

# Journal of Undergraduate Research in Anthropology

Volume III

Summer 2019



# Journal of Undergraduate Research in Anthropology

## Volume III, 2019

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# From the Editors

## Welcome!

All articles in this volume were part of an external peer-review process, with each submission reviewed by two anonymous reviewers. We thank those reviewers for their contribution.

We hope you enjoy contributions in this volume.

Duncan P. McKinnon and Lynita Langley-Ware

## Vol. III, 2019 Editors

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Please submit the following to dmckinnon@uca.edu

- a PDF file of the complete submission (following **American Antiquity** style)
- OR a Word file containing the complete paper (i.e., including abstract, tables and figures)
- OR a Word file containing the text, references, table and figure captions, plus an individual file of each figure (600 dpi) and/or table.
- Excel file of tables is preferred.

# (Mis)Understanding Leetown: Archaeological Investigations of 19th Century Consumerism and Historical Narratives of Arkansas 'Hillbillies'

K. Michaela Conway, *University of Arkansas*

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*"And this pervasive otherness, this recognition that the sidelines were made for such as us, often manifests itself in intensive and sometimes myopic self-scrutiny." - Brooks Blevins (2009:9)*

## Introduction

Perceptions of a group often stem from an historical narrative filled with overgeneralizations and misinterpretations that bend and shift over time. Rural Arkansans have faced stereotypes for decades focusing on their intellectual capacities, hygiene, and self-value. In Leetown, a former hamlet on the Pea Ridge battlefield in northwest Arkansas, students participating in the 2017 University of Arkansas Archeological Field School uncovered artifacts that defy this stereotype. They revealed a community regularly participating in consumer practices that were sweeping across the United States in the late nineteenth and early twentieth centuries. The group that occupied Leetown regularly participated in these new consumer habits.

Stereotypes can be challenged by the material past that is represented through archaeology. The discipline uncovers information about people who once inhabited an area, and it assists with the identification of stereotypes versus physical evidence of lifestyle. The data presented here reflects results from the 2017 University of Arkansas Archeological Field School. Additional excavations continue at Leetown as a part of the collaborative project with the National Park Service, and further results will be presented.

The primary objective of this article is to highlight the lifestyle characteristics of those who occupied Leetown in the late nineteenth and early twentieth centuries. The consumer behaviors associated with the artifacts recovered at the site signify narratives that do not align with the popular depiction of rural Arkansans. Archaeology can be used to differentiate historical narrative from physical occurrences. For this reason, I specifically engage with the artifacts found mainly in Feature 2 in the Leetown hamlet. The glass bottles excavated from this feature exemplify its residents' participation in consumerism in the late nineteenth century. American industrialization allowed for a larger system of exchange and consumption for the residents of Leetown.

## Pea Ridge National Military Park

The 4,000 acre area that is Pea Ridge National Military Park has been thoroughly researched by historians and archaeologists for its prehistoric and historic importance. Archaeologists identified temporary prehistoric human occupation in the park dating to 10,000 BP (Kay and Herrmann 2005). Excavated stone tools likely date to the late Archaic or Woodland period, and they were used for hunting purposes by a group that did not occupy the site for long. It is believed to also include a pre-Clovis occupation of Native American groups due to previous excavations, although no material culture has been recovered on site to indicate this (Pea Ridge National Military Park 2014:2-5). The Archaic period began about 10,000 BP and was characterized by increased populations and the beginning of crop domestication. Beginning at 2,500 BP, the Woodland period can be identified by ceramic style and a mixture of agriculture and hunting and gathering. Mississippian Period artifacts have also been encountered at Pea Ridge National Military Park. (Pea Ridge National Military Park 2014)

European Americans began to permanently reside in this area in the early 1800s, following the 1830 Indian Removal Act and the Trail of Tears. As they settled, the land was transformed as "once sparse woodlands developed into an agrarian landscape of cultivated fields and farms connected by a road system" (Pea Ridge National Military Park 2014:9). In 1840, John W. Lee founded the hamlet of Leetown. The number of buildings present differ on historic maps, but research is ongoing to pinpoint these structures and their purposes in order to gain an understanding of residential life in Pea Ridge during the Civil War era. It has been documented that Leetown functioned as a field hospital during the Battle of Pea Ridge (Pea Ridge National Military Park 2014).

Known as the Gettysburg of the West, the Battle of Pea Ridge occurred on March 6, 1862. This battle was primarily a conflict over the control of Missouri. The Federals had control over St. Louis, but their primary mission involved disbanding the pro-Confederate organization called the Missouri State Guard, which was based in Springfield, Missouri (Carlson-Drexler et al. 2008:1). Numerous fatalities occurred over the course of the two day battle.

The conclusion of the Battle of Pea Ridge was “the high water mark for the Confederate war effort in the Trans-Mississippi” (Shea 1994:35). After a confused engagement on the first day, soldiers on both sides attempted to regroup, but the Confederates were exceedingly low on food and ammunition. When Confederate resistance waned due to their shortage of weaponry, U.S. General Samuel R. Curtis used his artillery for a two-hour long, close-range barrage. After that, Federal infantry advanced, compelling Confederate Major General Earl Van Dorn to order a retreat and abandoned many injured Confederate troops. This left Curtis and the Federals with the upper hand, but losses were steep on both sides.

To preserve the battlefield, Pea Ridge National Military Park was founded in 1956 by Congress, who envisioned that the site would be restored to how it appeared during the Civil War. The park includes a variety of historic locations, including a section of the Trail of Tears and numerous prehistoric sites. The 4,000 acre park also “encompasses nearly ninety percent of the combat sites of the Battle of Pea Ridge” (Pea Ridge National Military Park 2014:2). It is primarily focused on the years 1862-1865 because of the clashes that occurred between Confederate and Federal troops during this time. The land was purchased by the State of Arkansas in 1960 and given to the National Park Service for historic preservation. Since 1969, the Pea Ridge National Military Park has been on the National Register of Historic Places. However, no buildings or sites are specifically identified on the register (Carlson-Drexler et al. 2008:5).

The preservation and re-creation of the mid-1800s landscape is a primary mission of the park. Because of this, in the 1960s, many buildings in the area were demolished if they were not considered to be Civil War related. A few roads and structures remained or were rebuilt, including Elkhorn Tavern and Telegraph Road, but the tavern was later damaged due to arson after the original had been replaced. The National Park Service continues to expand its outreach regarding residential life at Leetown and through support of the archaeological investigations that have taken place at the park. The 2017 field school furthered those efforts and was part of a four-year ongoing collaboration between the Arkansas Archaeological Survey and the National Park Service.

### **Ozark Background**

A lengthy narrative exists surrounding the hillbilly, backwards, primitive, idle “Arkansawyer.” This perception has created an inferiority complex that is held closely by some Arkansans, and it results in a response of cultural defensiveness (Blevins 2009). The frustration experienced by natives is described by historian Brooks Blevins as a

ye-e-haw moment, or “the level of consciousness one must achieve to understand one should be offended by The Beverly Hillbillies, even though one may not be.” Throughout his book he uses the term ‘Arkansaw’ when alluding to the fabricated caricature. This geographically deterministic idea is interestingly geared toward socioeconomic status rather than other identifying factors such as race. Blevins points out that the state of Arkansas had a significant amount of African American residents up until World War II, yet they are erased from the vastly white Arkansaw image. An example of ethnic diversity is visible at Van Winkle’s Mill in Rogers, Arkansas, where African American slaves were kept for Van Winkle’s ventures in the lumber industry. Sadly, these groups have been overwhelmingly absent from the historical memory of Arkansas. This erasure shapes the hillbilly narrative and paints an extremely uniform caricature (Blevins 2009; Brandon 2013; Brandon 2004).

