

DETERMINING THE INDIRECT EFFECTS OF SPANISH COLONIALISM ON DISMAL RIVER ASPECT (A.D.1650-1725) PEOPLES IN NEBRASKA

Sarah Trabert

Abstract

Protohistoric Native Americans living on the Plains were linked with people in the Southwest, and as Puebloan groups experienced social and economic disruption stemming from Spanish colonization, many traveled to the Plains bringing with them their own cultural practices and technology. Much is known concerning the impacts that European colonization had on Native Americans living where direct contact took place, but less is known about how the effects of these social and demographic changes spread to regions beyond the borders of colonial control. The ceramics from four Dismal River aspect sites in Nebraska were chosen for analysis because Dismal River aspect groups were poised at an important crossroads between the Plains and the Southwest. Although, the re-analysis of these ceramics indicates limited influence from the Southwest, they do provide greater insight into the variation found in Dismal River aspect ceramic assemblages and the influences other Plains groups may have had on this group.

Introduction

European colonization of the North American continent profoundly impacted the lives of Native Americans as they were exposed to new diseases, technologies, cultural practices and faced armed conflict and expulsion from their homelands. Most research on this colonial process focuses on locations where direct contact took place between European colonizers and Native Americans, such as along the east and west coasts and in the Southwest. During this Protohistoric period (A.D. 1450-1700), Native Americans living in the Great Plains faced profound social, demographic, and economic changes as the result of indirect contact with Europeans. Social and trading networks linked people living on the Plains with people in the Southwest, and as Puebloan groups experienced social and economic disruption stemming from Spanish colonization of their territory, many left their homes and migrated to the Plains bringing with them their cultural practices and technology. In one case, Puebloan people escaping Spanish oppression sought refuge with their Plains neighbors, and built a seven-room pueblo in western Kansas (Wedel 1959; Witty 1983). These Plains groups, recognized archaeologically as the Dismal River aspect (A.D. 1650-1725) in Nebraska, Kansas, Colorado, and Wyoming (Figure 1), were geographically and temporally situated to experience the indirect or down-the-line effects of Spanish colonialism in the Southwest. Dismal River aspect groups were poised at an important economic and social crossroads between the Southwest and Great Plains.

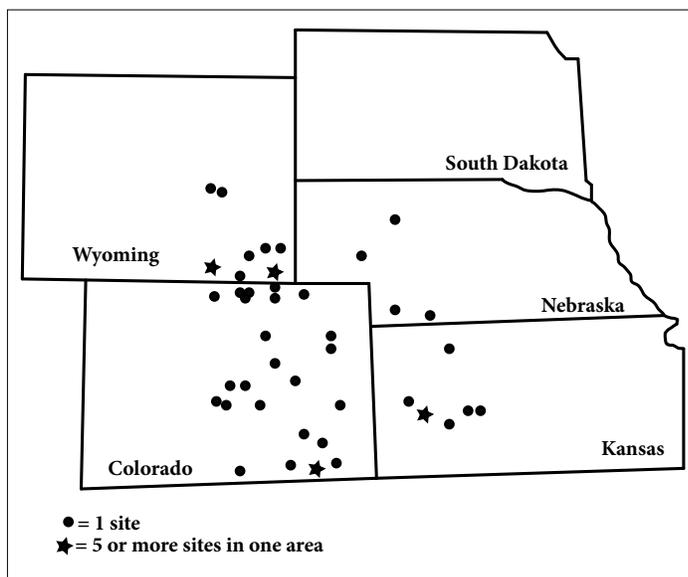


Figure 1. Distribution of excavated Dismal River aspect sites.

The research presented here outlines the results of an analysis of ceramics from four Dismal River aspect sites in Nebraska. Ceramics can serve as a window into social identity, cultural stability and change, and intra-group interactions. Ceramic production, style, and use are culturally unique. Potters living in the Southwest and the Plains had distinctive technological practices that can be used to determine if cultural knowledge and technology originating in the Northern Rio Grande region spread to Nebraska following the demographic collapse and dispersal of Puebloan groups during Spanish colonization.

Results from the analyses of ceramics from Dismal River aspect sites in Kansas indicate a strong connection existed between some Dismal River aspect people and Puebloan groups; several sites have high frequencies of Southwest trade wares and locally made copies of Northern Rio Grande vessel

forms. However, the re-analysis of ceramics from Nebraska (presented here) indicates limited contact and influence from the Southwest. Rather than finding the anticipated Southwestern trade ware sherds and locally made utilitarian copies of painted or polychrome Puebloan jar (such as short upright vessels) and bowl vessel forms, I found that these Nebraska groups shared more technological and stylistic characteristics with an earlier group found in the region, the Upper Republican culture (A.D. 1100-1350) (Macy 2009). Although it is still unclear how far the wave of indirect effects from Spanish colonization spread to the Plains, this ceramics analysis provides new information on the variation found in Dismal River aspect ceramic assemblages and greater insights into the influences other Plains groups had on Dismal River aspect people. This Nebraska research is part of a larger project that focuses on better understanding the identity of Dismal River aspect groups, the types and degree of variation found in their ceramic technology, and the long-distance repercussions of the Spanish colonization of the Southwest by examining whether all, or only a few, of these people were affected by shifting populations and economies in the Southwest.

Background Information

Beyond the Borders of Spanish Colonialism

During the Protohistoric period (A.D. 1450-1700) the Northern Rio Grande region was occupied by several Puebloan groups and Athapaskan speakers (proto-Apache and Navajo) who were involved in intensive exchange using long-distant networks for ceramics, obsidian, and foodstuffs (Cordell and Yannie 1991; Graves and Spielmann 2000). Evidence from archaeological sites at Pecos Pueblo (cherts, finished stone tools, bison scapulae) and on the Great Plains (painted pottery, obsidian, maize) indicate that these social and economic networks included people living on the Southern and Central Plains and this connection between the U.S. Southwest and the Great Plains likely existed for hundreds of years, if not millennia prior to European contact (Barr 2005; Brosowske and Bevitt 2006; Kidder 1932; Scheiber and Byrd Finley 2010; Wedel 1982). Ancestral and early modern pueblo peoples made a living as farmers in a region where there is a limited and irregular distribution of resources. Various forms of mobility were utilized to deal with these irregularities (Stark et al. 1995; Zedeno 1995) and Kulisheck (2003) argues the dispersed settlement pattern at the beginning of this period and much of the community abandonment seen after the Spanish colonized the region, is directly tied to residential mobility strategies long used by native peoples in response to changing environmental or social conditions.

Spanish explorers entered the Southwest in 1539, and the later imposition of Spanish rule, establishment of settlements, and missionization led to increased disease, violence, and the disruption of pueblo economic and subsistence practices through the appropriation of food surpluses and interference in trade (Kulisheck 2010; Spielmann et al. 2006, 2008). After 200 years of Spanish colonization, more than three fourths of the villages in the Rio Grande drainage of New Mexico were abandoned (Kulisheck 2003). Although demographic decline contributed to these abandonments, Native peoples also enacted long-held mobility practices to actively avoid Spanish rule and to maintain their autonomy and identity (Kulisheck 2003, 2010). This demographic movement and changes in trade networks led to intensified relationships between some Puebloan peoples and their Plains neighbors as larger numbers of people, rather than just their goods, were moving to the Plains (see Barr 2005 for a discussion of hybrid refuge communities in Texas during the Protohistoric period).

Resistance to Spanish interference culminated in the seventeenth century when pueblo leaders and many of their Apache allies organized the most successful indigenous revolt in the history of the colonization of North America (Herr and Clark 1997; Liebmann and Preucel 2007; Liebmann et al. 2005; Preucel 2000). In 1680, Native Americans in the Southwest drove the Spanish out of their territory and a new pan-Pueblo ethnic consciousness emerged as an expression of that resistance (Liebmann et al. 2005; Preucel 2000). The Revolt Period is characterized by cultural revitalization, population and settlement reorganization, diaspora and migrations, and ethnogenesis. Many new relationships formed throughout the Southwest following the revolt that blurred traditional linguistic-ethnic boundaries where Native peoples shared cultural and political struggles to create enduring identities following the radical change and discontinuity caused by Spanish colonization (Liebmann and Preucel 2007). The years following the revolt also witnessed one of the greatest episodes of migration and settlement reorganization in the history of the Southwest (Liebmann and Preucel 2007).

