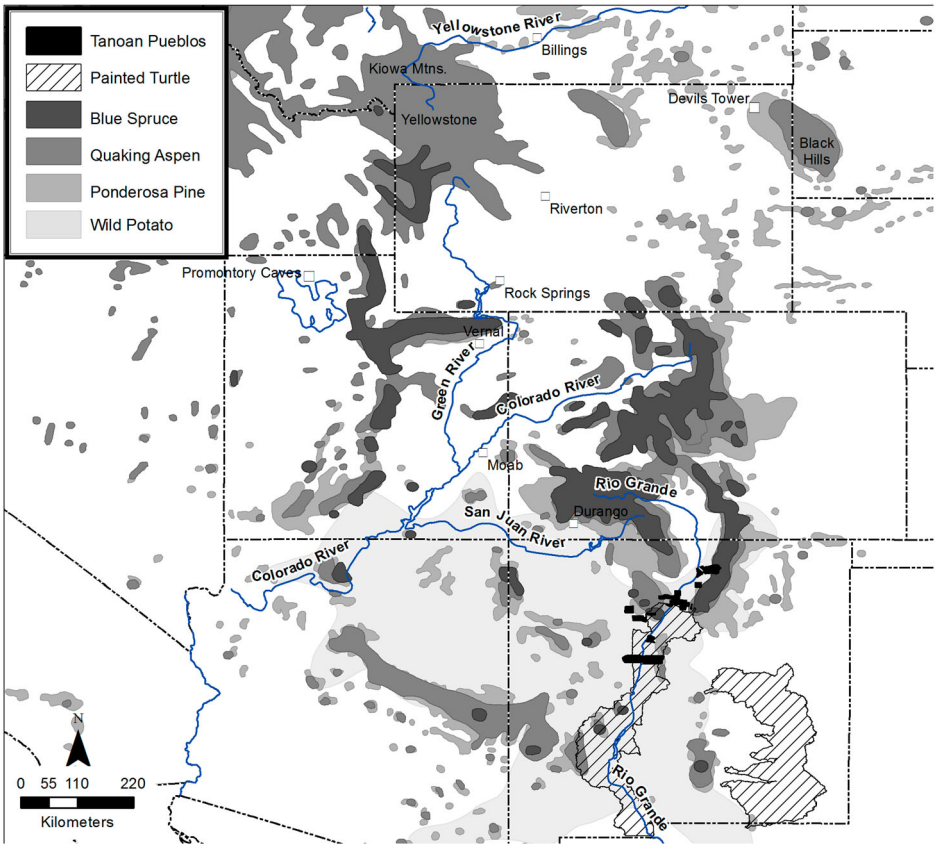

FIGURE 2 Tanoan-speaking pueblo lands, key plant and animal species ranges, and locations mentioned in the text.

species requires additional comment. The Tewa reflex of PKT **sẹgo* refers specifically to *Solanum jamesii* (Robbins et al. 1916:73), but the Kiowa reflex refers to sweet potato, the Tiwa reflexes to generic tubers, and the Towa reflex to wild potatoes (Ortman 2012:384). The Tewa reflex is thus the only cognate that specifically refers to this particular plant. Nevertheless, *Solanum jamesii* is the only referent to a native edible tuber in this cognate set, and the other reflexes all refer to edible but more recently introduced tubers. It therefore appears most reasonable to reconstruct the referent of PKT **sẹgo* as *Solanum jamesii*. Remains of this species are routinely found in Colorado Plateau archaeological sites (Adams and Bowyer 2002; Dunmire and Tierney 1995:210–211), and today this species grows wild in the US Southwest but generally south of the Colorado River (Bamberg et al. 2003). Given this, the overlapping ranges in Figure 2 suggest the Kiowa-Tanoan homeland was located in the US Southwest, in either the northern San Juan or upper Rio Grande drainages.

Additional clues argue against the upper Rio Grande. The first clue is that Northern Tiwa and Southern Tiwa are the most closely related Tanoan languages, but today they are spoken at opposite ends of the Pueblo area in the northern Rio

Grande, with a number of Tewa, Towa, and Keres-speaking communities in between. The most parsimonious explanation for this pattern is that Proto-Tiwa was originally spoken along the entire Rio Grande drainage and was split into a northern and southern area as a result of later in-migration by Tewa, Towa, and Keres speakers. This scenario, in turn, implies a PKT homeland outside the Rio Grande drainage. Under the alternative scenario, in which the Tanoan languages diversified within the Rio Grande, one would expect the Northern and Southern Tiwa speech communities to have ended up adjacent to each other.

The second clue involves a word for turtle that is only reconstructible to Proto-Tiwa. The painted turtle (*Chrysemys picta*) can be found today along the Rio Grande and Pecos rivers, and remains of this species are routinely found in northern Rio Grande archaeological sites (Harris 1968; Lang and Harris 1984; Stubbs and Stallings 1953). In contrast, the range of this species does not extend into southwest Colorado and the four corners area. In fact, no turtle remains have been identified in any sites excavated in southwest Colorado by Crow Canyon Archaeological Center (Crow Canyon Archaeological Center 2003), the Dolores Archaeological Project (Neusius 1986) or the Animas-La Plata Project (Potter and Edwards 2008). In addition, no turtle remains have been identified at Pueblo Alto in Chaco Canyon (Akins 1987) or at Salmon Ruins adjacent to the San Juan floodplain near Bloomfield, New Mexico (Durand and Durand 2006; Harris 2006). We suggest that the absence of cognate terms for "turtle" in Kiowa, Towa, and Tewa means that PKT speakers lived outside the range of *Chrysemys picta*, and that Proto-Tiwa speakers became aware of this species at some point between the Tiwa-Tewa split and the diversification of Proto-Tiwa into Northern Tiwa and Southern Tiwa.

These details suggest that PKT, as well as Proto-Tanoan and Proto-Tiwa-Tewa, were not spoken in the Rio Grande drainage, and that Proto-Tiwa speakers entered the Rio Grande prior to Tewa and Towa speakers. Given this, the most plausible area for the Kiowa-Tanoan homeland is the area between the San Juan and Colorado rivers, where high-elevation tree species and wild potatoes occur but turtles do not. Further, the data suggest early Kiowa-Tanoan dialects were arranged with Proto-Tiwa closest to the Rio Grande on the southeast and Proto-Kiowa closest to the Colorado River on the northwest. This would place the emerging Kiowa speech community at the far northwestern end of the Kiowa-Tanoan homeland, perhaps along the central Colorado–Utah border.