In stark contrast to this narrative of isolation, family and social values were an essential part of Arkansas lifestyle. Arkansans were deeply intertwined within their community through family, church, and education. Many were yeoman farmers with small agricultural lands, but these members of society aggregated in social arenas as well. Families were large to provide assistance with farm and household tasks. Men would labor outside by tending to livestock and cutting wood, while women generally labored both indoors and outdoors by chopping wood or milking cows and tending to children and other housework. A man from Independence County stated, “The women would work so much harder than the men and never get no credit” (Blevins 2002:51). On top of general chores, women would assist with gathering cotton during a harvest. Women were also generally assumed and stereotyped to have prominent roles in churches and upholding morality for their families. They would be involved in social groups such as the Order of the Eastern Star, while the men typically became involved as Freemasons. Churches or Masonic lodges may have been a primary location for social events and ritual in smaller hamlets. There were not many options for higher education in Arkansas until the end of the nineteenth century, however. Lifestyles of individuals in Arkansas vary greatly depending on location, wealth, and several other factors. Society cannot simply be dichotomized into backwards and progressive. Instead, Blevins suggests that “the region contained examples of both, as well as a large middle group that existed somewhere between backwardness and progress” (Blevins 2002:92). The extension of railroads into the Ozarks heavily impacted lifestyles of Arkansas’s previously isolated inhabitants. Research regarding the general changes made nationally can allow for a certain amount of understanding of people in the Ozarks. Specifically, it assists archaeologists

with insight toward residents of Pea Ridge and their values and lifestyles in the late nineteenth and early twentieth centuries. A mixture of historical documents, previous research, and the material past excavated at Leetown provide a glimpse into the lives of those who called it home. The Arkansas hillbilly is depicted as being isolated from modernity and unhygienic. This stereotype been associated with the community for decades, yet the lifestyle reflected in material culture and other sources suggests otherwise (Blevins 2002).

### Previous Excavations

As a whole, Pea Ridge National Military Park has been thoroughly researched over the decades because of preservation laws designed to protect and support the research of both prehistoric and historic features and artifacts. The short, yet bloody, Battle of Pea Ridge is the primary focus of the park, and this is evident in its attempt to restore the landscape to its mid-1800s appearance. A greater detail of conflict archaeology has been used to understand Pea Ridge. Drexler defines conflict archaeology by stating that it “includes archaeological research on sites associated with some form of armed, organized conflict” (Drexler 2016:165). This relatively new field of research encompasses any area of conflict, even if the conflict is not identified as a battle.

In 1965, Rex Wilson was commissioned by the National Park Service to survey the park with objectives to locate Leetown and identify possible Civil War soldier graves. In the previous year, historian Edwin Bearss researched Pea Ridge thoroughly, and his findings were utilized in Wilson’s investigations. As the first archaeologist to excavate in Leetown, Wilson’s primary objective was to identify the locations of buildings and their functions based on physical evidence (Figure 1). He had reason to believe that more than a dozen structures, including a Masonic Lodge, once constituted the town. After breaking through the sod, Wilson dug shallow trenches that were 2 x 100 feet in a north to south orientation. This excavation method was widely practiced by archaeologists in the mid-twentieth century, but it was later proven to be less useful with historic sites (Carlson-Drexler et al. 2008:9). The trench centered on the supposed location of the Masonic Lodge, but only revealed artifacts that appeared to be related to the Lee-Mayfield House. The Lee-Mayfield house was built by John W. Lee in 1840 and was later occupied by Will Mayfield and his family until it was demolished by the National Park Service in 1963. Using oral histories recovered by Bearss, Wilson focused on pinpointing the possible location of a house in the southern region of Leetown. While he was unable to decipher an exact location, some cut nails and housewares found in the southwest corner of Leetown signified nearby inhabitancy. Wilson concluded that the

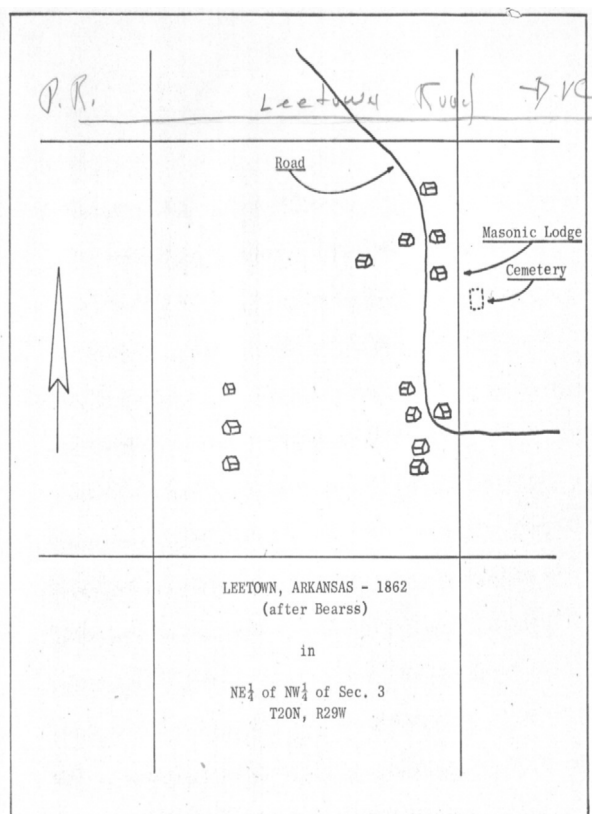


Figure 1. Rex Wilson's Map of Leetown (Wilson 1965).

lack of clear results was a consequence of agricultural cultivation of the land (Wilson 1965:6). The Lee-Mayfield House excavations performed by Wilson did not uncover enough artifacts to identify features of the pre-Civil War Leetown structure. Excavations at the Leetown cemetery outlined the number and locations of graves, and Wilson found that there were seventeen burials at the site, including two child graves. Additional excavations performed near Elkhorn Tavern were aimed at locating a burial pit from the battle, but the only findings were located near a trench used to bury trees that had fallen after a storm (Carlson-Drexler et al. 2008:8).

Roger Coleman surveyed areas near Elkhorn Tavern and shovel tested possible features in 1987. Out of the limited number of artifacts retrieved, Coleman determined that the features were not eligible to be added to the National Register. After the National Park Service began planning the construction of a small shed, James P. Harcourt surveyed a 90 x 50 meter area to satisfy the National Historic Places Act of 1966. Shovel tests in the area revealed small amounts of prehistoric lithics, but there were no Civil War related artifacts (Coleman 1987; Pea Ridge National Military Park 2014).