Many Pueblos, especially from Hopi, Jemez, Picuris, Pecos, and Taos pueblos migrated after the revolt, some moving as far away as the plains of modern day Kansas (Herr and Clark 1997; Liebmann and Preucel 2007). Groups in regular contact with the Spanish, and others living on the periphery were all connected through their pre-existing

social and trading networks and shared experiences of colonialism. Epidemic diseases, population movement and loss, and violence forced people to form new social groups to deal with the effects of Spanish colonialism (Anderson 1999). Navajo and other Apache groups were able to survive the challenges of colonization because they replaced, incorporated, and partially acculturated other native peoples from the region into their culture through fictive and kin affiliations (Anderson 1999; Kulisheck 2010).

Extensive evidence for cultural, economic, and demographic change in societies along the Northern Rio Grande exists, but it is less clear the extent to which these transformations impacted their neighbors and allies on the Central Plains. The Dismal River aspect presents an excellent case study to examine, given its placement on the edge of Puebloan exchange networks during the Protohistoric period (A.D. 1450-1750) (Figure 1). Strong evidence exists for the presence of hybrid Dismal River-Puebloan communities in western Kansas in the form of Puebloan and Dismal River aspect architecture and blended material culture and foodways (described in more detail below) (Beck and Trabert n.d.; Gunnerson 1960; Trabert 2011; Trabert and Hill n.d.; Witty 1983). Additional Dismal River aspect groups lived on the periphery of the Southwest colonial core and often do not appear as a homogenous archaeological culture. Previous researchers have equated this lack of cultural homogeneity with a poorly developed and short-lived cultural tradition and called for a re-definition of the Dismal River aspect (Gulley 2000; Opler 1971). However, a more nuanced examination of this group's geographic and temporal placement may point to the development of a blended or creolized community that reflects active indigenous resistance to Spanish colonial practices following Puebloan migration and the re-establishment of communities and social identity.

Dismal River culinary traditions and ceramic production can provide a window into the development of these new hybrid communities and how far new social and technological practices spread to the High Plains as pottery forms reflect foodways. These culinary practices can provide information on changing cultural practices, determine outside influence or the presence of migrants, and categorize social identity during this period of upheaval resulting from Spanish interference and native responses (Clark 2002; Dietler 1997, 2010; Mills 2004). This social identity, although often fluid and dynamic, is expressed in symbolically laden material correlates, which are used by people on a daily basis to assert their individual and group identities (Clark 2002). Pierre Bourdieu (1977, 1990) in his theory of Practice provided a model stating that people develop unconscious inclinations to behave in certain ways in certain settings and this set of culturally constructed behavioral norms is called *habitus*. Through daily practices, people structure their space and define the techniques used to produce items through stages of the *chaîne opératoires* and their unconscious manufacturing choices (*habitus*) is expressed in their material culture (Atalay and Hastorf 2006, Dietler and Herbich 1998, Lightfoot et al. 2010). These daily practices are part of a group's foodways and studying a group's culinary vessels has allowed researchers examining similar questions on the Southern Plains (Habicht-Mauche 1987; Spielmann 1983, 1996) and in other parts of the world (Dietler 1997, 2010; Lightfoot et al. 2010) to better understand how the daily lives, practices, and social identity of people can be directly and indirectly affected by population movements and acculturation.

However to date, no one has systematically examined ceramics from throughout the Dismal River aspect area to look at differences due to geography or culture contact (Brunswig 1995; Schleiser 1972). Additionally, data have not been collected or widely published on rim and vessel forms, vessel functions, and no sourcing studies have been attempted that examine a range of wares found at these sites. A re-examination of Dismal River aspect ceramics from Kansas and Nebraska (focusing on manufacturing practices, style and vessel forms) along with a review of technology and foodways at Northern Rio Grande pueblos was necessary to address issues regarding community development and hybridity during the Protohistoric period and is the focus of the research presented here.

Puebloan and Plains potters had different methods for manufacturing pottery and used different vessel forms in their preparation and serving of food. Assemblages in Northern Rio Grande sites tend to have many more bowls than sites on the Plains, as Plains' groups tended to favor jars for their preparation, cooking, and serving needs (Beck and Trabert n.d.). With regards to the extent of colonial impacts on the Plains, I would expect to find higher percentages of Puebloan manufacturing characteristics and a greater use of bowls rather than jars in the Dismal River aspect ceramics if they and Puebloan groups were in regular contact with each other. If when compared to other Plains' assemblages, I find that the Dismal River aspect ceramics do not show high frequencies of coiling, polishing, or vessel forms associated with the Southwest, then it is *less* likely that Puebloan migrants moved onto the High Plains in large numbers following Spanish persecution and the Pueblo Revolt in their homeland.

Dismal River aspect Site Background

The Dismal River aspect is an archaeological complex dating from A.D. 1650-1725 on the Central Plains of eastern Colorado, southeastern Wyoming, western Kansas, and western Nebraska (Gunnerson 1968) (Figure 1). People living in the Eastern portion of Dismal River aspect territory (Nebraska and Kansas) were semi-sedentary horticulturalists who relied mainly on bison for subsistence and who maintained relationships with their eastern Plains Village and Puebloan neighbors (Brunswig 1995; Gunnerson 1968; Schleiser 1972; Wedel 1959). Eastern Dismal River aspect sites take the form of semi-permanent villages, isolated houses, short-term campsites, and rockshelter occupations (Brunswig 1995; Gunnerson 1968; Hill and Metcalf 1942; Champe 1949; Strong 1935; Wedel 1959). Houses, when uncovered, are generally circular with five base posts and external roasting pits are often found (Gunnerson 1968). Short-term campsites, rather than larger village sites, tend to be more frequent in the western section of the territory (Colorado and Wyoming) and diagnostic ceramics are not as common. One possible exception is the Cedar Point Village site in eastern Colorado, excavated by Ray Wood, where seven shallow dwellings were excavated (Brunswig 1995; Cassells 1997). The structures and artifacts, however, do not match expectations for house shape or pottery found in Eastern Dismal River aspect sites and this cultural affiliation is uncertain. Small temporary structures have also been identified at the Eureka Ridge and Pinnacle sites in central Colorado along with diagnostic pottery more similar to Dismal River aspect ceramics found elsewhere (Gilmore and Larmore 2012). Many of these western Dismal River aspect sites appear to have been used as shorter-term hunting camps where horticulture was not emphasized and ceramics were not common, very similar to rockshelter sites in Nebraska. One such rockshelter site, 25GD2, along with three other large sites (25CH1, 25HN37, and 25HO21) excavated in Nebraska are the focus of this paper and are described below (Figure 2).

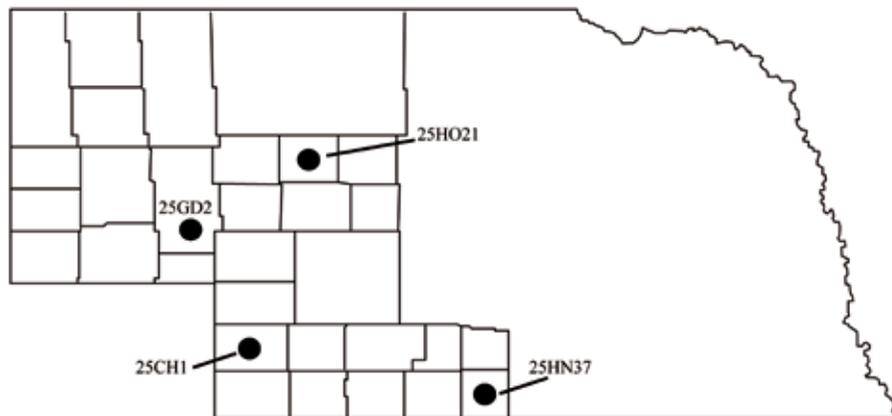


Figure 2. General location of sites included in this analysis.