Dating the Kiowa-Tanoan split

Archaeological dating of cultural inventories provides additional clues regarding the time period when Kiowa became isolated from other Tanoan dialects (see Ortman 2012:Chapter 7 for details). The material culture implied by the reconstructed PKT terms (see Table 1) corresponds most closely with Basketmaker II sites of the Colorado Plateau. The terms related to cultigens indicate that PKT speakers also grew maize and squash, whereas the remaining items all occur in Late Archaic cave sites ranging from the Great Salt Lake to Glen Canyon in addition to Basketmaker II sites. Notably, terms for bow, arrow, pit house, pottery, axe, road, metate, to grind, to plant, flour corn, corn kernel, bean, field, and turkey reconstruct

only to Proto-Tanoan. These items only became common in the Pueblo area during Basketmaker III, or after 450 CE. Finally, it is important to emphasize that archaeologists generally recognize two variants of Basketmaker II culture – Eastern and Western – and suggest the Eastern Basketmaker II derive from Late Archaic foragers of the Colorado Plateau, whereas the Western Basketmaker II represent immigrant farmers from southern Arizona (Geib 2011; Matson 2002, 2006). Taken together, these data suggest PKT was spoken in Eastern Basketmaker II sites, which range from Durango, Colorado to Moab, Utah (Charles and Cole 2006), and that Kiowa had become isolated from the other Tanoan dialects by approximately 450 CE. Recall also that the Kiowa dialect seems to have emerged at the northwestern end of the Kiowa-Tanoan dialect chain.

Linking the Kiowa language and Fremont archaeology

The evidence reviewed above suggests the Kiowa speech community emerged within or adjacent to the Eastern Fremont area, roughly coincident with the appearance of Eastern Fremont sites about 250 CE (Simms 2008:Chapter 5; Talbot and Richens 1996). Although we doubt that Kiowa was the only language spoken across the Fremont area, it does seem reasonable to suggest that Kiowa was one of the languages spoken in Eastern Fremont sites of the Green River drainage, the Uinta Basin, and perhaps the Utah Valley.

Many lines of evidence support this association. First, Eastern Basketmaker II sites pre-date and overlap spatially with Fremont sites, and archaeologists have noted that several elements of Fremont culture, including cultigens, pit houses, and pottery spread into the Fremont area from the Pueblo area (Simms 2008). In addition, mtDNA haplogroup frequencies suggest ancient Fremont populations and present-day Jemez people derive from the same maternal lineage (Carlyle et al. 2000). Importantly, the Towa language spoken at Jemez Pueblo is also the language most closely related to Kiowa. Third, Fremont coiled basketry, which emphasizes a half rod and bundle foundation with non-interlocking stitches, or a whole rod foundation with interlocking stitches, also exhibits continuities with both Late Archaic and Eastern Basketmaker II coiled basketry [(but not Western Basketmaker II coiled basketry; Adovasioet al. 2002; Hurst 1940, 1941, 1942, 1944, 1945, 1947; Morris and Burgh 1954; Simms 2008: 199–205]).

Finally, continuities between Eastern Basketmaker II and Eastern Fremont rock art suggest that the latter is descended from the former, at least in part. Late Archaic hunter-gatherers of the Colorado Plateau appear to have adopted maize agriculture following contact with (Western Basketmaker II) farmers who migrated onto the plateau from the south ca. 300 BCE (Matson 1991, 2002, 2006). At this time the local hunter-gatherers also borrowed the trapezoidal body shape of the Western San Juan Anthropomorphic style while continuing to use Late Archaic headdress motifs (McNeil and Shaul 2017). As a result, Eastern Basketmaker II rock art of the Colorado–Utah border area (about 300 BCE to 450 CE) represents the blending of Late Archaic headdress motifs and related attributes (e.g., one or two horns, side wings, bear paws, and bird talons) with the San Juan Anthropomorphic body shape. This style occurs from the Durango–Los Pinos area (Charles and Cole

2006) north to Moab and the confluence of the Colorado and Dolores rivers, and up the Green river drainage as far north as the Uintah Basin (Figure 3). Thus, a range of evidence suggests that at least some Eastern Fremont groups derive from Eastern Basketmaker II groups, or from the same Late Archaic cultural base as the Eastern Basketmakers. If so, it appears reasonable to identify Kiowa as one of the languages spoken in the Fremont area from 250 CE until the end of the Fremont tradition around 1300 CE.

Kiowa Tribal Origins

The second anchor point of our model is the place where, and the time when, the present-day Kiowa tribe (as distinct from the Kiowa language) originated. Several lines of evidence discussed below indicate that this episode of ethnogenesis took place in the vicinity of what is now Yellowstone National Park, in northwest Wyoming and southwest Montana, around 1700 CE. Several Kiowa place-names refer to geographic features of this region (Harrington 1939; Meadows 2008: 114–117; Mooney 1898: 153–157), including the Kiowa Mountains in southwest

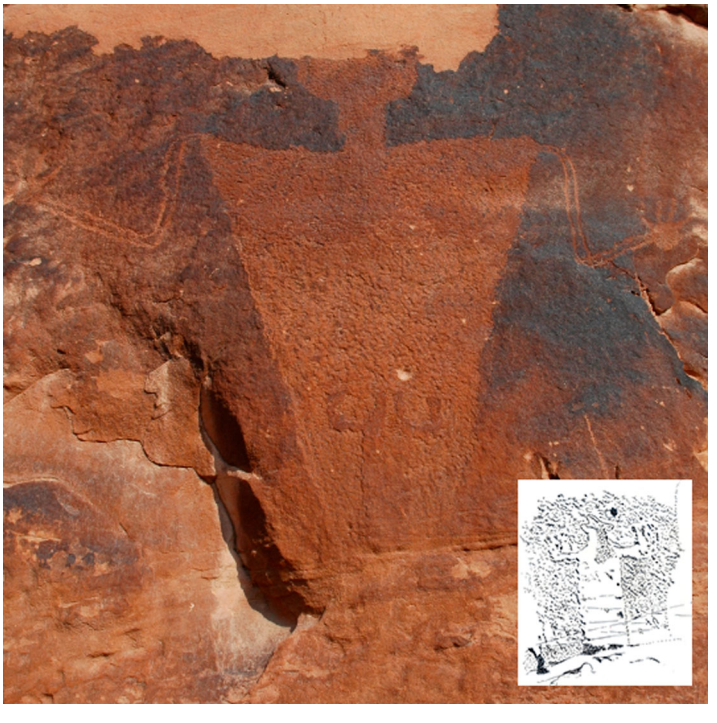

FIGURE 3 Eastern Basketmaker-style rock art figure with bear in bas relief, Cub Creek, Uintah Basin, Utah (J.A. McNeil photo). Insert, drawing of bear in bas relief by L.D. McNeil. Note the broad shoulders, trapezoidal body shape, round head and outline and solid-pecked technique characteristic of the San Juan Anthropomorphic style combined with a standing bear reflective of a hunting-gathering background.

TABLE 2

KIOWA PLACE NAMES FOR FEATURES OF THE NORTHWEST PLAINS.

Kiowa place name	English translation
Cáuiqòp	'Kiowa Mountains'
Tō´sáldā`u	Yellowstone valley ('heated water')
Xō´sáuvā`u	Yellowstone river ('stone-pipe river')
Xòaî	Devil's Tower ('rock that grew upwards')
Xō´kō´qòp	Black Hills ('rock-black mountains')
Sálkâuiqòp	Black Hills ('stomach-rind' mountains')

Sources: Meadows (2008); Mooney (1898).