From 2001 to 2003, the Midwest Archeological Center of the National Park Service used metal detectors to survey large areas of the battlefield. This survey yielded



more than 2,700 artifacts that were identified as Civil War era. This work fulfilled the mandates for the Systemwide Archeological Inventory Program as part of the National Parks Service. These surveys involved the assistance of many volunteers from across the U.S. (Drexler 2016:175). In 2003, William Volf used electrical resistivity to survey Leetown and identify possible features. At the same time, University of Arkansas graduate student Jason Herrmann used geophysical remote sensing techniques at Leetown and "confirmed the anomalies noted by Volf and located additional features including a possible road alignment" (Carlson-Drexler et al. 2008:9; Volf 2003). In addition, Herrmann surveyed a larger portion of the park in an attempt to identify the road that went through Leetown.

The 2002 University of Arkansas Archeo-Imaging Lab students, accompanied Dr. Kenneth Kvamme, conducted a magnetometer survey of Oberson's Field, to the north of Leetown, that covered 20 x 200 meters. This remote sensing workshop identified numerous anomalies believed to be metal artifacts. Afterwards, Midwest Archeological Center's Dr. Douglas Scott led a metal detector survey through Oberson's Field, where hundreds of Civil War related artifacts were uncovered. After the survey, Dr. Marvin Kay identified historic wells near Leetown, as well as some prehistoric artifacts. The same year, University of Nebraska graduate student Don Arp studied unusual striations, or roulettes, found on two bullets. The following research led to additional results after Alicia Coles, Joel Masters, and Carl Drexler analyzed artifacts from Wilson's Creek National Battlefield along with artifacts from Pea Ridge National Military Park. After analyzing excavated artillery and ammunition, they determined that the uniformity of the Union soldiers' ammunition was very recognizable while the Confederate troops did not appear to have a uniform manufacturing process. In 2004, Carl Drexler focused on this manufacturing uniformity for his Master's thesis, which concluded that the difference can be explained by divergent styles of infrastructure on opposing sides of the Civil War (Carlson-Drexler et al. 2008:10-13; Drexler 2004; Pea Ridge National Military Park 2014:90).

### **Current Excavations and Method**

Excavations carried out by the University of Arkansas Archaeological Field School from May 30th to June 30th, 2017, were a part of a four-year collaboration between the Arkansas Archaeological Survey (ARAS), the Midwest Archeological Center (MWAC) of the National Park Service (NPS), and Pea Ridge National Military Park. The Cooperative Ecosystem Studies Units (CESU) federal program allowed each of these organizations to collaborate with the objective of "understanding the site's history, as well as providing the NPS a more accurate and comprehensive interpretation of historic

events" (Lockhart and Brandon 2017:1). This project was focused on Pea Ridge National Military Park's vision of educating the community about Arkansans whose lives were influenced by the Battle of Pea Ridge. Specifically, the field school focused on identifying the features within the hamlet of Leetown.

Prior to excavations in June 2017, extensive research and survey was completed to pinpoint possible important features and structures that comprised Leetown. Geophysical remote sensing techniques were employed to identify areas that held significant structures or artifacts. They were carried out primarily in March 2017, followed by a five day NPS Geophysical Prospection Workshop in May. Geographic Information System (GIS) has been used to overlay maps and identify important features. Total Station mapping, magnetometry, and ground penetrating radar were utilized at Leetown. LiDAR was used to reveal microtopographic features at Leetown that vegetation or other factors may have obscured from other forms of remote sensing. Using the data gathered, the field school performed test excavations in the vicinity of identified possible anomalies. Over the course of five weeks, thirteen 2 x 2 meter test units were excavated by students.

The data and artifacts gathered have supported additional research for both undergraduate and graduate student theses at the University of Arkansas. Jamie Middleton's undergraduate honors thesis focused on the importance of public archaeology and the mutually beneficial relationship it holds with the Pea Ridge National Military Park through interpreting its historical narratives (Middleton 2018). Victoria Jones' Master's thesis will involve in-depth artifact analysis from the 2017 University of Arkansas Archaeological Field School in order to distinguish the significance of American nineteenth century consumerism in Leetown. In addition, she will be using the four loci that were identified with the assistance of Drs Jamie Brandon and Jami Lockhart to pinpoint structures within Leetown.

In 2017, two test units were excavated in Locus 1 at the easternmost end of Leetown (Figure 2). Based on remote sensing data and Jason Herrmann's identified anomalies, it was interpreted to be a road or some sort of structure. However, very few artifacts were recovered from these test units and sterile soil was reached between 20-30 centimeters with no trace of a structure or compacted road. A spatter decorated whiteware sherd was uncovered in Locus 1, signifying the possibility of nearby features that date to the Civil War period. Locus 1 continues to be an area of interest for future research because of the road featured on historic maps of Leetown.

Locus 2 was centered around a depression that was clearly anomalous on the magnetometer survey. This

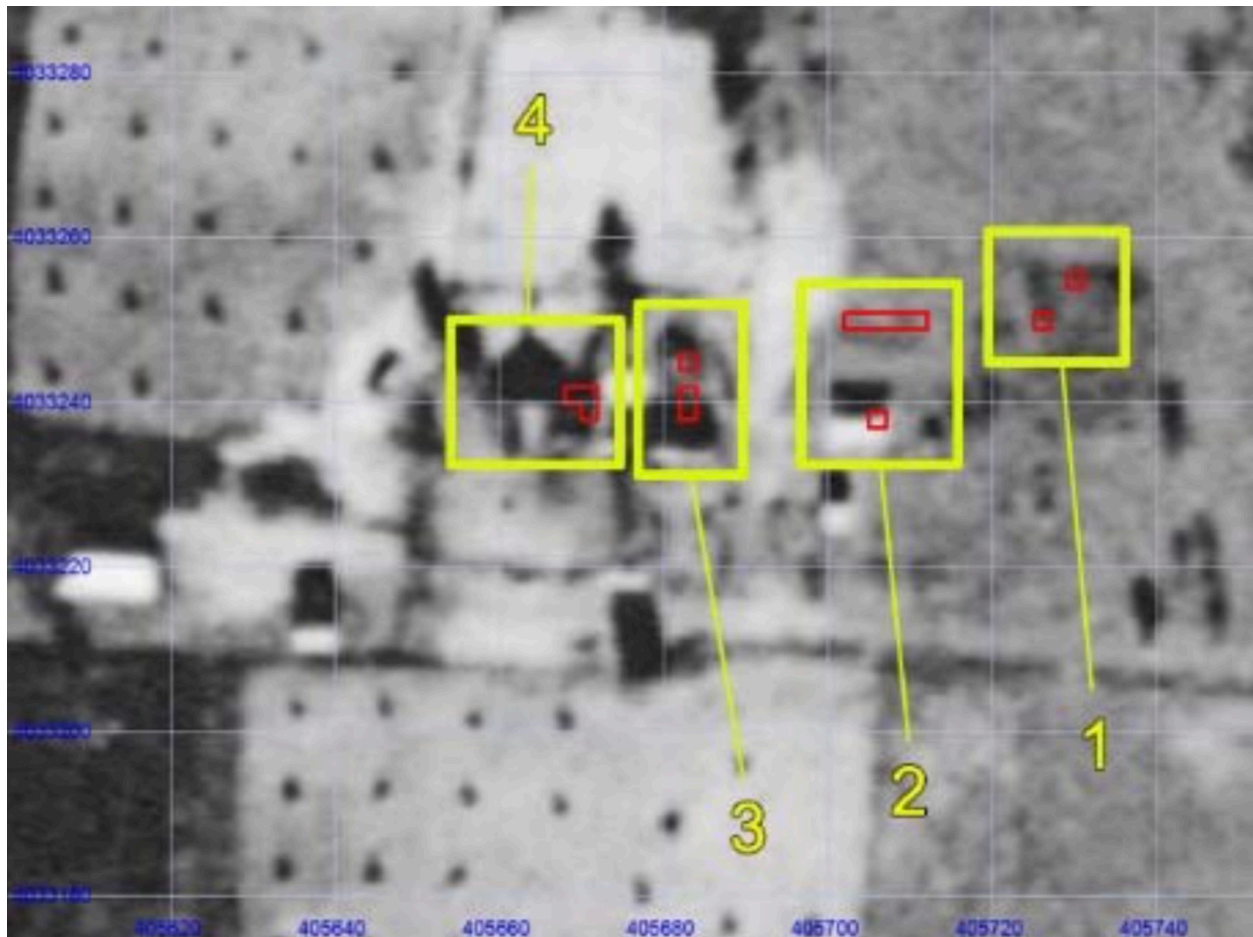


Figure 2. The 1941 aerial photo of the Leetown hamlet and four loci identified (Lockhart & Brandon 2017).