The field season of 1939 saw the first archaeological work conducted in southwest Nebraska with the excavation of the Lovitt site (25CH1). A.T. Hill and George Metcalf wanted to establish a chronology for the region and to better understand the Dismal River aspect, which had been identified earlier by William Duncan Strong in 1935 (Strong 1935). The Lovitt Site is located in the sandhills of Chase County along Stinking Water Creek (Figure 2). Surface material was noted across a 75 acre spread and local collectors had previously collected thousands of artifacts from the area. Post holes dotted the area, but only three identifiable structures were excavated as well as numerous midden and roasting pits. Lithics and pottery were abundant at the site and a few possible plant processing groundstone implements were found (Hill and Metcalf 1942). Collections from this site are curated at the Nebraska Historical Society and at the Smithsonian Institution in Washington, D.C. This site, (25CH1) however, was not the only one excavated during this field season and was followed by Ash Hollow Cave (25GD2).

Ash Hollow is a short, steep-walled canyon 2.4 km southeast of Lewellen, Nebraska and was utilized by historic wagon trains carrying new settlers west along the Oregon Trail (Figure 2). Ash Hollow Cave (25GD2) is located approximately 400 meters into the canyon along the eastern wall and provided shelter for prehistoric Native Americans for thousands of years (Champe 1946). A.T. Hill and a small crew excavated the cave in 1939 and identified five stratified 'lenses' or occupation levels including a Dismal River aspect, Upper Republican, Woodland, and potentially earlier but unidentifiable components. Ceramics, lithics, and faunal remains were recovered from the three culturally identifiable levels, while the lower levels contained charcoal and non-diagnostic lithic debris (Champe 1946; Gunnerson 1968). The upper levels of the cave yielded large pieces of charcoal and were sent to Harry E. Weakly for dendrochronological analyses. He dated the uppermost (Dismal River aspect) level (lens A) to A.D. 1587-1684 plus 20 years for missing rings

(Champe 1946). This date range is similar to a dendrochronology date obtained from the Lovitt site of A.D.1674-1706 (Hill and Metcalf 1942).

Interest in the archaeology of western Nebraska continued. White Cat Village (25HN37) was identified by a Smithsonian Institution Missouri River Basin Survey crew in 1946 and was excavated by a University of Nebraska field school in 1948 (Champe 1949; Gunnerson 1968). The site is located in Harlan County, Nebraska approximately 9.5 km southeast of Alma, Nebraska (Figure 2). The site was quite large, occupying a 304 m by 76 m area, and contained the remains of at least four circular houses and numerous roasting and trash pits. Thousands of ceramics, lithics, and faunal remains were recovered as well as metal harness parts and a gun flint. Based on previous excavations (at 25CH1 and 14SC1) and ethnohistoric accounts of Spanish expeditions to the plains in the early 1700s, Champe concluded that 25HN37 may have been one of the last villages occupied by the Paloma Apache before conflict with the Pawnee drove them out of Nebraska after 1719 (Champe 1949).

The Humphrey site, 25HO21 was also first reported by a survey party during the Smithsonian Institution River Basin Surveys in 1947. The site is located on a terrace above the Middle Loup River about 8 km east of Mullen, Nebraska in Hooker County (Figure 2). Marvin F. Kivett, who had been in charge of the survey party, along with A.T. Hill returned to the site in 1949 with a small crew to test the edges of the site, which were being impacted by local gravel extraction operations (Gunnerson 1960). Several postholes, hearths, and possible lodge floors were identified but no definitive house patterns were recognized. Six large trash pits were excavated yielding hundreds of pottery sherds, lithics,

faunal remains, and one piece of unidentifiable metal. Of the 100 sherds examined by James Gunnerson in his MA thesis (1950), only one was identified as Upper Republican, the remainder fit expectations for Dismal River aspect ceramics (Gunnerson 1960).

Dismal River aspect Ceramics

The Lovitt Site (25CH1) became the type-site for the Dismal River aspect and the ceramics recovered from this site were used to define the pottery types for the entire aspect. Pottery was abundant at the site: the remains of four restorable vessels were recovered as well as thousands of sherds (see Figure 3 for example). The pottery was described as finely made, thin, dark in color, with fine sand temper and either smoothed or simple stamped (thin grooves left behind on the surface by the use of a cord-wrapped paddle) surfaces. Pots tended to have flaring rims and decoration, always on the lip included incised lines, rounded impressions, and herringbone incised patterns. The four reconstructed vessels are described as small to medium in size with approximately a one gallon capacity (Figures 3, 4). These jars are rounded with wide openings, straight to flaring rims, and moderately constricted necks (Hill and Metcalf 1942). No short upright or short inverted vessels, similar in form to Puebloan painted or polychrome pots, have been recovered from Dismal River aspect sites (Figure 4).



Figure 3. Dismal River aspect vessels. Top vessel (25CH1): Smithsonian Institution. Bottom vessel (25CH1): Nebraska State Historical Society.

Following the 1940s excavations in Nebraska, Metcalf examined ceramics from Ash Hollow Cave (25GD2) and sherds recovered by Strong from a number of sites in western Nebraska and compared them with those recovered from Lovitt. Metcalf concluded that there are three pottery types for Dismal River: Lovitt Plain, Lovitt Simple Stamped, and Lovitt Mica Tempered (Metcalf 1949). Later publications concerning this typology by Gunnerson

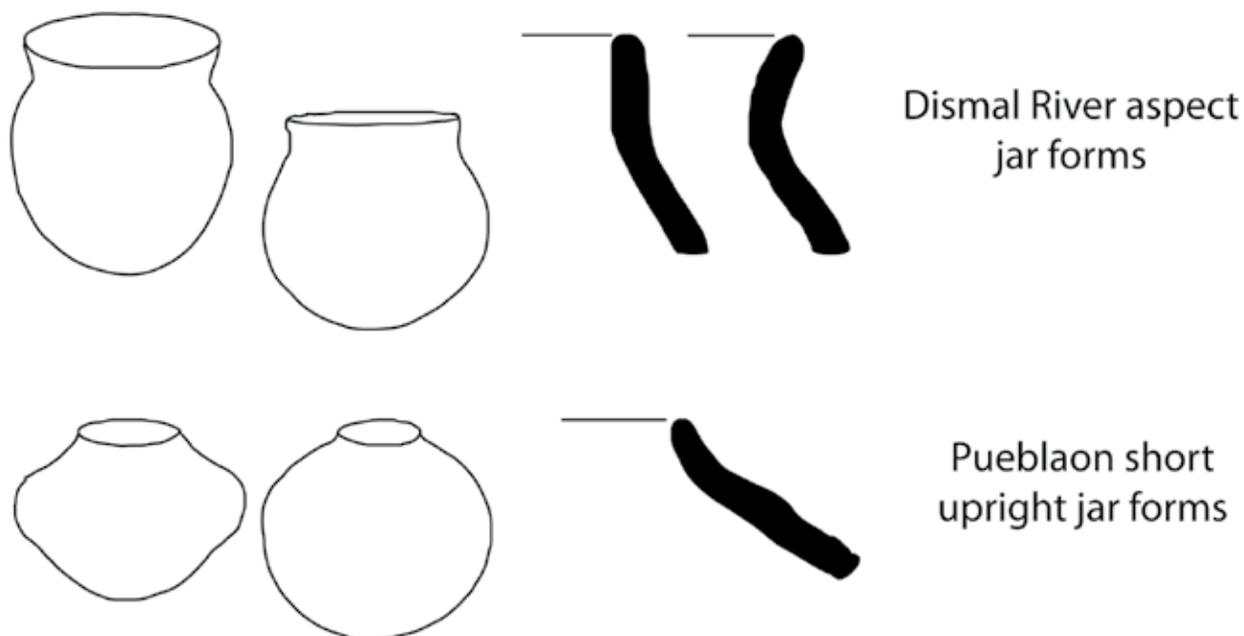


Figure 4. Common Dismal River aspect jars and Puebloan short upright jar forms (not to scale) (adapted from Beck and Trabert, n.d. Figure 4). Dismal River aspect forms: jars with flaring necks from 25CH1 (Gunnerson 1960: Plates 3d and 3e). Puebloan short upright jar forms (from left to right): Hawikuh Glaze-on-red jar, ca. 1630-1680 (Dittert and Plog 1980: figure 145); Powhoge Polychrome jar ca. 1750-1820 (Dittert and Plog 1980: Figure 162).