Montana, the Yellowstone area, the Yellowstone River, Devil's Tower, and the Black Hills (Table 2). Kiowa people retain traditions of having once lived in these areas, and of having left the Yellowstone area prior to acquiring horses (Boyd 1981:7–21; Meadows 2008:115–121; Mooney 1898:153; Nabokov and Loendorf 2004:67–75). These traditions are clear and consistent, even among Kiowa people who have never seen these areas. The historical accuracy of such statements is also reinforced by eyewitness accounts:

> When the Lewis and Clark expedition ascended the Missouri River in the summer of 1805, they reported that the "Kiawa," in seventy tents, were located on the headwaters of the Platte, very near to the Yellowstone Valley, the territories of the Crow, and the traditional place of Kiowa emergence. (Hickerson 1996: 86)

Subsequent accounts also mention the Kiowa people as having lived around the Black Hills in the eighteenth century (Mooney 1898:156–157).

One final detail concerning the early history of the Kiowa tribe is especially important because it suggests that at some point Kiowa ancestors came into contact with a people who had recently migrated southward from the far north. In the mid-nineteenth century, the Kiowa sun dance camp circle contained six named subdivisions: *Kâtà* (biters, a.k.a. Arikara); *Kogui* (elks); *Kaigua* (Kiowa proper); *Kinyep* (big shields); *Síndiyúi* (Sindi's children); and *Semɔt* (stealers, a.k.a. Kiowa Apache or Plains Apache). This last subdivision is especially important because the Plains Apache are a Dene-speaking group that has been a part of the Kiowa tribe "from the earliest traditional period" (Mooney 1898: 246). Most Southern Dene (or Apachean) languages share more than 90 percent of basic vocabulary, indicating a recent diversification; but Plains Apache shares only about 75 percent with these other languages, suggesting a longer period of separation (Rice 2012: 264). This in turn suggests the Plains Apache language became distinct some time before a separate Dene language diversified into Jicarilla, Navajo, Lipan, Mescalero, Chiricahua, and so forth. Thus, the Plains Apache people appear to derive from the initial southward movement of Dene-speaking peoples from the Canadian subarctic (Rice 2012; Sapir 1936). This is consistent with oral tradition which states the Plains Apache

have come with the Kiowa from the extreme north, where they lay the scene of their oldest traditions, including their great medicine story. Their association with the Kiowa antedates the first removal of the latter from the mountains, as both tribes say they have no memory of a time when they were not together (Mooney 1898:246–247).

Given these details, we suggest that, at some point in the past, Kiowa speakers came into close contact with a group of Dene speakers who were recent immigrants from what is now Alberta, Canada. A case can be made that this early contact occurred in the Fremont area. A recent re-study of collections from the Promontory Caves, originally excavated by Steward (2009), demonstrates that a specialized bison-hunting group with a material culture identical to that of historic Dene speakers of Alberta moved into these caves in the thirteenth century CE (Ives 2014). The dating and ethnic affiliation of this migration is clear due to the recovery of more than a dozen AMS C-14 dates from distinctive, puckered toe, subarctic-style moccasins, all of which date from the mid-thirteenth century (Ives et al. 2012). The evidence for a thirteenth century migration of Dene speakers to the Promontory Caves, and of early interaction between Fremont and Dene-speaking people in the Great Salt Lake area, is of comparable strength to universally accepted site unit intrusions at Point of Pines (Haury) and Reeve Ruin (Di Peso 1958) in Arizona. If Kiowa was one of the languages spoken by Fremont people, the movement of Kiowa speakers to the Northwest Plains and the alliance between Kiowa and Plains Apache people may derive from this early southward movement of Dene speakers into the Fremont area.

The Fremont and the Northwest Plains

The final element of our proposal is that a portion of the Fremont population moved north beyond the headwaters of the Green River and toward the Kiowa tribal homeland after 1300 CE, and that this movement was responsible for the spread of the Kiowa speech community to the Northwest Plains. Archaeologists have commented on possible relationships between Fremont and Northwest Plains archaeology for many decades (Aikens 1966, 1967; Gebhard 1966; Janetski 1994; Schaafsma 1971; Wormington 1955), but the nature and direction of influence has been fuzzy due to poor dating of Northwest Plains sites. Francis and Loendorf (2002) have rectified this situation through direct dating of rock art sites. Their results show that the Late Prehistoric Period on the Northwest Plains began around 1300 CE, coincident with the break-up of Fremont society. Thus, material culture parallels between Fremont and Late Prehistoric Northwest Plains traditions reflect the influence of the former upon the latter. And it turns out there are several parallels.

The first line of evidence for the northward migration of at least some Fremont people around 1300 CE is a shift at this time in the direction from which obsidian was imported into the Utah Valley, from southern Utah sources to Idaho and Montana sources, including Obsidian Cliff in Yellowstone National Park (Janetski 1994, 2002). To the extent that long-distance exchange maps onto social ties created

through migration (Anthony 1990; Arakawa et al. 2011; Duff 1998), this northward shift in the direction of obsidian importation suggests a strengthened relationship between the Utah Valley and the Northwest Plains. A second line of evidence is that Fremont-style basketry has been found in sites in southern Idaho and Wyoming that post-date 1300 CE (Adovasio et al. 2002). These are the only areas outside the Fremont area where Fremont-style basketry has been found. A third line of evidence is that grayware pottery decorated using the same techniques as Fremont pottery appeared on the Northwest Plains for the first time during the Late Prehistoric period (Aikens 1966: 80).

Perhaps the most important parallels, however, are the striking continuities between Eastern Fremont and Northwest Plains rock art, and historic Kiowa ledger art. Shield-bearing warriors, horned headdresses, scalps displayed on poles, bear power, and weeping eyes are all common in Eastern Fremont rock art of the Utah/Colorado border area (Schaafsma 1971). Fremont-style rock art also occurs along the Green River drainage, from the Vernal, Utah area north to Rock Springs, Wyoming (Keyser and Poetschat 2013). Although some of the warriors in Eastern Fremont rock art are depicted with basketry shields, others appear to hold decorated hide shields, actual examples of which have been found in the Fremont area (although they post-date the Fremont, see Loendorf and Conner 1993). A good example is the famous Sun Carrier Panel at McConkie Ranch (Figure 4). Bear-masked warrior figures are also common in Eastern Fremont rock art (Figures 5 and 6) and demonstrate that Eastern Fremont rock art, bear

FIGURE 4 Three Kings Panel, McConkie Ranch, Uintah Basin. Chiefly figure holding feathered hide shield and scalp on pole (center), bear-masked figure (left), weeping eye figure (far left), and victim in bas relief (right). Note the combination of abrasion, incision, and painting utilized in this panel (François Gohier photo).

FIGURE 5 Bear-masked figures, one with shield, and free-standing bear-mask and shield, superimposed by bison images, McKee Springs, Uintah Basin (L.D. McNeil Photo).

impersonation related to warfare, and beliefs in human–bear transformation, all extended from the Eastern Fremont area into the Northwest Plains.