depression had previously been identified in 1965 when Rex Wilson excavated at the site. Test Units 3-7 were within Locus 2, and they formed a trench that was two meters wide and twelve meters long east to west in hopes of intersecting Rex Wilson's previous north-to-south trench. In Test Units 4 and 5 was "encountered a dense deposit of charcoal and ash containing an extremely large quantity of nails - both wire and cut varieties" (Lockhart and Brandon 2017:10). This locus is thought to have been the burn site of a late nineteenth century structure. The high concentration of nails in this small area led Brandon and Lockhart to believe that the building may have been dismantled prior to burning. After excavating Locus 2, the original purpose of the depression remains unknown. However, the "nineteenth-century midden deposits below the burned zone... suggest that the pit was not constructed for burning demolition debris" (Jones 2017:14). The 1941 image of the Lee-Mayfield house shows an outbuilding was once in this area, as well. Placed south of the depression, Test Unit 11 identified this outbuilding based on remote sensing techniques, and excavations revealed part of a structure that is thought

to be from the early twentieth century. However, it does not appear to have any connections to the Civil War period hamlet. Due to time shortages, the field school was unable to excavate Test Unit 6.

Focusing on the backyard of the Lee-Mayfield house in Locus 3, Test Units 8-10 uncovered a possible detached kitchen. A Civil War Union soldier's cuff or vest button recovered from this locus suggests this area could date to the earliest occupation at Leetown. Test Unit 8 uncovered the pier of a structure and a variety of nineteenth-century artifacts, including hand-made bottles and slipware. In addition, faunal remains with butcher marks were excavated. Prompted by the material culture from Test Unit 8, archaeologists excavated Test Unit 9, revealing that the pier was actually an entrance to a cellar. The farthest wall of the cellar was pinpointed in Test Unit 10. The soft lime mortar signifies the construction was from the nineteenth century. It had been resurfaced in the twentieth century and eventually became a trash pit at some point between 1940-1960 (Figure 3). Several intact bottles and tin cans were excavated, and the artifacts recovered on the floor of the cellar possibly date





Figure 3. Feature 2 as seen from Test Unit 9 (Lockhart & Brandon 2017).

to the 1840s. Further analysis will determine whether the cellar continued to be in use throughout the rest of the Lee-Mayfield occupation or if use halted at an earlier point (Brandon and Lockhart 2017). The bottles will be examined more closely in the next section.

In an attempt to identify the exact location of the Lee-Mayfield house, Test Units 12-14 were placed during the last week of the 2017 field school. Locus 4 is comprised of these units. Using historic maps and remote sensing data, these test units were placed in hopes of revealing the cistern or well near the house, as well as an outbuilding nearby. Test Units 12 and 13 uncovered a cement box thought to be associated with a cistern or well. However, the possible cistern was identified as a trough during the 2018 Arkansas Archeological Society Training Program. Test Unit 14 is thought to be a possible location of the well because of the debris and bricks excavated, but future excavations will continue to research the results from this locus. In depth artifact analysis and cataloguing from Leetown will continue by the Arkansas Archeological Survey.

### The Lee-Mayfield House

To understand the context of a location, household archaeology advocates for investigating a broad range of

aspects about the site including patterns, function, and form (Barile and Brandon 2004:5). Supposedly used as a field hospital for the Federal soldiers during the Battle of Pea Ridge, the Lee-Mayfield House is believed to have importance with the Pea Ridge National Military Park. Apparently, the house had been owned by John W. Lee during the Civil War. It is also claimed to have been built by John W. Lee in 1840 (Pea Ridge National Military Park 2014:109). Will Mayfield occupied the property, followed by Pierce Mayfield and his wife after the Pea Ridge National Military Park was founded. The house was once a two-story building and associated buildings included a barn, a cistern, and a granary (Figure 4). At some point, the building appears to have been remodeled into a one-story home. In 1963, the house and structures associated with it were demolished by the National Park Service.

### The Cellar

The cellar, located in Locus 3, is known as Feature 2 and appears to have been used as a trash heap toward the end of its use life (see Figure 3). The distribution of artifacts in the feature lead archaeologists to believe that there were multiple phases of renovations. One of the earliest dated artifacts uncovered in the cellar was a chandelier that is presumed to have been from the late



Figure 4. 1913 Will Mayfield House (Pea Ridge National Military Park 2014).

1800s. A large number of intact glass artifacts excavated within these units are from the 1930s-1950s. These glass bottles had a multitude of purposes that exemplify the consumer practices occurring at Leetown. They include medicinal bottles, food storage, condiments, beauty and hygiene products, and several industrialized national brands. For example, there were a few occurrences of Vicks, a brand well known for treatment of respiratory and sinus related symptoms. A few artifacts date to the period when the Lee-Mayfield house was demolished in the 1960s (Figure 5). These bottles contradict the Arkansaw myth by providing insight into the lives of the inhabitants of the hamlet.

### Consumer Archaeology

Studying the material past can provide insight into lifestyles, class divides, social gatherings, and many other aspects of Arkansas life. Material culture reveals information about the way that the previous inhabitants utilized an area. However, there are factors that seem hidden based on material past. Mullins (2001:2) claims that "identity is rarely so lucidly defined, consumption is not universally rational, and material culture may simply reflect inchoate daydreaming about whom we wish to be." Historical archaeologists typically welcome and encourage a broad range of conclusions, and consumer culture may not accurately exemplify a class identity because of occurrences such as conspicuous consumption (Veblen 2013).

The inhabitants of Leetown likely valued their individuality and expressed it through consumerism. Having an opportunity to build and create an identity based on material possessions gives a sense of agency to consumers. Some historical archaeologists would argue the existence of a close relationship between consumerism and large-scale social systems. The extreme end of this claim would argue that consumerism causes



Figure 5. 1960s Lee-Mayfield House (Pea Ridge National Military Park 2014).

oppression by engaging in capitalism (Mullins 2011). The opposite argument would involve the construction of an individual identity through the agency given to shoppers.