(1968), Brugge (1982), and Baugh and Eddy (1987) accept the Lovitt Plain and Lovitt Simple Stamped, but attribute the Lovitt Micaceous to Ocate Micaceous Wares, a Jicarilla Apache type found in Northeastern New Mexico (Brunswick 1995). Many of these researchers hypothesized that micaceous wares were acquired by Dismal River people, not through local production, but by trade with Jicarilla the and/or Taos and Picuris Pueblos.

Excavations from one of the other few well-excavated sites, the Scott County Pueblo (14SC01), has also yielded a large number of Dismal River aspect ceramics, most of which are very similar in paste characteristics and form to those recovered from the Lovitt Site (25CH1). In his 1939 excavation of the site, Waldo Wedel describes the Dismal River aspect pottery as “thin, hard, dark-colored ware, generally sand tempered; and mica tempered...sherds constituted a minority ware” (Wedel 1959:464). Most of the ceramics had smooth plain surfaces with a minor frequency of simple-stamped sherds, and were never polished or slipped. Decoration was infrequent and when present was confined to the lip. Wedel hypothesized that the sherds came from rounded jars with flaring rims and constricted necks with few other vessel forms present (Wedel 1959).

Recent evidence from the multicomponent Scott County Pueblo site, where the remains of a seven room Pueblo structure were found provides evidence for extended contact between the Southwest and Central Plains (Wedel 1959; Williston and Martin 1900; Witty 1971). My recent reanalysis of the ceramics collected from this site has yielded strong evidence for greater variety in the vessel forms and methods of manufacture at 14SC01 than previously identified. Beck and Trabert (n.d.) have found that a number of the supposedly ‘local’ Dismal River aspect ceramics from 14SC01 might have been made by Puebloan women living at the site who were attempting to maintain their traditional foodways by creating short necked upright jars and a large quantity of bowls. Additionally, a recent reanalysis of the ceramics from two other Dismal River aspect sites in the Scott County State Park (14SC304 and 14SC409) has shown the importance of more carefully investigating plain culinary ceramics, as over 50% of the previously classified Dismal River gray ware are in fact sherds of Southwest origin (Trabert 2011; Trabert and Hill n.d.). This focus on plain culinary vessels, vessel form, and method of manufacture has not been common to previous analyses of Dismal River aspect ceramics and it is possible that other sites within the locality also exhibit a greater Puebloan influence.

Research Design and Methodology

Research Objectives

Previous research has focused on the effects of colonialism on Native Americans living in or immediately adjacent to areas of European contact. In contrast, my research seeks to determine if Dismal River aspect people on the Plains also felt the effects of colonialism, albeit indirectly, as indicated by patterns in their ceramic assemblages. A sample of ceramics from four Nebraska Dismal River aspect sites were reanalyzed to address the following questions:

What is the extent of ceramic variability within the Dismal River aspect culture area? Did the people who occupied the Nebraska Dismal River aspect sites have the same ceramics as other Dismal River groups in Kansas, Colorado, and Wyoming?

If extensive variability exists, what is the source of the variation and does that relate geographic distance and/or changing demography during the Protohistoric period?

To what extent, if any, did Dismal River people living in Nebraska interact with Puebloans from the Southwest? Did Pueblo peoples migrate to Nebraska to escape Spanish persecution in their homelands?

Analytical Sample

Of the 248 known Dismal River aspect semi-permanent village or campsites in the U.S., there are at least 19 excavated sites in Nebraska. Of these, four sites were selected based on their large ceramic collections and associated documents. Sherds larger than 5cm² were selected for re-analysis and a total of 6,748 sherds were analyzed from 25CH1 (445 rims and 5,234 body sherds), 25GD2 (7 rims and 5 body sherds), 25HN37 (53 rims and 376 body sherds), 25HO21 (59 rims and 569 body sherds). All of these collections had been analyzed in the past; the Lovitt site as many as three times (Hill and Metcalf 1942; Gunnerson 1960; Gulley 2000) but previous researchers did not focus on recording or reporting information on vessel forms, manufacturing techniques, and the variation found in the collections.

Analytical methods

The ceramic assemblages from the sample sites were examined by recording measurements and observations for the sample of the body and rim sherds with a focus on rim and neck forms, vessel forms, and manufacturing techniques, as these types of data are most useful for studying a groups' foodways, interactions, and influences. Data collected from body sherds included paste composition and temper, surface treatment, and decoration location and type, while data on rim sherds included temper, surface treatment, decoration, rim form, rim height, and rim diameter (Figure 5). The minimum number of vessels present in each assemblage was estimated based on specific attributes including rim form, rim diameter, decoration, and paste (Rice 1987).

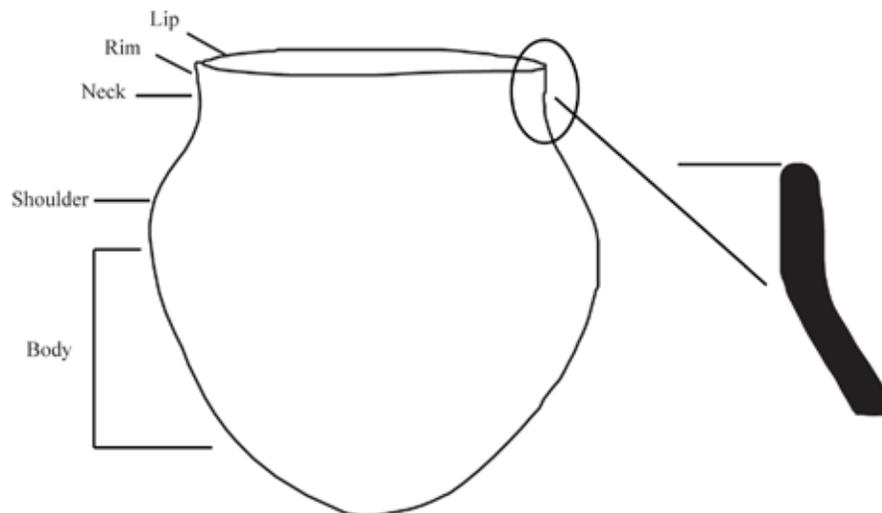


Figure 5. Location of sherd/vessel measurements with rim profile example inset.

Each sherd was examined macroscopically, with the aid of a 10x hand lens, to identify the type of temper used. Tempers are non-plastic materials that were intentionally added to the ceramic paste to increase workability such as sand or grit (lithic), crushed shell (recognized by thin platy pieces or voids) and micaceous (a silicate, lamellar, glossy, mineral) sands (Rice 1987; Wedel 1959). Surface treatment included simple stamped, smooth, burnished, and/or polished. Vessels can also be smoothed, leaving no exterior manufacturing marks, and may be burnished very lightly with a stone when the vessel is dry (Metcalf 1949). Burnished or lightly polished surfaces have not been described in publications on Dismal River aspect ceramics. This treatment is more commonly associated with polished interiors of bowls and polished exteriors of some jars (i.e. Kapo Black ware) from northern Rio Grande pueblos (Ellis and Brody 1964; Metcalf 1949; Wedel 1959; Wilson et al. 2010). Decorative treatments were recorded and consisted of finger impressions, finger pinching, fingernail indentation, and tool incising all along the lip and upper rim (Gunnerson 1960).

Rim form was recorded utilizing similar methodology as Beck and Trabert (n.d.) emphasizing rim/neck angles and included upright, everted, flaring, or inverted. Upright rims will be angled nearly upright with an angle between 95-85°, everted and flaring rims will have an angle less than 85°, and inverted rims will have an angle greater than 95° (Figure 6). Rim profiles were drawn for all of the rim sherds in the sample (Figure 5). Rim height was measured on sherds that contain a point of inflection and at least a part of the shoulder. Vessel forms could be determined from sherds large enough to suggest a general vessel shape as bowls have roughly equal maximum vessel diameters and heights while jars are restricted vessels with a maximum diameter less than their height (Beck and Trabert n.d.; Shepard 1974) (Figures 4, 5). Bowl to jar ratios can then be calculated based on the number of identifiable jars divided by the number of bowls.