This entire iconographic complex subsequently appears in Castle Gardens-style rock art of the Wind River and Bighorn basins in Wyoming and Montana (Aikens 1967:201; Francis and Loendorf 2002:136–144; Loendorf et al. 2012; Schaafsma 1971:142–145; Wormington 1955:162). The Castle Gardens style has been radiocarbon dated to as early as A.D. 1250 (Francis and Loendorf 2002:141–142) and was produced into the historic period based on depictions of firearms with some figures, as occurs at Pictograph Cave near Billings, Montana (Mulloy 1958). This latter site also includes a prominent image of a bear-mask warrior nearly identical to those seen in Eastern Fremont panels (Mulloy 1958:Figure 46). The Castle Gardens style also shares the relatively rare combination of abrasion, incision, and painting seen in Eastern Fremont rock art (Figure 7). Finally, this entire iconographic complex of shield-bearing warriors, horned headdresses, scalps mounted on poles, weeping eyes, bear power, and shields with heraldic symbols is prominent in historic Kiowa material culture, as it is known from nineteenth century ethnographic notes, collections, and artwork (Figure 8).

Ethnographic evidence also links Fremont and Castle Gardens imagery with historic Kiowa warrior culture. In the nineteenth century many Plains tribes, including the Kiowa, maintained a series of ranked military societies through which warriors could pass over the course of their careers (Meadows 2010). Several tribes, including the Cheyenne, Crow, and Kiowa, also maintained shield societies for which protective designs came to warriors in dreams and specific designs became symbols of these societies (Greene 2001, 187:208; Keyser and Kaiser 2014; Mooney 1901). One of the shield designs documented for historic Kiowa people is of a bear emerging

FIGURE 6 Bear-masked, painted, and pecked figure, Ashley-Dry Fork, Uintah Basin (J.A. McNeil photo, enhanced using D-stretch).

from her den, and rock art examples of this design are documented at the Castle Gardens site east of Riverton, Wyoming (Figure 7) and other Northwest Plains sites (Keyser 2004; Keyser and Kaiser 2014). Based on the evidence presented here, we suggest at least some of this bear power imagery can be traced back to Eastern Fremont people of the Colorado Plateau.

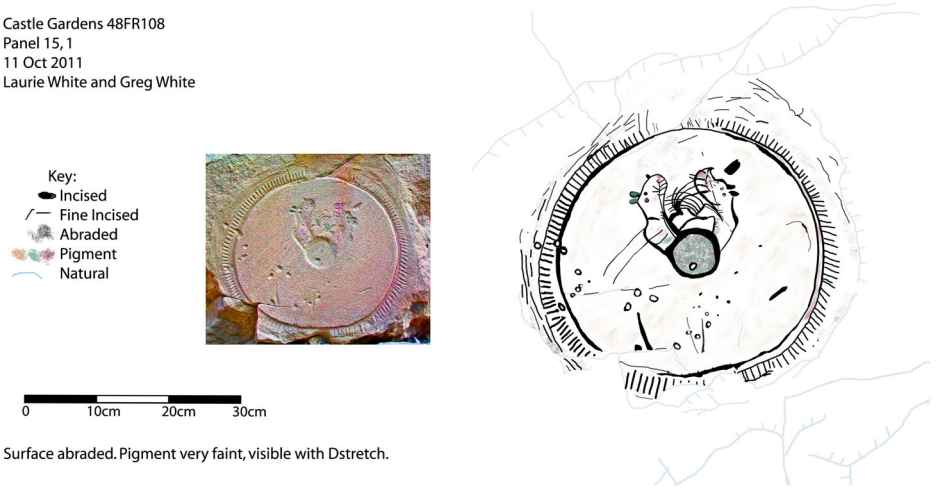

FIGURE 7 Panel 15.1 at the Castle Gardens site east of Riverton, Wyoming (Drawing by Greg White and Laurie White, Courtesy of Larry Loendorf). Insert, enhanced D-stretch image of the panel (Larry Loendorf Photo). Note the bear-coming-out motif on the shield and the combination of abrasion, incision, and painting used to create the image.

Additionally, oral tradition also provides tantalizing links between Kiowa shields and Eastern Fremont and Castle Gardens shield imagery. In the 1890s, James Mooney became fascinated with what he called Kiowa shield heraldry and this led him to work closely with retired warriors to document the full repertoire of designs that were in use during the pre-reservation period (Merrill et al. 1997; Powell 1904; also see Figure 8). As part of this work, Mooney recorded a Kiowa tale concerning the origin of the first shield. Loendorf (2012:62) summarizes this story (from Mooney 1897: 12) as one in which a young man, Poor Sore-eyed Boy, despaired one cold winter after failing to receive food from the buffalo hunters in his tribe. As he walked home with his grandmother, he found a round spot that was free of snow where they believed a bear had slept. Poor Sore-eyed Boy decided to lie down and die on this spot, and his grandmother left him. During the night, Poor Sore-eyed Boy was aroused by a large rock that had rolled over and over until it reached the edge of the spot where he was sleeping. Rock asked for his place back, but Poor Sore-eyed Boy refused to get up until Rock offered to give him medicine for his protection in exchange. Poor Sore-eyed boy then got up and Rock gave him the first shield of the tribe, after which Poor Sore-eyed Boy went on to become a great warrior and powerful man that arrows bounced off of.

The importance of this story is the connection it draws between the protective power of bison hide shields, the hardness of rock, weeping eyes, and fearlessness of death. Indeed, the process of polishing, cutting, and painting a bison hide to produce a shield as hard as rock mirrors the steps involved in creating Castle Gardens and Eastern Fremont shield images on actual rock. These parallels in the process of making actual shields, the technological style of shield imagery in