For example, in the nineteenth century, women "were the family's principal representative in public consumer space and the primary mechanism directing their families' adherence to domestic ideologies" (Mullins 2011:147). They statistically spent the most time shopping for the family unit. There were many groups that blamed the entrance of women into this semi-public sphere for an increase in shoplifting supposedly as a result of "ovarian insanity" (Abelson 1989:189). Historical archaeologists have the ability to analyze household consumer practices in relation to women and their relationship with the public and private spheres that may have limited their lifestyles. Researchers are divided on their opinions of how consumerism affected women in either a liberating way by entering the public sphere, or by shutting women away to domesticity (Mullins 2011:147-149).

Consumerism also altered the lifestyles of those in rural communities, as it provided easier access to goods from across the nation. The stereotypes surrounding the anti-modern Arkansan that refuses to participate in the popular practice of national consumerism are not exemplified at Leetown. Important factors can be revealed about consumers based on their material footprint in the archaeological record. For example, new hygiene expectations were created as toothbrushes were once a prestigious consumer good that later became ubiquitous. Foucault "stressed how everyday routinized practices such as bodily maintenance technologies created standardized citizens whose replicable and predictable behavior made them ideally suited to industrial labor" (Mullins 2011:53). These consumer practices are exemplified by the variety of glass bottles of men's hair tonic and mouthwash that were uncovered at Leetown. Hygiene and beauty practices sweeping the nation at the time are visible in the archaeological record.



Residents of Leetown purchased industrialized, mass produced goods, which is exemplified by artifact 32-2-3 (Figure 6).

### Data Analysis and Results

Artifacts excavated at Leetown, specifically in Feature 2, exemplify important aspects of the lives of those in Arkansas from the late nineteenth to the mid-twentieth century. Feature 2 consists of a trash heap in a structure that appears to have been previously utilized as a cellar near the Lee-Mayfield house. Analyzing the glass bottles found within the context of this cellar will provide a greater understanding of Leetown lifestyle. Stereotypes revolving around the backwards hillbillies that occupied the area were not exemplified through material culture. Instead, we found a community engaging in large scale consumerism through nationally-known brands. In addition, personal beauty and hygiene standards are visible through glass artifacts, including Vitalis hair tonic or Listerine mouth wash.

Royal Crown Cola was created in Georgia by Claud A. Hatcher in 1905. Hatcher decided that purchasing Coca-Cola was too expensive, so the grocery store owner formulated a new product to compete. The bottle of Royal Crown Cola provides a fitting example of consumerism in the early twentieth century because the label signifies the rebranding that the company went through in 1934 (see Figure 6). This new label made "RC Cola" the official nickname for the brand, but the nickname had been unofficially used by its consumers for a time before the company rebranded. This artifact was manufactured by Obear-Nester Glass Co. in 1951, and it would have held 10 fluid ounces. In the 1950s, RC Cola and moon pies were commonly recognized as a great pair (RC Cola).

Towle's Log Cabin syrup brand was established by Patrick James Towle out of Forest Lake, Minnesota in 1887, and it was inspired by Towle's favorite president. Abraham Lincoln was raised in a log cabin, and this motivated Towle to name his brand Towle's Log Cabin syrup. The manufacturing style of artifact 28-2-86 signifies that it was created in the 1950s, after the company was acquired by General Foods in 1927 (Figure 7). There are no visible maker's marks from a glass manufacturer, which hinder the ability to identify the location and year that this bottle was manufactured. Vintage commercials from the 1950s promote the product by portraying men working hard in the lumber industry or excited children eating ice cream. This may signify that the targeted audience included families and laboring men across the nation (Log Cabin Syrups). This nationally-produced food product, along with the RC Cola bottle, signifies occurrences of consumerism taking place in Leetown during its occupation.



Figure 6. Royal Crown Cola Bottle. Artifact 32-2-3.

David H. McConnell founded Avon in New York City in 1886 with aspirations of providing a way for women to have an income. He hired women with networking skills as sales representatives to sell fragrances in their communities. The company is now comprised of over six million representatives in several countries (Avon). Artifact 32-2-11 is cream hair lotion for men that was created by Avon in 1949 (Figure 8). The glass manufacturer is Diamond Glass Co. According to Hagley Museum's Archives, this bottle holds four fluid ounces of product. A 1951 advertisement quotes actor James Stewart, "Avon men's toiletries provide everything from a smooth shave to a pleasant aroma that's distinctly masculine." This advertisement was included in multiple



Figure 7. Towle's Log Cabin Syrup. Artifact 28-2-86.

magazines such as *Good Housekeeping* and *Woman's Home Companion*, and it featured the men's cream hair lotion (Hagley Museum Archives).

In 1879, Dr. Joseph Lawrence, inspired by Joseph Lister's surgical discoveries, released Listerine as an antiseptic mouthwash. As dentists began to realize that it effectively eradicated bacteria, this product became "the first prescription product in the US to also be sold over the counter" (Listerine). The bottle excavated from Leetown has "Duraglas" embossed on the side along with "Listerine; Lambert Pharmacal Co" (Figure 9). These embossments paired with the stippling on the bottom of the bottle indicate that this artifact was manufactured in the 1940s. Specifically, the numbers "7" and "0" reveal that this specific bottle was created in the Owens-Illinois Glass Co. plant in Alton, Illinois in 1940. The discovery of this artifact supports the claim that the occupants of Leetown followed common Western hygiene practices, countering the popular belief involving unhygienic hillbillies. Several artifacts can serve as evidence that residents of Leetown practiced beauty and hygiene standards parallel to the nation as a whole, including the Avon cream hair lotion or Vitalis hair tonic (artifact 32-2-1).

There are various instances of consumerism visible through medical-related artifacts as well. In 1887, Leopold Gerstle founded what would become known as St. Joseph Medicine Co. It is possible that the brand was



Figure 8. Men's Cream Hair Lotion, Avon. Artifact 32-2-11.

inspired by "St. Joseph, patron saint of families, children and the sick" (St. Joseph Aspirin). This bottle (Artifact 23-2-1) was manufactured by Owens-Illinois Glass Co. in Alton, Illinois. The stippling on the bottom of the glass along with the number "1" indicates that this bottle was created in 1941 (Figure 10). The sides of this artifact are embossed with "St. Joseph" to specify brand. These tablets were commonly used to treat fevers, headaches, and cold symptoms.

In the 1890s, a pharmacist named Lunsford Richardson sold a product which included a new ingredient called menthol. This ingredient quickly gained popularity for its medicated, comforting properties (Vicks). This iconic, cobalt blue glass bottle once contained Vicks Vaporub salve (Figure 11). There are a few possibilities regarding the glass manufacturer. Maryland Glass Corporation was known for their cobalt blue glass, and they did manufacture Vicks Vaporub (Society for Historical Archaeology). However, their maker's mark is not visible on the glass. Instead, a symbol with three diagonal Vs is surrounded by "Vicks Vaporub" and the letter "Z". The number 38 is embossed on the bottle, which could indicate that the bottle was manufactured in 1938. The variety of artifacts from feature 2 exemplify consumer practices focused on medical concerns, showing an engagement with national markets and acceptance of modern, scientific medicine along with folk remedies for common complaints.

## Conclusion

During the occupation of Leetown in the nineteenth and twentieth centuries, industrial consumer practices are evident through the material culture that was excavated by the field school. A variety of products that were



Figure 9. Listerine. Artifact 32-2-17.

manufactured and advertised around the United States were purchased by those residing in the hamlet, and the stereotypical rural 'Arkansaw' hillbilly is not visible. The myths shaped by cultural memory depict a group of non-progressive, anti-modern hillbillies that rejected the material comforts of their urban brethren. The recovery of popular products, including RC Cola, Vicks Vaporub, and Avon cream hair lotion are sufficient material indicators of a group that holds differing values from the common perception of an Arkansan.