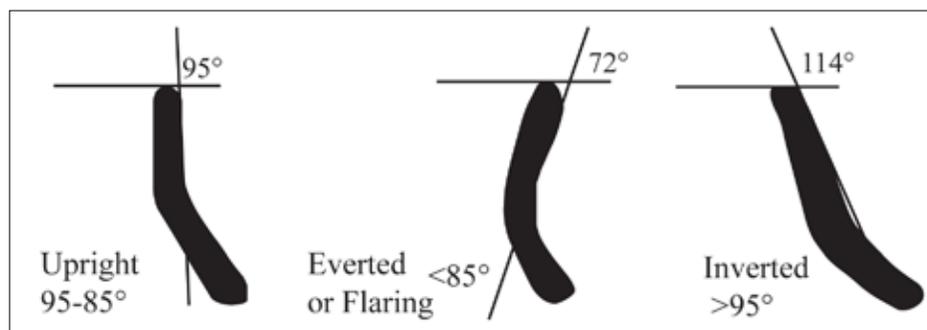


Figure 6. Examples of rim/neck shapes (upright, everted or flaring, and inverted) used for this study (adapted from Beck and Trabert n.d. figure 3).

Ceramic Analyses Results

My results point to a greater degree of variation within these collections than had been previously reported. The Lovitt Site (25CH1) is the most thoroughly studied Dismal River aspect site and all of the rim sherds, both in the Smithsonian Institution and Nebraska Historical Society collections, were examined totaling 445 sherds. A minimum of 37 vessels was estimated for this site. Quartz-feldspar sand was the dominate temper for this assemblage with 88% (n = 391) of the sherds possessing it in varying sizes. Minor frequencies of mica (n=4, .9%) and limestone (n=8, 1.8%) in the paste were also noted. With only one exception (a painted black-on-white sherd), 444 of the rims meet expectations for local pastes, but sourcing studies are forthcoming to verify a Plains origin. The most common exterior surface treatment was smoothing (n=388, 87%) (three with evidence of burnishing), and rim sherds with simple stamping (n=4, .9%) and smoothed simple stamping (n=51, 11%) were noted in minor frequencies which may seem odd as simple stamped ceramics are considered a diagnostic trait of Dismal River ceramics. Simple stamping, however, is generally confined to the body portions of vessels, which are described below.

The rim diameter was recorded for 144 of the 445 rim sherds with a range of 5 to 32 cm and a median of 13 cm. Vessel forms included flaring bowls (n = 4), inverted bowls (n = 16), flaring jars (n = 60), inverted jars (n = 3), and upright jars (n = 75). Miniature vessels were also present in the assemblage (n = 9), and one sherd from a water bottle; it was not possible to identify the vessel form or the remaining 277 sherds. The bowl to jar ratio was 0.14:1 pointing to a preference for jars for cooking, preparation, and serving food at this site.

Decoration was quite varied but did not occur in high frequencies in this assemblage. Decoration was present on 100 (22.5%) of the rim sherds but was limited to the lip portion of the vessels. Incised lines, cross hatched lines,

herringbone motifs, and a variety of finger and tool impressions were recorded. Flattened lips also occur in minor frequencies ($n=26$, 5.87%), many of which are decorated. The one non-local rim sherd is a slipped inverted black-on-white bowl, with three horizontal painted lines (carbon paint) just below the exterior lip with sand temper and no visible inclusions. Although the interior of this sherd is damaged, it may be an example of Santa Fe Black-on-White (A.D. 1170-1350) which originates in the Jemez Mountains and northern Rio Grande Basin (Wilson et al. 2010). This early sherd, if it is in fact Santa Fe Black-on-white, likely represents a curated piece as it predates the estimated occupation of the site (A.D. 1674-1706 [Hill and Metcalf 1942]). With this one exception, all other rim sherds from this assemblage are likely of local origin without evidence of any Puebloan influence in the form of vessel types or manufacturing techniques.

In total, 5,083 Dismal River aspect body sherds, 26 Upper Republican or Woodland sherds, and 5 buff colored sherds with northern Rio Grande characteristics (slipped surfaces, sometimes lightly polished, buff colored fine paste, sand temper, some volcanic tuff inclusions) were analyzed from the Lovitt site. Of the Dismal River aspect sherds, 99% were quartz-feldspar sand tempered ($n = 5,032$), 1% micaceous-sand tempered ($n = 51$), and none were coiled, painted, or decorated. Exterior surface treatment included smooth ($n = 4,450$), simple stamped ($n = 57$), smoothed over simple stamped ($n = 526$), and burnished ($n = 51$).

Although publications on Ash Hollow Cave (25GD2) state that 71 Dismal River aspect sherds were recovered from Lens A and B (Champe 1949), at the time of my analysis only seven rim and five body sherds could be positively identified from the collection, the remainder are thought to be from Woodland or Upper Republican groups, no sherds of Puebloan origin or form were identified. All seven rim sherds were quartz-feldspar sand tempered, ranged in color from light gray to dark brown and had smooth surfaces (two had polished exteriors). No slips, painting, coiling, or decoration were present. At least three different vessels were present in this assemblage; five of the sherds came from inverted bowls with an estimated diameter of 14 cm and two came from flaring bowls with an estimated diameter of 9 cm. Given the small sample for this collection, the bowl to jar ratio cannot be accurately stated. The body sherds from 25GD2 followed a similar pattern with all five having sand temper and ranging in color from light gray to dark brown. Three of the five had smooth surfaces while two were simple stamped.

Of the 229 rim sherds present in the collection from 25HN37 only 53 were deemed large enough for study. Quartz-feldspar sand temper dominated the assemblage except for one sherd with shell tempering. Color ranged from black to a light brown, 41 sherds had smooth surfaces and 12 were simple stamped. No slips, paints, or coiling were observed. Nine rim sherds had decoration on their lips, all consistent with expectations for Dismal River aspect decorative motifs (wide diagonal incised lines, oval impressions, and thin diagonal lines). Vessel forms included inverted bowls ($n = 1$), straight walled bowls ($n = 2$), flaring jars ($n = 5$), inverted jars ($n = 3$), upright jars ($n = 14$) and a number of jars with unidentifiable orientations ($n = 11$); it was not possible to estimate rim or vessel form from the remaining 17 rim sherds. No short upright jar forms were identified and the bowl to jar ratio for this site is 0.09:1 indicating a very strong preference for jars. Of the 2,356 body sherds from 25HN37, 376 were sampled for further analysis. Of these, 368 were tempered with quartz-feldspar sand, 5 with shell, and 3 with micaceous sands. Exterior surface treatments included smooth ($n = 170$), simple stamped ($n = 6$), smoothed over simple stamping ($n = 173$), and burnishing ($n = 17$). No slips, paint, or coiling were observed.

White Cat Village (25HN37) also yielded a few sherds that were decidedly not Dismal River aspect in origin. One rim sherd and seventeen body sherds were likely of Upper Republican construction due to their paste (large amounts of temper and large inclusions), thickness (thicker than Dismal River aspect pottery), surface treatment (ten were cord-roughened), and decoration (three body sherds had oblique trailed lines). The six sherds tempered with shell are not likely of Dismal River aspect origin either and may represent curated or traded Upper Republican or Nebraska Phase sherds. Previous analyses identified only five non-Dismal River sherds and did not attribute a cultural affiliation to them (Champe 1949; Gunnerson 1960).