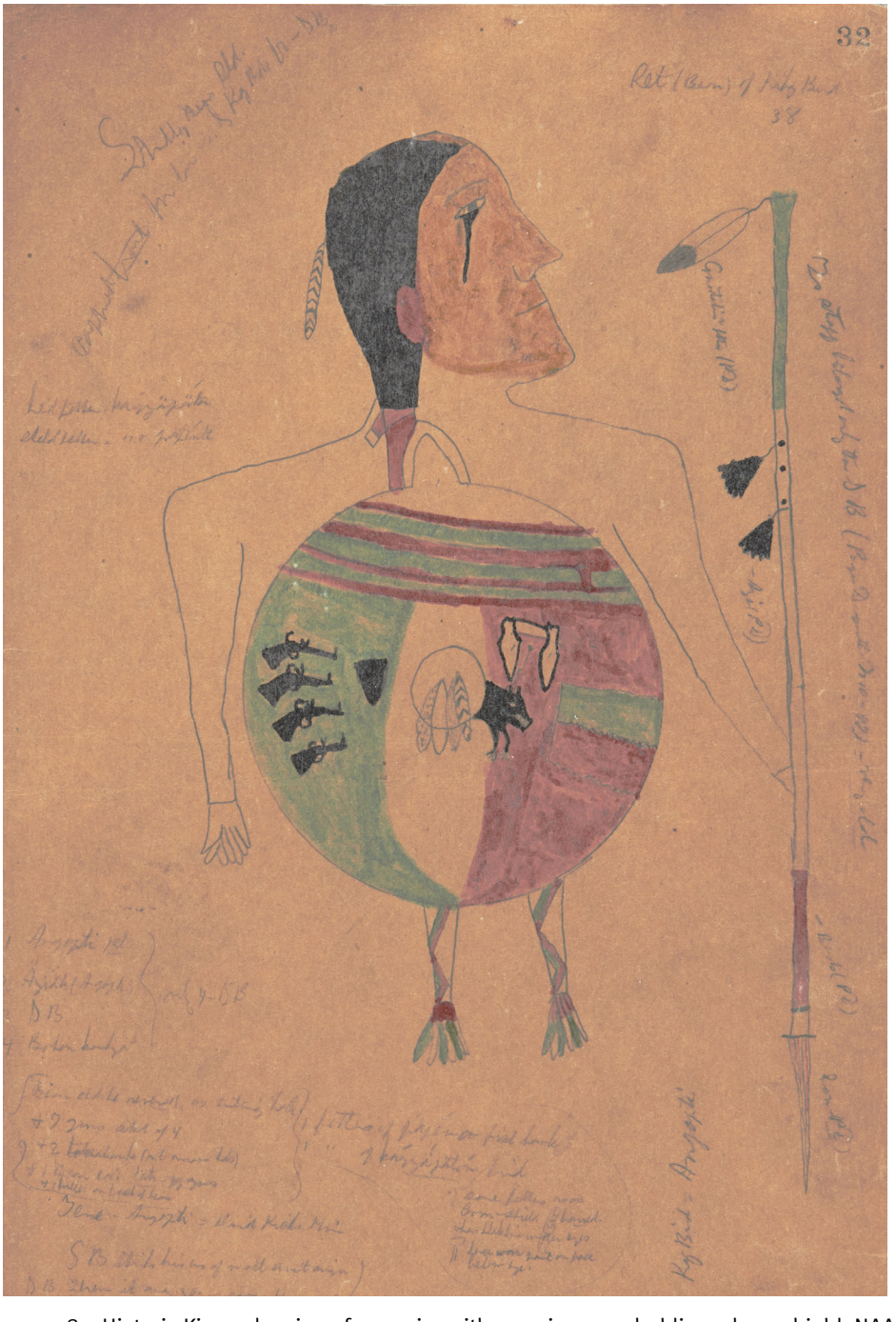

FIGURE 8 Historic Kiowa drawing of a warrior with weeping eyes holding a bear shield. NAA MS 2538. Courtesy of the National Anthropological Archives.

Eastern Fremont and Castle Gardens rock art, historic Kiowa warrior imagery, and Kiowa oral tradition provide compelling evidence of historical continuities between Fremont, Northwest Plains, and Kiowa people.

The Kiowa Odyssey

Our sketch of the history of the Kiowa speech community is merely a hypothesis to be examined more closely in future research. Biological data would be especially useful for testing this hypothesis, as would additional research on correlations between rock art and historic Kiowa material culture and oral tradition. But regardless of what happened in between, two points of Kiowa history are clear: the Kiowa language originated in the northern U.S. Southwest, and the Kiowa tribe formed in the Yellowstone area around 1700 CE. Based on the evidence we present in this paper, we conclude that Fremont archaeology provides a plausible link between these two known points and hope this paper will stimulate additional research on this possibility.

Assuming for the moment that our model holds up, we think it has significant implications for historical anthropology. First our model suggests the histories of speech communities do not respect the boundaries of archaeological or ecological culture areas. Indeed, the Kiowa odyssey calls into question the very notion that culture areas have coherence on historical time scales, or indeed that there is any utility in distinguishing a Pueblo vs. versus Fremont cultural area. In this specific case, a single language, Kiowa, appears to have been spoken in the Ancestral Pueblo area, the Fremont area, the Northwest Plains, and finally the Southern Plains over the past two millennia. If archaeology and linguistics are to be integrated within historical anthropology, analyses cannot be limited by the boundaries of archaeological and cultural areas as traditionally conceived.

Second, our model highlights a trap archaeologists often fall into when attempting to relate archaeology and language to present-day ethnic groups. In the ethnographic literature, a tribe and the native language of that group are often given the same label. In the specific case discussed here, the term Kiowa is used to refer to both a tribe and a language. This equation can encourage one to think that the history of a language is the same thing as the history of a tribe. This is emphatically not the case. To give an obvious example, the language most Americans speak today originated in England and can be traced much further into the past, all the way back to a Proto-Indo-European (PIE) homeland somewhere in central Asia (Anthony 2007). In contrast, present-day American identity emerged only during the eighteenth century, and it would be ridiculous to suggest that English-speakers thought of themselves as Americans before they came to the New World. Our model of Kiowa history has the same character – the Kiowa language can be traced back almost two thousand years to the Colorado Plateau, but the Kiowa tribe as an ethnic group seems to have originated more recently, around 1700 CE in the northern Plains, with the Kiowa language being one of the elements of this new identity. Given this, to say that the Kiowa originated on the Colorado Plateau is imprecise and misleading. The history of a language is distinct from the history of the group or groups that speak that language today, even if anthropologists have traditionally labeled both using a single term.

A third implication of our model is that it presents a case where a group that had previously adopted agriculture went back to hunting and gathering. Recent arguments suggest it is difficult for farming peoples to go back to foraging (Bellwood 2005; Bellwood and Renfrew 2003), but such reversions are well known for the Great Plains, where a number of previously agricultural peoples gave up farming in favor of horse nomadism in the eighteenth century (Oliver 1962). Similar examples are also known for the Amazon Basin (Yu 2015), and potentially the Great Basin as well (Hill 2002). The Kiowa odyssey provides yet another example. In this case, the shift from farming to an increasing reliance on hunting and gathering that we envision for Kiowa history is consistent with isotopic data from the Great Salt Lake area which indicate a decline in maize intake among Fremont people after 1150 CE (Coltrain and Leavitt 2002). Thus, even if it is reasonable to view the diversification of Kiowa-Tanoan as a residue of early agriculture, consistent with the Farming-Language Dispersal Hypothesis (Bellwood 2005; Bellwood and Renfrew 2003), the Kiowa Odyssey reinforces the fact that societies can and do give up farming, even as they retain their language and social identity. In the Fremont case, it is tempting to attribute the reversion to climate change, either to changes in precipitation patterns or to colder temperatures. If so, an important question for future research would be why, when faced with changing conditions, at least some Fremont people chose to give up farming altogether instead of moving toward areas where farming was feasible.