Archaeological evidence allows insight into cultural practices that would otherwise go unnoticed. The material culture left behind by a group can inform researchers about items that would have been part of everyday life, and this provides a different historical perspective. Ongoing research with the Arkansas Archeological Survey and the Midwest Archeological Center at the Pea Ridge National Military Park will exemplify the lifestyle of those in Leetown up until the mid-twentieth century. Educating the citizens through public archaeology and national parks promotes the importance of critical thinking and altering cultural narratives based on material evidence.

As a part of this collaborative effort, the archaeological field school allowed students to gain hands-on experience with archaeological equipment and methods while assisting with pinpointing the locations and number of buildings present. The cellar is believed to have been associated with the Lee-Mayfield house, and this could indicate the approximate location of the structure with further research. Feature 2 was comprised of various artifacts that reveal consumer practices taking place in Leetown that run counter to the historical narrative of rural hillbillies. Material culture excavated during the field school provides additional insight into the residents' engagement with consumerism in



Figure 10. St. Joseph Aspirin. Artifact 23-2-1.



Figure 11. Vicks Vaporub. Artifact 28-2-96

Arkansas during the nineteenth and twentieth centuries, and it clearly defies the stereotypes that previously led to common misinterpretations of an entire group.

### Acknowledgements

I would like to thank Dr. Jamie Brandon and Dr. Carl Drexler for their continued assistance and support. In addition, I would like to thank Dr. Kathryn Koziol, Dr. Jeannie Whayne, and Dr. Mack Ivey for agreeing to be a part of my thesis committee, and I would like to thank Victoria Jones for her constant guidance throughout the research process. I would also like to thank the University of Arkansas Honors College and the Arkansas Archeological Survey for providing research grant opportunities and resources that allowed for the completion of this research.

I am incredibly thankful for the unwavering support that my family and Jacob Durkin has shown to me throughout my undergraduate career. They constantly motivated me to do my best, and I could not possibly express my appreciation enough.

In loving memory of my fiancé, Jacob Matthew Durkin, and my mentor, Dr. Jamie Chad Brandon.



## References Cited

- Abelson, Elaine S.  
1989 *When Ladies Go A-Thieving: Middle-Class Shoplifters in the Victorian Department Store*. New York: Oxford University Press.
- Avon  
2018 About Us, <https://about.avon.com/us-about/company/history>. Accessed 29 November 2018.
- Blevins, Brooks  
2002 *Hill folks: A History of Arkansas Ozarkers & Their Image*. University of North Carolina Press, Chapel Hill.
- 2009 *Arkansas/Arkansaw: How Bear Hunters, Hillbillies, and Good Ol' Boys Defined a State*. University of Arkansas Press, Fayetteville.
- Barile, Kerri Saige, and Jamie C. Brandon  
2004 *Household Chores and Household Choices: Theorizing the Domestic Sphere in Historical Archaeology*. University of Alabama Press.
- Brandon, Jamie C.  
2004 *Van Winkle's Mill: Mountain Modernity, Cultural Memory and Historical Archaeology in the Arkansas Ozarks*. Doctoral dissertation, Department of Anthropology, University of Texas at Austin. University Microfilms International, Ann Arbor, MI.
- 2013 Reversing the Narrative of Hillbilly History: A Case Study Using Archaeology at Van Winkle's Mill in the Arkansas Ozarks. *Historical Archaeology* 47(3): 36-5.
- Carlson-Drexler, Carl G., Douglas D. Scott, and Harold Roeker  
2008 *The Battle Raged... With Terrible Fury: Battlefield Archeology of Pea Ridge National Military Park*. Technical Report No. 112. USDI/NPS/Midwest Archeological Center, Lincoln, Nebraska. [https://www.nps.gov/parkhistory/online\\_books/peri/battle\\_raged.pdf](https://www.nps.gov/parkhistory/online_books/peri/battle_raged.pdf)
- Drexler, Carl G.  
2004 *Identifying Culturally-Based Variability In Artillery Ammunition Fragments Recovered from the Battlefield of Pea Ridge, Arkansas*. University of Nebraska, Lincoln.
- 2016 *Historical archaeology of Arkansas: A Hidden Diversity*. The University of Tennessee Press, Knoxville.
- Fike, Richard E.  
1987 *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles*. Gibbs M. Smith, Inc. Salt Lake City, UT.
- Hagley Museum  
2018 Cream Hair Lotion, 4oz [http://digital.hagley.org/D2001\\_19\\_1006?solr\\_nav%5Bid%5D=fc56466c07f0f8f7ec24&solr\\_nav%5Bpage%5D=0&solr\\_nav%5Boffset%5D=7](http://digital.hagley.org/D2001_19_1006?solr_nav%5Bid%5D=fc56466c07f0f8f7ec24&solr_nav%5Bpage%5D=0&solr_nav%5Boffset%5D=7)
- 2018 Mr. & Mrs. James Stewart Promote Avon, [http://digital.hagley.org/AvonAdv\\_195105?solr\\_nav%5Bid%5D=70a18b8c33e3cc00b641&solr\\_nav%5Bpage%5D=0&solr\\_nav%5Boffset%5D=0](http://digital.hagley.org/AvonAdv_195105?solr_nav%5Bid%5D=70a18b8c33e3cc00b641&solr_nav%5Bpage%5D=0&solr_nav%5Boffset%5D=0). Accessed 27 November 2018
- Herrmann, Jason  
2004 *Interpreting Leetown through the Integration of Aerial and Ground-based Remote Sensing Techniques*. Unpublished MS thesis, University of Arkansas, Department of Anthropology, Fayetteville, AR.
- Hoboken Museum  
Towle's Log Cabin syrup bottle, <https://hoboken.pastperfectonline.com/webobject/678E322D-3E5D-4A61-8CF5-431815423088>. Accessed 29 November 2018
- Jones, Victoria  
2017 Preliminary Results of Pea Ridge National Military Park Field School- Summer 2017. *Field Notes, the Arkansas Archeological Society Newsletter*. 401:12-14
- Kay, Marvin, and Jason Herrmann  
2005 *Archeological Predictive Modeling of Land Use at Pea Ridge National Military Park, Arkansas and Wilson's Creek Historic Battlefield, Missouri*. Department of Anthropology, Fayetteville, AR. Cooperative Agreement CA No. H6115040033, 61, 62.
- Listerine  
2018 About Us, <https://www.listerine.com/about>. Accessed 30 November 2018.
- Lockhart, Jami J., and Jamie C. Brandon  
2017 September Progress Report: Geophysical and Archeological Investigations at Leetown, Pea Ridge National Military Park, Benton County, Arkansas. Arkansas Archeological Survey, Fayetteville, Arkansas.