The Humphrey Site (25HO21) collection also yielded a mixture of Upper Republican sherds ($n = 29$) (discussed below) and Dismal River aspect ceramics (total of 628). Of the 59 Dismal River aspect rim sherds analyzed, all were quartz-feldspar sand tempered, ranged in color from black to a light tan, and showed no evidence for slips, paint, or coiling. Rim diameters range from 10 cm to 18 cm and likely represent at least 7 different vessels. Surface treatment includes smooth ($n = 39$), simple stamped ($n = 3$), smoothed over simple stamped ($n = 15$), and burnished ($n = 2$). Lip decoration varied greatly (thin and wide diagonal incised lines, drill holes, nested triangles, rounded impressions, and flattened lips) with 23 of 59 sherds exhibiting some form of decorative motif. Vessel forms included flaring bowls ($n = 3$), upright bowls ($n = 4$), inverted bowls ($n = 2$), flaring jars ($n = 3$), upright jars ($n = 13$), inverted jars ($n = 4$), jars of

indeterminate orientation ($n = 8$), and indeterminate rim and vessel form ($n = 22$). No short upright jars were found in this assemblage. The bowl to jar ratio (0.32:1) is somewhat higher than at other Nebraska Dismal River aspect site pointing to a greater use of bowls in this group's foodways or at least to the greater preservation of bowl forms at this site.

The body sherds from 25HO21 also exhibited greater variation than previously reported including a number of different tempers and surface treatments. While most of the sherds were quartz-feldspar sand tempered ($n = 561$) a few were tempered with sand and limestone (or caliche) ($n = 3$), mica ($n = 4$), and shell ($n = 1$). Exterior surface treatments varied including smooth ($n = 231$), simple stamp ($n = 28$), smoothed over simple stamp ($n = 268$), burnished ($n = 37$), polished ($n = 3$), and cord-roughened ($n = 1$). Although there was no evidence for paint, coiling, or decoration, three body sherds were identified as non-local. One exotic sherd is from a corrugated vessel, a technique used on utilitarian vessels in New Mexico and Colorado (Pierce 2005). Two additional sherds were burnished with buff-colored paste and likely originated in the Tewa communities along the northern Rio Grande (Dr. David Hill, personal communication 2013). These buff sherds had exterior slips, fine sand temper, and volcanic tuff inclusions were observed under magnification. These sherds are likely Tewa in origin but they are small in size and petrographic analysis would be necessary to learn more about the community that created them. Although future plans include a more detailed characterization analysis of these exotic sherds, it can be stated that they likely originate from the northern Rio Grande region and were traded to Dismal River aspect groups in Nebraska. The small number of Puebloan sherds likely indicates down-the-line trade rather than regular, sustained, contact with the Puebloan groups, as we would expect to see higher frequencies of Southwestern trade wares or locally made copies of northern Rio Grande forms had Puebloan groups had more regular contact with people in Nebraska.

The Humphrey Site also yielded a number of Upper Republican sherds, something Gunnerson (1960) did not describe in his thesis as he only selected a small portion of the ceramics for his analysis ($n = 100$). Fifteen rim sherds and fourteen body sherds were identified as Upper Republican based on similar criteria as described for 25HN37. These sherds likely came from at least seven different vessels (based on rim diameters, decoration, and appearance), which is a significant number of vessels. It is unlikely that these sherds were simply picked up by Dismal River aspect people as oddities to curate, rather these sherds most likely indicate the presence of an earlier component at the site (the sherds came from a loose cluster in the northwest and were scattered across the east-central part of the site). A second possibility is that Dismal River aspect and Upper Republican groups were closer in time to each other than previously believed and these sherds represent interaction between these two peoples.

Discussion and Conclusions

The ceramics from these four Dismal River aspect sites in Nebraska have provided new information regarding the technological and stylistic variation found within this aspect and details regarding the nature and extent of this group's interactive sphere. Spanish colonialism certainly affected the lives of Native Americans in the Southwest and as Puebloan people moved outside of their homelands seeking refuge on the Plains, they brought with them their own cultural and technological practices. In western Kansas, recent re-analyses of ceramics recovered from the Scott County Pueblo site (14SC1) and two other nearby sites (14SC304 and 14SC409) has uncovered evidence for intensive interactions between Dismal River and Puebloan groups. 14SC1 has yielded evidence for not only Southwestern trade wares, but also Puebloan potters themselves in the form of locally made copies of northern Rio Grande vessel forms (short upright jars) and a preference for bowls over jars for the preparation and serving of food. Pottery from the other two western Kansas sites also includes Southwestern trade wares and a preference for bowls rather than jars in their foodways, but no locally made copies of Puebloan pots were identified. Although further research is necessary to tease out what exactly these ceramics can tell us about Dismal River/Puebloan interactions and the possibility for the development of new communities of practice during the Protohistoric period, there is clear evidence that ceramics can be used to better understand how colonization and population dispersal impacted the maintenance and creation of social groups.

Despite evidence for indirect effects of Spanish colonialism on Dismal River aspect people living in Kansas, the ceramics from similar sites in Nebraska yielded less evidence for contact with and influence from the Southwest. Seven sherds with buff-colored paste (likely from the Tewa community; five from 25CH1, two from 25HO21), one curated painted black-on-white sherd (possibly Santa Fe Black-on-white) (25CH1), and one corrugated sherd (25HO21) were the only identifiable Puebloan sherds recovered from these four sites. Although coiling was not a manufacturing technique found at any of these Nebraska sites, a higher than expected number of sherds had very finely burnished, and in some cases polished, exterior surfaces. A total of 111 sherds were burnished from 25CH1, 25HN37, and 25HO21 and 3 sherds had polished exteriors from 25HO21. Although burnishing does appear in Central Plains ceramic assemblages,

this practice has not been mentioned in previous descriptions of Dismal River aspect ceramics and this surface finish technique as well as the polished sherds may be indicative of influence from outside groups. Polishing is a trait much more common to the Southwest (Wedel 1959), but the low frequency of these sherds in Dismal River aspect sites makes it difficult to conclusively state whether this is evidence for interaction between Plains and Southwest potters or for the copying of Southwest manufacturing techniques by Plains potters based on their observance of non-local trade vessels.

A thorough examination of the vessel forms from these sites suggests that Dismal River aspect groups did not copy vessel forms found in the northern Rio Grande area, such as the short upright jar forms (Figure 4), and generally preferred to use jars in their foodways. The methods by which potters created their vessels and the ways in which people used those pots are part of that society's unconscious practices and foodways preferences can be very symbolically charged and used to assert membership. Even in mixed cultural settings or learning communities, although the types of food that are consumed may change, the utilitarian vessels used by migrants to prepare, cook, and serve that food were part of the unconscious habitus of their natal domestic sphere and would be resistant to change (Gumerman 1997; Stark et al. 1998; Twiss 2007). This analysis shows that these practices, although present in the Southwest and likely in Dismal River aspect sites in Kansas, do not appear in western Nebraska sites. The presence of the northern Rio Grande sherds clearly shows that both painted and utilitarian vessels somehow traveled from northern New Mexico to Nebraska, but based on this limited evidence it is unlikely that Puebloan *people* traveled to Nebraska to join Dismal River aspect communities in any great numbers or for long periods of time.

Despite the lack of evidence for intensive contact between Dismal River aspect people living in Nebraska with northern Rio Grande groups, these Dismal River aspect people and Upper Republican groups seemed to have targeted similar areas for occupation in Nebraska. All four of the sites examined in this research yielded a number of Upper Republican ceramics, however, except for the Ash Hollow Cave excavation, it is not possible to determine from existing excavation records if these ceramics came from an older component at the site. If the Upper Republican materials did not come from an older occupation of the site (the Upper Republican culture dates to A.D. 1100-1350 [Macy 2009], while Dismal River dates to A.D. 1650-1725) then Dismal River aspect people were finding and curating Upper Republican ceramics (unlikely given the numbers) or these vessels came from trade between these two supposedly non-contemporaneous groups. Unfortunately, detailed provenience information is lacking for the Southwestern sherds and it is difficult to determine with certainty which component these, often early, sherds originated. The time frame for the Dismal River aspect in Nebraska was established using a few dendrochronological dates and has not been tested using alternative techniques. Gilmore and Larmore (2012:46) have recently investigated the Dismal River aspect in Colorado and have expanded the possible period of occupation to A.D. 1300-1650 (using ¹⁴C and AMS dating) which briefly overlaps with the accepted date range for Upper Republican occupation of the Central Plains. I do not assert, however, that there was any sort of cultural continuity between Upper Republican and Dismal River aspect groups. A temporal overlap indicates that these people may have interacted with each other and possibly even shared marriage partners and/or captives, but at this time there is not strong enough evidence to indicate that the Upper Republican culture "turned-into" the Dismal River aspect. In other areas of the Great Plains, where complex cosmopolitan or blended communities developed, researchers have identified transitional pottery types (see Baugh 1982 for detailed descriptions on the Southern Plains) or the adoption of new manufacturing practices and vessel forms (such as at 14SC1). Despite the presence of a few shell and limestone sherds recovered from 25HO21 and 25HN37, there is not enough evidence to state that Upper Republican people had a *significant* impact on the development of Dismal River aspect culture.