A fourth implication of our hypothesis is that Kiowa-Tanoan linguistics has much to offer our understanding of the American West. Further work on PKT is relevant for Late Archaic foragers of the Colorado Plateau, the Eastern Basketmaker II, the Fremont, and peoples of the Northwest Plains. Investigation of contact-induced changes in Kiowa after it became isolated from Tanoan should also provide clues to the locations of the speech communities that were the sources of these changes. For example, Kiowa sociolinguistics suggest that, over the course of two millennia, Kiowa speakers interacted with Crow and Shoshone speakers in the Northwest Plains, as well as speakers of additional languages of the Fremont area. The identification of contact-induced changes that occurred prior to influence from Crow and Shoshone may provide insights into the dialect geography of the Fremont world. In addition, Kiowa sociolinguistics indicate that certain elements of historic Plains culture, especially those related to warfare, originated among farming communities of the Colorado Plateau in addition to the Plains, Prairies, and Great Lakes.

We conclude that American Southwest archaeologists might gain new insights into Fremont and Eastern Basketmaker II culture and society by examining the historic and ethnographic records of Kiowa and related plains peoples. This literature may provide better analogs in the areas of social organization, ceremonialism, and warrior culture than the Pueblo ethnographic literature. It is important to recognize that, if the Kiowa odyssey really happened, present-day Kiowa culture bears the same historical relationship to early Pueblo culture as present-day Pueblo culture, and it may provide unique insights into Fremont culture as well. To offer just one example, ethnographic descriptions of warrior societies (Greene 2001: 187–207; Mooney 1898: 230–231, 1901; Powell 1904) may provide better models for aspects of Eastern Basketmaker II and Fremont society expressed in rock art than

anything in the Pueblo ethnographic literature. For a variety of reasons, additional research on connections between Kiowa–Tanoan languages, the Fremont, and the Northwest Plains would be quite productive and worthwhile.

Acknowledgments

We thank Jack Ives, Larry Loendorf, William Merrill, Dewey Tsonetokoy Jr., and David Shaul for discussions and for helpful comments on previous versions of this paper. We also thank two anonymous reviewers and the editor for helpful comments on earlier drafts.

ORCID

Scott G. Ortman http://orcid.org/0000-0003-0709-5287
Lynda D. McNeil http://orcid.org/0000-0002-8514-5799

References

Adams, Karen R., and Vandy E. Bowyer (2002) Sustainable Landscape: Thirteenth-Century Food and Fuel Use in the Sand Canyon Locality. In *Seeking the Center Place: Archaeology and Ancient Communities in the Mesa Verde Region*, edited by Mark D. Varien and Richard H. Wilshusen, pp. 123–142. University of Utah Press, Salt Lake City.

Adovasio, James M., David R. Pedler, and Jeff S. Illingsworth (2002) Fremont Basketry. *Utah Archaeology* 15(1):5–26.

Aikens, C. Melvin (1966) *Fremont-Promontory-Plains Relationships in Northern Utah*. Anthropological Papers, No. 82. University of Utah Press, Salt Lake City.

Aikens, C. Melvin (1967) Plains Relationships of the Fremont Culture: A Hypothesis. *American Antiquity* 32(2):198–209.

Akins, Nancy J (1987) Faunal Remains from Pueblo Alto. In *Investigations at the Pueblo Alto Complex, Chaco Canyon, Volume III, Part 2: Artifactual and Biological Analyses*, edited by Frances J. Mathien and Thomas C. Windes, pp. 445–650. Publications in Archaeology 18F. National Park Service, Santa Fe.

Anthony, David W (1990) Migration in Archaeology: The Baby and the Bathwater. *American Anthropologist* 92(4):895–914.

Anthony, David W (2007) *The Horse, the Wheel, and Language: How Bronze-Age Riders from the Eurasian Steppes Shaped the Modern World*. Princeton University Press, Princeton.

Arakawa, Fumiyasu, Scott G. Ortman, Andrew I. Duff, and M. Steven Shackley. (2011) Obsidian Evidence of Interaction and Migration from the Mesa Verde Region, Southwest Colorado. *American Antiquity* 76(4):773–795.

Bamberg, J., A. del Rio, Z. Huaman, S. Vega, M. Martin, A. Salas, J. Pavek, S. Kiru, C. Fernandez, and D. Spooner. (2003) A Decade of Collecting and Research on Wild Potatoes of the Southwest USA. *American Journal of Potato Research* 80:159–172.

Bellwood, Peter S (2005) *First Farmers: The Origins of Agricultural Societies*. Blackwell Publishing, Oxford.

Bellwood, Peter, and Colin Renfrew, eds. (2003) *Examining the Farming/Language Dispersal Hypothesis*. McDonald Institute for Archaeological Research, University of Cambridge, Oxford.

Boyd, Maurice (1981) *Kiowa Voices, Volume I: Ceremonial Dance, Ritual and Song*. Texas Christian University Press, Fort Worth.

Campbell, Lyle (1998) *Historical Linguistics: An Introduction*. The MIT Press, Cambridge, MA.

Carlyle, Shawn W., Ryan L. Parr, Geoffrey Hayes, and Dennis H. O'Rourke (2000) Context of Maternal Lineages in the Greater Southwest. *American Journal of Physical Anthropology* 113:85–101.

Charles, Mona C., and Sally J. Cole (2006) Chronology and Cultural Variation in Basketmaker II. *Kiva* 72(2):167–216.

Coltrain, Joan Brenner, and Steven W. Leavitt (2002) Climate and Diet in Fremont Prehistory: Economic Variability and Abandonment of Maize Agriculture in the Great Salt Lake Basin. *American Antiquity* 67(3):453–485.

Crow Canyon Archaeological Center (2003) The Crow Canyon Archaeological Center Research Database [HTML Title]. http:/www.crowcanyon.org/researchdatabase, accessed November 1, 2015.

Di Peso, Charles C (1958) *The Reeve Ruin of Southeastern Arizona: A Study of Prehistoric Western Pueblo Migration into the Middle San Pedro Valley.* Amerind Foundation 8. Dragoon, Arizona.

Duff, Andrew I (1998) The Process of Migration in the Late Prehistoric Southwest. In *Migration and Reorganization: The Pueblo IV Period in the American Southwest*, edited by Katherine A. Spielmann, pp. 31–52. Anthropological Research Papers, no. 51. Arizona State University, Tempe.

Dunmire, William W., and Gail D. Tierney (1995) *Wild Plants of the Pueblo Province: Exploring Ancient and Enduring Uses*. Museum of New Mexico Press, Santa Fe.

Durand, Kathy Roler, and Stephen R. Durand (2006) Variation in Economic and Ritual Fauna at Salmon Ruins. In *Thirty-Five Years of Archaeological Research at Salmon Ruins, New Mexico, Volume 3: Archaeobotanical Research and Other Analytical Studies*, edited by Paul F. Reed, pp. 1079–1100. Center for Desert Archaeology, Tucson.

Fowler, Catherine S (1972) Some Ecological Clues to Proto-Numic Homelands. In *Great Basin Culture Ecology: A Symposium*, edited by Don D. Fowler, pp. 105–121. Desert Research Institute Publications in the Social Sciences, vol. 8. University of Nevada Reno.