- Log Cabin Syrups  
2018 About Us , <https://www.logcabinsyrups.com/about-us/> Accessed 28 November 2018
- Middleton, Jamie  
2018 "The Gettysburg of the West:" The Utility of Public Archaeology to Supplement and Enhance Public Interpretation and the Reversal of Ozark Stereotypes at Pea Ridge National Military Park. Paper presented at the 2018 Ozark Studies Symposium, Missouri State University-West Plains.
- Mullins, Paul R.  
2011 *The Archaeology of Consumer Culture*. University Press of Florida, Gainesville.
- Pea Ridge National Military Park  
2014 Pea Ridge National Military Park - Cultural Landscape Report and Environmental Assessment. US Government Printing Office, Washington, DC.
- RC Cola  
2018 Dr. Pepper Snapple Group, <https://www.drpeppersnapplegroup.com/brands/rc-cola> Accessed 29 November 2018.
- Shea, William L.  
1994 1862: A Continental Thunder. In *Rugged and Sublime: The Civil War in Arkansas*, edited by Mark K. Christ, pp. 21–58. University of Arkansas Press, Fayetteville.
- Shea, William L., and Earl J. Hess  
1992 *Pea Ridge: Civil War Campaign in the West*. University of North Carolina Press, Chapel Hill.
- Society for Historical Archaeology  
2018 Bottle Dating, <https://sha.org/bottle/machinemadedating.htm> Accessed 26 November 2018.
- St. Joseph Aspirin  
2018 About Us, <https://www.stjosephaspirin.com/about-us> Accessed 26 November 2018.
- Stewart-Abernathy, Leslie C.  
1999 From Famous Forts to Forgotten Farmsteads: Historical Archaeology in the Mid-South. In *Arkansas Archaeology: Essays in Honor of Dan and Phyllis Morse*, edited by Robert C. Mainfort and Marvin Jeter, pp. 225-244. University of Arkansas Press, Fayetteville, Arkansas.
- Toulouse, Julian Harrison  
1971 *Bottle Makers and Their Marks*. Thomas Nelson Inc. New York.
- Veblen, Thorstein  
2013 "Conspicuous Consumption". In *Social Theory: Roots and Branches*, edited by Peter Kivisto. Oxford, New York: Oxford University Press.
- Vicks History  
2018 Vicks - Cough, Cold, Flu Relief & Allergy Medicine, <https://vicks.com/en-us/vicks-history>. Accessed 2 December 2018.
- Volf, William J.  
2003 Geophysical Resistance Surveys at the Elkhorn Tavern and Leetown Locations within Pea Ridge National Military Park, Pea Ridge, Arkansas. USDI/ NPS Midwest Archeological Center, Lincoln, Nebraska.
- Wilson, Rex L.  
1965 Archeological Investigations in Pea Ridge National Military Park. Report of the United States Department of Interior, National Park Service, Southeast Region, Richmond, Virginia.

# Popcorn Sacks and Wagon Tracks: An Ethnographic Exploration of the Transformation of American Carnival

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## Introduction: A Vignette

"I understand why you don't like it," my father said to me for what seemed like the hundredth time. "It was different when I was a kid. There were families. More people your age. It was fun then." When I was younger, I didn't understand how it could ever have been fun. If you're on the road, it's constant work. Even outside of the manual labor often performed in the heat of a southern summer, finding ways to relax can be difficult. Sleeping quarters are often small, with necessities like water, lights, and toilets, but bare in terms of luxury and comfort. Countless hours are spent hauling trailers in trucks ran ragged, often overheating so that running the heat is necessary to cool down the engine. And all of these tasks must happen outside of the time when money can actually be made. Once the show opens and the midway is full, there is no predicting what interactions a carnival worker may expect to have with fairgoers. Even pleasant interactions take their toll in the world of customer service but taking into consideration the attitude the general public has towards "carnies" and mixing that with the oft-present fairground beer garden, more times than not these interactions range from mildly unpleasant to words of provocation.

But as I got older, I came to appreciate aspects of the business that I had ignored in my youthful resentment toward work. I see the joy that families have spending time together on the midway - riding rides, playing games, even just eating cotton candy - and I take some satisfaction in the knowledge that I contributed to the memories they are making. Families have always been important to the carnival business on both sides, in making carnivals happen and in supporting them while they're in town. There is an identity to be drawn from exposure to the road. People in the business who have spent years working side by side may consider each other family. You meet varied and interesting people in that work, not to mention the sometimes new, sometimes familiar places you go. The carnival business is a community with unique experiences, culture, and even language. But like any culture, it has changed greatly over time. And like any business, it has seen a shift in structure and power.

My dad often reminisces about his days as a youth on the road. He was in his late teens and early twenties in the 1970s. When he talks about it, it's with a grin that conjures feelings of nostalgia even in those listeners (like me) who weren't yet a twinkle in their mother's

eye. You would think that perhaps he's romanticizing the past, memories colored by a time when he was in better shape, his hair was long, still yellow-blond. But as I got older his explanations for the fondness he felt toward the old days changed. He explained how ownership of games, concessions, and rides were split between families, so that on any carnival there would be numerous full families out at any time, with parents and kids ranging in age so greatly that it was always likely to have the company of a peer on the road. And this was good, because rarely in the one week you have in any town would you find and make friends with people your own age, particularly in small towns in which the fairs were held where strangers stuck out like sore thumbs.

As time passed, my dad would say again and again, "Show-owners got greedy." Having always had the brunt of decision-making power on the midway and within the carnival business structure, they were able to change the face of carnival by monopolizing concessions and expanding their control over what other owners could and could not have on the midway. This shift meant that concessions previously owned and worked by individual families were now owned by one or two people and worked by hired hands. This change in composition of who is involved with carnival work also led to a change in the cultural aspect of carnival life. Because of the off-the-record nature of carnival business, it is difficult to truly estimate how many people are involved in the work. According to Billboard Publications in 1969:

Estimates range from 800 to thousands, and the larger number is frequently correct. That is, because whenever the (independent) owner with two or three rides sets up for business, he has a carnival. The following week he may tag along as a part of a larger show, paying a percentage as an independent operator. But this week, if his name is Pinson, he has every right to call his little display "Pinson's Mighty Grand Spectacular Exposition Shows". (Truzzi and Easto 1986:81)

Single shows could have anywhere from ten to fifty or more employees who go unaccounted for in any reliable way. Both the fluid nature of the carnival business as well as the insolated nature of bookkeeping and reporting makes it difficult to find reliable statistics on reported revenue, if you can find statistics at all.

Carnival life remains, even in anthropology, a subject lacking in critical examination from a cultural standpoint. In this ethnography, I hope to create an exposition of carnival life, structure, and culture aimed toward a general, uninitiated audience as well as combat misconceptions held by those who have never been involved in this business. Topics covered will be that of the business structure of carnival life and its hierarchical nature and how it has changed through the years, as well as how those changes have influenced the culture. Delving into the work will necessarily require dives into not only structural analysis of the business, but also descriptions of the culture, including language typically used on the road. This paper will describe the relationship of the carnival as a business and carnival as a lifestyle as something symbiotic, each facet constantly affecting each other. Over the course of collecting data from interviews and while reflecting over my own experiences on the road, I uncovered new understanding that may not have been explicit even to those who are or have been involved in the business. To do this, I have explored questions concerning the business structure of carnival life. How has that structure changed over the years? And to what extent have those changes influenced the culture and identity of those involved in the business and lifestyle of the road?