In conclusion, the ceramics from 25CHI, 25GD2, 25HN37, and 25HO21 have provided new information regarding the variability of Dismal River aspect technology and some interesting possibilities for a closer association with Upper Republican groups in the region. Social identities during the Protohistoric period were much more fluid than the culture boundaries drawn by archeologists allows for and Dismal River aspect people in Kansas clearly had a strong relationship with Puebloan groups. Disruption stemming from the colonization of their territory in the Southwest by Spaniards did have an effect on these peripheral Dismal River aspect groups as Puebloans moved onto the Plains bringing their culture and technology with them. However, based on the ceramic evidence described here, it does not appear that Dismal River aspect groups in Nebraska felt the same impacts as their Kansan counterparts. Dismal River aspect social identity was dynamic and these people adapted over time and as influence and contact with outside groups ebbed and waned. This fluidity in social identity and practices translates to variation in technology and within the archaeological record. Although past researchers have often referred to western Nebraska as the heartland for the Dismal River aspect, archeologists must recognize that the geographic and social boundaries we have drawn around this group may not be complex enough to account for the rapid social, economic, political, and demographic changes seen during the Protohistoric period. Cultural and technological variability should be highlighted rather than assigned

to the appendices of reports. My future research includes analyzing Dismal River aspect ceramics from Colorado and Wyoming so that comparisons can be made between the western and eastern portions of Dismal River aspect territory which should allow us to broaden our understanding of Dismal River aspect society, technology, and most importantly, how this culture dealt with their changing and varied social landscape.

Acknowledgments

I would like to first thank the Nebraska Historical Society for funding this research and for allowing me access to the collections described here. I would especially like to thank Trisha Nelson for facilitating my visit and providing me with invaluable assistance and information for my project. I would also like to thank the Smithsonian Institution for providing funding and access to their collection from 25CH1. Lastly, I would like to extend my appreciation to Dr. Timothy Baugh, an anonymous reviewer, Dr. Margaret Beck, and Christian Haunton for reading my manuscript and providing excellent advice to make it a stronger piece.

REFERENCES

- Anderson, Gary Clayton
1999 *The Indian Southwest 1580-1830*. University of Oklahoma Press, Norman.
- Atalay, Sonya and Christine A. Hastorf
2006 Food, Meals, and Daily Activities: Food Habits at Neolithic Catalhoyuk. *American Antiquity* 71(2):283-319.
- Barr, Juliana
2005 Beyond their Control: Spaniards in Native Texas. In *Choice, Persuasion, and Coercion: Social Control on Spain's North American Frontiers*, edited by Jesus F. de laTeja and Ross Frank, pp.149- 177. University of New Mexico Press, Albuquerque.
- Baugh, Timothy G. (with contributions by Susan Thomas Baugh, Jack L. Hofman, Fern E. Swenson, and Don G. Wyckoff.
1982 *Edwards I (34BK2): Southern Plains Adaptations in the Protohistoric Period*. University of Oklahoma, Oklahoma Archaeological Survey, SOP.
- Baugh, Timothy, G. and Frank W. Eddy
1987 Rethinking Apachean Ceramics: The 1985 Southern Athapaskan Ceramics Conference. *American Antiquity* 52(4): 793-798.
- Beck, Margaret E. and Sarah Trabert
n.d. Puebloan Occupation of the Scott County Pueblo, Western Kansas. *American Antiquity*, in Press.
- Bourdieu, Pierre
1977 *Outline of a Theory of Practice*. Cambridge University Press Cambridge. 1990 *The Logic of Practice*. Stanford University Press, Stanford.
- Brosowske, Scott D. and Tod C. Bevitt
2006 Looking South: The Middle Ceramic Period in Southern Kansas and Beyond. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 180-205. University of Kansas Press, Lawrence.
- Brugge, David
1982 Apache and Navajo Ceramics. *The Arizona Archaeologist* 15: 279-299.
- Brunswig, Robert H., Jr.
1995 Apachean Ceramics in Eastern Colorado: Current Data and New Directions, pp. 172-207 in *Archaeological Pottery of Colorado: Ceramic Clues to the Prehistoric and Protohistoric Lives of the State's Native Peoples*, edited by Robert H. Brunswig Jr., Bruce Bradley, and Susan M. Chandler. Colorado Council of Professional Archaeologists, Occasional Papers No. 2, Denver, Colorado.
- Cassells, E. Steve.
1997 *The Archaeology of Colorado*, revised edition. Johnson Books, Boulder, Colorado.
- Champe, John. L.
1946 *Ash Hollow Cave: A Study of Stratigraphic Sequence in the Central Great Plains*. University of Nebraska Studies.

1949 White Cat Village. *American Antiquity* 14:4 (285-292).
- Cordell, Linda S., and Vincent J. Yannic
1991 Ethnicity, Ethnogenesis, and the Individual: A Processual Approach Toward Dialogue. In *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*, edited by Robert W. Preucel, pp. 96-107. Center for Archaeological Investigations: Southern Illinois University at Carbondale, Occasional Paper No. 10.

Clark, Jeffrey

- 2002 Tracking Cultural Affiliation: Enculturation and Ethnicity. *Identity, Feasting, and the Archaeology of the Greater Southwest*. Edited by Barbara J. Mills. University Press of Colorado, Boulder: 42-73.

Dietler, Michael

- 1997 The Iron Age in Mediterranean France: Colonial Encounters, Entanglements, and Transformation. *Journal of World Prehistory* 11(3):269-357.
- 2010 *Archaeologies of Colonialism: Consumption, Entanglement, and Violence in Ancient Mediterranean France*. University of California Press, Berkeley.

Dietler, Michael and Ingrid Herbich

- 1998 *Habitus, Techniques, Style: An Integrated Approach to the Social Understanding of Material Culture and Boundaries. The Archaeology of Social Boundaries*. Edited by Miriam. T. Stark. Smithsonian Institution Press Washington D.C.: 232-263.

Dittert, Alfred E., Jr., and Fred Plog

- 1980 *Generations in Clay: Pueblo Pottery of the American Southwest*. Northland Press, Flagstaff, Arizona.

Ellis, Florence Hawley, and J. J. Brody

- 1964 Ceramic Stratigraphy and Tribal History at Taos Pueblo. *American Antiquity* 29:316-327.48 Espinosa, J. Manuel, editor and translator

Gilmore, Kevin P. and Sean Larmore

- 2012 Looking for Lovitt in all the Wrong Places: Migration Models and the Athapaskan Diaspora as Viewed from Eastern Colorado. In *From the Land of Ever Winter to the American Southwest: Athapaskan Migrations, Mobility, and Ethnogenesis*, edited by Deni J. Seymour, pp. 37-77. University of Utah Press, Salt Lake City, Utah.

Graves, William B. and Katherine A. Spielmann

- 2000 Leadership, Long-Distance Exchange, and Feasting in the Protohistoric Rio Grande. In *Alternative Leadership Strategies in the Prehispanic Southwest*. Edited by Barbara J. Mills, pp. 45-59. University of Arizona Press.

Gulley, Cara

- 2000 *A Re-analysis of Dismal River Archaeology and Ceramic Typology*. Unpublished MA thesis submitted to University of Colorado, Boulder.

Gumerman, George IV

- 1997 Food and Complex Societies. *Journal of Archaeological Method and Theory* 4(2): 105-139.

Gunnerson, James H.

- 1950 The Dismal River aspect. Unpublished MA thesis, Department of Anthropology and Sociology. University of Nebraska, Lincoln.
- 1960 An Introduction to Plains Apache Archaeology—The Dismal River aspect. *Bureau of American Ethnology Bulletin* 173. Anthropological Papers No. 58, pp. 131-260.
- 1968 Plains Apache Archaeology: A Review. *Plains Anthropologist* 13(41): 167-189

Habicht-Mauche, J.