Francis, Julie E., and Lawrence L. Loendorf (2002) *Ancient Visions: Petroglyphs and Pictographs of the Wind River and Bighorn Country, Wyoming and Montana*. University of Utah Press, Salt Lake City.

Gebhard, David (1966) The Shield Motif in Plains Rock Art. *American Antiquity* 31(5):721–732.

Geib, Phil R (2011) *Foragers and Farmers of the Northern Kayenta Region. Excavations Along the Navajo Mountain Road*. University of Utah Press, Salt Lake City.

Greene, Candace S (2001) *Silver Horn: Master Illustrator of the Kiowas*. University of Oklahoma Press, Norman.

Hale, Kenneth L (1967) Toward a Reconstruction of Kiowa–Tanoan Phonology. *International Journal of American Linguistics* 33(2):112–120.

Harrington, John Peabody (1910) On Phonetic and Lexic Resemblances Between Kiowan and Tanoan. *American Anthropologist* 12(1):119–123.

Harrington, John Peabody (1939) Kiowa Memories of the Northland. In *So Live the Works of Men*, edited by Donald D. Brand and Fred E. Harvey, pp. 162–176. University of New Mexico Press, Albuquerque.

Harris, Arthur H (1968) Faunal Remains. In *The Cochiti Dam Archaeological Salvage Project, Part 1: Report on the 1963 Season*, edited by Charles H. Lange, pp. 198–235. Museum of New Mexico Press, Santa fe.

Harris, Arthur H (2006) Preliminary Analysis of Faunal Material from Salmon Ruins. In *Thirty-Five Years of Archaeological Research at Salmon Ruins, New Mexico, Volume 3: Archaeobotanical Research and Other Analytical Studies*, edited by Paul F. Reed, pp. 1065–1078. vol. 3. Center for Desert Archaeology, Tucson.

Haury, Emil W (1994[1958]) Evidence at Point of Pines for a Prehistoric Migration from Northern Arizona. In *Emil W. Haury's Prehistory of the American Southwest*, edited by J. Jefferson Reid and David E. Doyel, pp. 414–421. University of Arizona Press, Tucson.

Hickerson, Nancy P (1996) Ethnogenesis in the South Plains: Jumano to Kiowa? In *History, Power and Identity: Ethnogenesis in the Americas, 1492–1992*, edited by Jonathan D. Hill, pp. 70–89. University of Iowa Press, Iowa City.

Hill, Jane H (2002) Proto-Uto-Aztecan Cultivation and the Northern Devolution. In *Examining the Farming/Language Dispersal Hypothesis*, edited by P. S. Bellwood and C. Renfrew, pp. 331–340. McDonald Institute for Archaeological Research, Cambridge.

Hurst, C. T (1940) Preliminary Work in Tabeguache Cave – 1939. *Southwestern Lore* 6(1):4–18.

Hurst, C. T (1941) The Second Season in Tabeguache Cave. *Southwestern Lore* 7(1):4–19.

Hurst, C. T (1942) Completion of Work in Tabeguache Cave. *Southwestern Lore* 8(1):7–16.

Hurst, C. T (1944) 1943 Excavation in Cave II, Tabeguache Canyon, Montrose County, Colorado. *Southwestern Lore* 10(1):2–14.

Hurst, C. T (1945) Completion of Excavation of Tabeguache Cave II. *Southwestern Lore* 11(1):8–12.

Hurst, C. T (1947) Excavation of Dolores Cave – 1946. *Southwestern Lore* 13(1):8–17.

Ives, John W (2014) Resolving the Promontory Culture Enigma. In *Archaeology in the Great Basin and Southwest: Papers in Honor of Don D. Fowler*, edited by Nancy J. Parezo and Joel C. Janetski, pp. 149–162. University of Utah Press, Salt Lake City.

Ives, John W., Duane Froese, Fiona Brock, and Christopher Ramsey (2012) A Large Series of AMS Ages for Promontory Caves 1 and 2. Paper presented at the 2012 Great Basin Anthropological Conference, Tahoe City, Nevada.

Janetski, Joel C (1994) Recent Transitions in Eastern Great Basin Prehistory: The Archaeological Record. In *Across the West: Human Population Movement and the Expansion of the Numa*, edited by David B. Madsen and David Rhode, pp. 157–178. University of Utah Press, Salt Lake City.

Janetski, Joel C (2002) Trade in Fremont Society: Contexts and Contrasts. *Journal of Anthropological Archaeology* 21:344–370.

Keyser, James D (2004) "Bear Coming Out": A Distinctive Plains Shield Motif. *The Wyoming Archaeologist* 48(2):35–42.

Keyser, James D., and David A. Kaiser (2014) Bear Gulch Style Shield Heraldry: Iconography of a Protohistoric Period Northwestern Plains Warrior Society. *Plains Anthropologist* 59:144–181.

Keyser, James, and George Poetschat (2013) New Rock Art Evidence for Fremont Occupation of Southwestern Wyoming. Paper presented at the 71st Annual Plains Anthropological Conference, Loveland, Colorado.

Kirch, Patrick V., and Roger C. Green (2001) *Hawaiki, Ancestral Polynesia: An Essay in Historical Anthropology*. Cambridge University Press, Cambridge.

Kroskrity, Paul V (1993) *Language, History, and Identity: Ethnolinguistic Studies of the Arizona Tewa*. University of Arizona Press, Tucson.

Lang, Richard W., and Arthur H. Harris (1984) *The Faunal Remains from Arroyo Hondo Pueblo, New Mexico*. Arroyo Hondo Archaeological Series 5. School of American Research Press, Santa Fe.

Levy, Jerrold E (2001) Kiowa. In *Handbook of North American Indians, Vol. 13 (Parts 1 & 2): Plains*, edited by Raymond J. Demallie, pp. 907–925. William C. Sturtevant, General editor. Smithsonian Institution, Washington, DC.

Little, Albert L., Jr (1971–1978) *Atlas of United States Trees*. 5 vols. U.S. Department of Agriculture, Washington D.C.

Loendorf, Lawrence L (2012) *Three Rock Art Sites on the Musselshell River, Montana*. Sacred Sites Research, Inc, Albuquerque.

Loendorf, Lawrence L., and Stuart W. Conner (1993) The Pectol Shields and the Shield-Bearing Warrior Rock Art Motif. *Journal of California and Great Basin Anthropology* 15(2):216–224.

Loendorf, Lawrence L., Laurie L. White, and Greg White (2012) *Rock Art Panel Tracing at Castle Gardens, Site 48FR108, Fremont County, Wyoming*. Sacred Sites Research, Inc, Albuquerque.

Matson, R. G (1991) *The Origins of Southwestern Agriculture*. University of Arizona Press, Tucson.

Matson, R. G (2002) The Spread of Maize Agriculture into the U.S. Southwest. In *Examining the Farming/Language Dispersal Hypothesis*, edited by Peter Bellwood and Colin Renfrew, pp. 341–356. McDonald Institute for Archaeological Research, University of Cambridge, Oxford.

Matson, R. G (2006) What Is Basketmaker II? *Kiva* 72(2):149–166.

McNeil, Lynda D., and David L. Shaul (2017) Western Basketmaker II Origins and Identities: Correlating Evidence from Archaeology, Linguistics, and Rock Art. MS thesis, School of Human Evolution and Social Change, Arizona State University.

Meadows, William C (2008) *Kiowa Ethnogeography*. University of Texas Press, Austin.

Meadows, William C (2010) *Kiowa Military Societies: Ethnohistory and Ritual*. University of Oklahoma Press, Norman.

Merrill, William L., Marian Kaulaity Hansson, Candace S. Greene, and Frederick J. Reuss (1997) *A Guide to Kiowa Collections at the Smithsonian Institution*. Smithsonian Contributions to Anthropology 40. Smithsonian Institution Press, Washington, DC.

Mooney, James (1897) *Kiowa Heraldry Notebook*. Manuscript 2531, Volume 1. National Anthropological Archives, Smithsonian Institution, Washington, DC.

Mooney, James (1898) *Calendar History of the Kiowa Indians*. 17th Annual Report of the Bureau of American Ethnology. Government Printing Office, Washington.

Mooney, James (1901) Indian Shield Heraldry. *The Southern Workman* 30(1):500–504.

Morris, Earl H., and Robert F. Burgh (1954) *Basket Maker II Sites Near Durango, Colorado*. Carnegie Institution of Washington, Washington, DC.

Mulloy, William T (1958) *A Preliminary Historical Outline for the Northwestern Plains*. University of Wyoming Publications 22 no. 1, Laramie.

Nabokov, Peter, and Lawrence L. Loendorf (2004) *Restoring a Presence: American Indians and Yellowstone National Park*. University of Oklahoma Press, Norman.

Neusius, Sarah W (1986) The Dolores Archaeological Program Faunal Data Base: Resource Availability and Resource Mix. In *Dolores Archaeological Program: Final Synthetic Report*, edited by David A. Breternitz, Christine K. Robinson and G. Timothy Gross, pp. 199–303. Bureau of Reclamation, Engineering and Research Center, Denver.

Oliver, Symmes C (1962) *Ecology and Cultural Continuity as Contributing Factors in the Social Organization of the Plains Indians*. University of California Publications in American Archaeology and Ethnology 48(1). University of California Press, Berkeley and Los Angeles.

Ortman, Scott G (2012) *Winds from the North: Tewa Origins and Historical Anthropology*. University of Utah Press, Salt Lake City.

Potter, James M., and Joshua S. Edwards (2008) Chapter 12: Vertebrate Faunal Studies. In *Animas-La Plata Project Volume X--Environmental Studies*, edited by J. M. Potter, pp. 241–286. vol. 10. Phoenix: SWCA, Inc.

Powell, John W (1904) Work in Esthetology. In *Twenty-Third Annual Report of the Bureau of American Ethnology*, xxii–xxv. Government Printing Office, Washington.

Rice, Keren (2012) Linguistic Evidence Regarding the Apachean Migration. In *From the Land of Ever-Winter to the American Southwest: Athabaskan Migrations, Mobility, and Ethnogenesis*, edited by Deni J. Seymour, pp. 249–270. Univrsity of Utah Press, Salt Lake City.

Robbins, Wilfred William, John Peabody Harrington, and Barbara Freire-Marreco (1916) *Ethnobotany of the Tewa Indians*. Bureau of American Ethnology Bulletin, no. 55. Smithsonian Institution, Washington, DC.

Ross, Malcolm (1997) Social Networks and Kinds of Speech-Community Event. In *Archaeology and Language I: Theoretical and Methodological Orientations*, edited by Roger Blench and Matthew Spriggs, pp. 209–261. Routledge, London and New York.

Ross, Malcolm (1998) Sequencing and Dating Linguistic Events in Oceania: The Linguistics/Archaeology Interface. In *Archaeology and Language II: Correlating Archaeological and Linguistic Hypotheses*, edited by Roger Blench and Matthew Spriggs, pp. 141–173. Routledge, London and New York.

Sapir, Edward (1936) Internal Linguistic Evidence Suggestive of the Northern Origin of the Navaho. *American Anthropologist* 38(2):224–235.

Schaafsma, Polly (1971) *The Rock Art of Utah: A Study from the Donald Scott Collection, Peabody Museum, Harvard University*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

Schleiser, Karl H (1994) Commentary: A History of Ethnic Groups in the Great Plains. In *Plains Indians, A.D. 500–1500: The Archaeological Past of Historic Groups*, edited by Karl H. Schleiser, pp. 308–381. University of Oklahoma Press, Norman.

Shaul, David L (2014) *A Prehistory of Western North America: The Impact of Uto-Aztecan Languages*. University of New Mexico Press, Albuquerque.

Simms, Steven R (2008) *Ancient Peoples of the Great Basin and Colorado Plateau*. Left Coast Press, Walnut Creek, California.

Steward, Julian H (2009) *Ancient Caves of the Great Salt Lake Region*. University of Utah Press, Salt Lake City.

Stubbs, Stanley A., and W. S. Stallings, Jr (1953) *The Excavation of Pindi Pueblo, New Mexico*. Monographs of the School for American Research and the Laboratory of Anthropology, Santa Fe. No. 18.

Sutton, Logan (2010) Noun Class and Number in Kiowa–Tanoan: Comparative-Historical Research and Respecting Speakers' Rights in Fieldwork. In *Fieldwork and Linguistic Analysis in Indigenous Languages of the Americas*, edited by Andrea L. Berez, Jean Mulder, and Daisy Rosenblum, pp. 57–89. Language Documentation and Conservation Special Publication 2. University of Hawai'i Press, Honolulu.

Talbot, Richard K., and Lane D. Richens (1996) *Steinaker Gap: An Early Fremont Farmstead*. Museum of Peoples and Cultures Occasional Papers No. 2. Brigham Young University, Provo, Utah.

Wormington, H. M (1955) *A Reappraisal of the Fremont Culture*. Proceedings, No. 1. Denver Museum of Natural History, Denver.

Yu, Pei-Lin (2015) Ethnoarchaeology of Foraging and the Case of Vanishing Agriculturalists in the Amazon Basin. *Journal of Anthropological Archaeology* 38:59–66.

Notes on contributors

Scott G. Ortman is Assistant Professor of Anthropology at the University of Colorado Boulder, a Research Associate of the Crow Canyon Archaeological Center, and an External Professor at the Santa Fe Institute.

Lynda D. McNeil is a Research Associate of the School of Human Evolution and Social Change at Arizona State University.

Correspondence to: Scott G. Ortman, Department of Anthropology, University of Colorado Boulder, 233 UCB, Boulder, CO 80303, USA. Email: scott.ortman@colorado.edu

Article received November/24/2015; accepted April/24/2017