- 1987 Southwest-Style Culinary Ceramics on the Southern Plains. *Plains Anthropologist* 32(156): 175-189.

Herr, Sarah and Jeffery J. Clark

- 1997 Patterns in the Pathways: Early Historic Migrations in the Rio Grande Pueblos. *Kiva* 62(4): 365-389.

- Hill, A.T. and George Metcalf
 1942 A Site of the Dismal River aspect in Chase County, Nebraska. *Nebraska History, A Quarterly Magazine* 22(2):158-226.
- Kidder, Alfred V.
 1932 *The Artifacts of the Pecos*. Yale University Press.
- Kulisheck, Jeremy
 2003 Pueblo Population Movements, Abandonment and Settlement Change in Sixteenth and Seventeenth Century New Mexico. *Kiva* 69(1): 30-54.
- 2010 "Like Butterflies on a Mounting Board" Pueblo Mobility and Demography before 1825. In *Across a Great Divide: Continuity and Change in Native North American Societies, 1400-1900*. Edited by Laura L. Scheiber and Mark D. Mitchell, pp. 174-191. The University of Arizona Press, Tucson.
- Liebmann, Matthew, T.J. Ferguson, Robert W. Preucel
 2005 Pueblo Settlement, Architecture, and Social Change in the Pueblo Revolt Era, A.D. 1680 to 1696. *Journal of Field Archaeology* 30(1):45-60.
- Liebmann, Matthew and Robert W. Preucel
 2007 The Archaeology of the Pueblo Revolt and the Formations of the Modern Pueblo World. *Kiva* 73(2):195-217.
- Lightfoot, Kent G., Antoinette Martinez, and Ann M. Schiff
 2010 Daily Practice and Material Culture in Pluralistic Social Settings: An Archaeological Study of Culture Change and Persistence from Fort Ross, California. In *Contemporary Archaeology in Theory: The New Pragmatism*, edited by Robert W. Preucel and Stephen A. Mrozowski. Wiley-Blackwell Publishers: 191-215.
- Macy, Jennifer N.
 2009 A Study of the Variability of a Medicine Creek Upper Republican Lithic Assemblage. *Plains Anthropologist* 54:301-333.
- Metcalf, George
 1949 Three Pottery Types from the Dismal River aspect. *Proceedings of the Fifth Plains Conference for Archaeology*. Notebook No. 1, Laboratory of Anthropology, University of Nebraska, pp. 73-78.
- Mills, Barbara
 2004 Identity, Feasting, and the Archaeology of the Greater Southwest. *Identity, Feasting, and the Archaeology of the Greater Southwest*. Edited by Barbara. J. Mills. University Press of Colorado, Boulder: 1-26.
- Opler, M. E.
 1971 Pots, Apache, and the Dismal River Cultural aspect. *Apachean Cultural History and Ethnology*. Edited by Keith H. Basso and Morris E. Opler. University of Arizona Press, Tuscon.
- Pierce, Christopher
 2005 The Development of Corrugated Pottery in Southwestern Colorado. *Kiva* 71(1): 79 100.
- Preucel, Robert W.
 2000 Making Pueblo Communities: Architectural discourse at Kotyiti, New Mexico. In *The Archaeology of Communities: A New World Perspective*, edited by Marcello A. Canuto and Jason Yaeger, Routledge Press: London and New York, pp.58-77.
- Rice, Prudence. M.
 1987 *Pottery Analysis: A Sourcebook*. The University of Chicago Press, Chicago, IL.

- Scheiber, Laura L. and Judson Byrd Finley
 2010 Mountain Shoshone Technological Transitions across the Great Divide. In *Across a Great Divide: Continuity and Change in Native North American Societies, 1400-1900*. Edited by Laura L. Scheiber and Mark D. Mitchell, pp. 128-148. The University of Arizona Press, Tucson.
- Schleiser, K. H.
 1972 "Rethinking the Dismal River aspect and the Plains Athapaskans, A.D. 1692-1768." *Plains Anthropologist* 17(56): 101-133.
- Shepard, Anna O.
 1974 *Ceramics for the Archaeologist*. Carnegie Institution of Washington, Washington, D.C.
- Spielmann, Katherine A.
 1983 Late Prehistoric Exchange Between the Southwest and Southern Plains. *Plains Anthropologist* 28(102): 257-272.
 1996 Exchange and Evolution: Themes in the Study of Plains-Pueblo Relations. In *Interpreting Southwest Diversity: Underlying Principals and Overarching Patterns*. Edited by Paul R. Fish and Jefferson Reid. Arizona State University Research Papers No. 48: 35- 40.
- Spielmann, Katherine A., Tiffany Clark, Diane Hawkey, Katharine Rainey, Suzanne K. Fish
 2008 "...being weary, they had rebelled": Pueblo subsistence and labor under Spanish colonialism. *Journal Of Anthropological Archaeology* 28:102-125.
- Spielmann, Katherine A., Jeannette L. Moley-Tanaka, and James M. Pottery
 2006 Style and Resistance in the Seventeenth Century Salinas Province. *American Antiquity* 71(4): 621-647.
- Stark, Miriam T., Jeffery Clark and Mark D. Elson
 1995 Causes and Consequences of Migration in the 13th Century Tonto Basin. *Journal of Anthropological Archeology* 14:212-246.
- Stark, Miriam. T., Mark D. Elson, and Jeffrey J. Clark
 1998 Social Boundaries and Technical Choices in Tonto Basin Prehistory. *The Archaeology of Social Boundaries*. Edited by Miriam T. Stark. Smithsonian Institution Press Washington D.C.:208-231.
- Strong, W. D.
 1935 *An Introduction to Nebraska Archaeology*. Smithsonian Miscellaneous Collections 93(10).
- Trabert, Sarah
 2011 14SC409 Ceramic Analysis. *Kansas Anthropologist* 32:19-22.
 Trabert, Sarah and Matthew E. Hill
 n.d. Waldo Wedel, The Scott County Pueblo Site (14SC1), Continuing Questions of Dismal River aspect Identity, and the Effects of Colonialism During the Protohistoric Period (1450-1700). In *Examining Waldo Wedel's Legacy to Central Plains Archaeology*, edited by Donna Roper, volume in preparation.
- Twiss, Katheryn
 2007 We are what we eat. *The Archaeology of Food and Identity*. Edited by Katheryn. C. Twiss, Center for Archaeological Investigations, Southern Illinois University Carbondale. Occasional Papers no 34.
- Wedel, Waldo R.
 1959 An Introduction to Kansas Archaeology. *Bureau of American Bulletin* 174. Smithsonian Institution, Washington, D.C.
 1982 Further Notes on Puebloan-Central Plains Contacts in Light of Archaeology. In *Pathways to Plains Prehistory: Anthropological Perspectives of the Plains Natives and Their Past. Papers in Honor o Robert E. Bell*, edited by Don G. Wyckoff, and Jack L. Hoffman, pp. 145-152. Oklahoma Anthropological Society.

Williston, Samuel W. and H. T. Martin

- 1900 Some Pueblo Ruins in Scott County, Kansas. *Transaction of the Kansas State Historic Society, 1897-1900* 6: 124-130.

Wilson, Gordon P. (with contributions by Leslie Cohen, Stu Patterson, and Carole Gardner)

- 2010 *The Ceramics of Northern Rio Grande Valley and Galisteo Basin to AD 1700*. Santa Fe, New Mexico.

Witty, Thomas A., Jr.

- 1971 Archaeology and Early History of the Scott Lake State Park Area. *Kansas Anthropological Association Newsletter* 16(5): 1-5.

- 1983 An Archaeological Review of the Scott County Pueblo, *Bulletin of the Oklahoma Anthropological Society* 32: 99-106.

Zedeno, Maria Nieves

- 1995 The Role of Population Movement and Technology Transfer in the Manufacture of Prehistoric Southwestern Ceramics. In *Ceramic Production in the American Southwest*, edited by Barbara J. Mills and Patricia L. Crown, pp.115-141. University of Arizona Press, Tuscon.