### **Literature Review: Theory & Previous Research**

In my analysis, I draw from George Ritzer's concept of "McDonaldization" from his 1983 work "The McDonaldization of Society." He explained through this concept the "rational" elements that companies consider when making changes to their business models in order to achieve peak performance. These elements are efficiency, predictability, calculability, and control. Efficiency refers to the ability to optimally reach a set end, which does not leave room for variability in production. Predictability rises from efficiency by always producing the same intended end, through the same means. The duplication of this process leads to the calculability of business, the quantity over quality of production. And finally, by replacing human labor with predictable and repetitive nonhuman labor wherever possible in this process, complete control can be reached (Ritzer 1983).

Ritzer explains how each tenet is applied in the McDonald's business model, and how the strict application of each slowly moves the worker composition away from a "skilled" workforce and makes the work environment take on more and more negative effects. Not only, he posits, does this lead to the dehumanization of workers, but it also takes the joy out of work and, by transference into other areas, life. I will be comparing his observations in the McDonald's structural model to what I and my informant have observed in our time working on the

carnival to trace how the business has become perhaps more corporatized and less human, as we explore what that means to those who work on the carnival itself (Ritzer 1983).

In opposition to Ritzer's theory that McDonaldization ultimately leads to the demise of nonhuman labor, Mary Gatta et al. explain the necessity of service industry skills that only human workers can provide in their paper "High-Touch and Here-to-Stay: Future Skills Demands in US Low Wage Service Occupations." The authors explain how often work within the service industry requires face-to-face interactions that cannot be replaced by technology or moved offshore (Gatta et al. 2009:970). Because of this, service industry jobs are growing quickly. It goes without saying that carnival is a service industry job, entailing many of the skills and qualifications specified in the article. These include "active listening, instructing others, and speaking effectively," all three of which are necessary for working in games, food, and rides for both entertainment and safety purposes (Gatta et al. 2009:976). Laborers in the service industry also must employ critical thinking skills for when interactions within the job go off script, requiring "expert thinking" and "complex communication skills" (Gatta et al. 2009:969). This can involve problem-solving, mediation, time management, or a plethora of other skills to face unforeseeable circumstances. The type of face-to-face interaction required in most work of this type "develops the recipient's human capacities" (Gatta et al. 2009:976). These human capacities cannot be replaced by automated services because part of the appeal of a service industry that also involves entertainment, such as a carnival, comes from the worker acting as entertainer giving a performance that has been individualized, to some extent, for each new customer. Many service industries also require specialized physical labor that cannot be replaced by machines based on the unpredictability of what that labor may entail (Gatta 2009). Some jobs can only be done by humans.

Jobs within the service industry can and often do lead to a particular identity among the workers. This identity leads to the creation of larger communities, or societies, which band workers together based on the specifications of their career as well as the feeling of being excluded from the larger population on the basis of their work. An article written by Marcello Truzzi and Patrick C. Easto entitled "Reflections on the American Carnival and Related Peripatetic Societies," describes the concept of "peripatetic societies" with, as the title suggests, attention paid in particular to carnivals. The article defines these societies as

essentially geographically mobile or nomadic communities [that can] vary widely in terms of size, demographic composition, visibility,

the character of products and resources exchanged with their visited host societies, whether they are welcome or unwelcome visitors, and in terms of the maintenance and permeability of the community's boundaries through interactions with their host societies (Truzzi and Easto 1986:79).

Because of the instability of the categorization, peripatetic societies are considered a constructed typology and the authors give a list of dimensions and characteristics that may be present when defining such a community's "deviant work." These dimensions include variations and space, characteristics of both the peripatetic and host community, relationship to the host culture, and functions of the interactions between the peripatetic community and the hosts (Truzzi and Easto 1986). Different carnivals have different qualifiers within the definition of peripatetic communities. Drawing from their listed aspects, carnivals in the United States would be defined by being seasonal, traveling varying distances, and having an internal stability separate from the host culture (the town in which they set up each week), to list a few.

Truzzi and Easto mention Krassowski's categorization of carnivals created in the mid-fifties which include "(1) the boss and his staff; (2) the ride operators; (3) concessionaires (owners and operators); (4) the owners, operators and performers of the side shows; and (5) families of the carnival workers" (Truzzi and Easto 1986:82). The authors revised these categories to fit their modern times. These revised categories are: "(1) the show owner and other administrative personnel; (2) the independent ride show and concession owners; (3) performers; and (4) worker" (Truzzi and Easto 1986:82).

Show-owners sit at the top of the hierarchy. They make contracts with fairs and festivals, typically own the rides and food trailers (the most profitable enterprises) and collect rent money from independent owners. These independent owners may own games or other concessions and will pay "privilege" (rent) in order to set up their games on the midway and collect money working them. The performance aspect of the carnival has all but died out now, so in this category's place I would suggest the "straight sale" booths, which usually sell souvenirs like jewelry or light up toys for a fixed price, rather than being given as a prize. The workers are those individuals who report to a boss, work food, games, or rides, and live off of either salaries or a commission of their profit. The authors also note an "emerging body of peripheral but highly relevant specialized suppliers including builders and creators of rides and new technology" (Truzzi and Easto 1986:82). These suppliers may be producing new foreign rides to thrill American audiences, or else creating machines (such as shirt-design

printers) to streamline and replace methods of craft that had been previously done by hand. Just from these revised categories we can begin to see the shift in the makeup of people and also hints at the shift in the culture of the business.

As the above dimensions suggest, carnival is, perhaps more than even a business, a community and a subculture. Within the realm of social sciences, a "subculture" may be defined in the loosest terms as a group set apart from the dominant culture, for whatever various reasons. Many anthropologists and sociologists alike have found this definition insufficient and constantly shifting depending on the writer or the context and have taken it upon themselves to apply more specific domains around the concept of subcultural identity and formation. One such author is the sociologist Hans Sebold. He has outlined eight domains which contribute to the makeup of a subculture, which are as follows:

1. Existence of relatively unique (or uniquely accentuated) values and norms.
2. Prevalence of specific lingo or jargon not shared with the larger society.
3. Existence of distinct channels of (mass) communication not shared with or dependent upon "outsiders."
4. Observance of unique styles and fads (including grooming, dress, gesture, and other behavior patterns) often resulting in subcultural ritual.
5. Expression of a sense of solidarity and esprit de corps: the habit of thinking in terms of "we" instead of "me and they" (Or simply: cogency of ingroup vs. outgroup sentiments).
6. Existence of status criteria in terms of (a) cognizing them, and (b) adhering to them in actual peer relationships. In other words, a working order of social positions exists - at a minimum clarifying what makes for prestige, leadership, and followership.
7. Influence and power of individual leaders enhancing the identity and esprit de corps of the collectivity. This is the dimension of charisma.
8. Gratification of specific needs for which the larger culture and social structure fail to provide. The significance of this item lies in the subcultural institutionalization of need fulfilment (Sebold 1975:84).



Sebold sets these dimensions with the understanding that each may have a varying degree of importance depending on the subculture being analyzed. While investigating carnival culture and reflecting upon what I know from having been immersed in it growing up, I have kept these dimensions in mind and will analyze carnival as a community and as a culture through these domains.

One dimension of identity that arises from shared experience and knowledge within any occupation, which Sebold touches upon in his second point, is a lexicon specific to that culture. Carnivals have long had their own unique words and phrases which only those within the business could understand. In "Carnival Cant," David Maurer's "Glossary of Circus and Carnival Slang," the reader is given an introductory course in the language of the road. In this article, Maurer gives a brief description of the nature of carnival work and those involved during the early 1930s. He describes the type of people drawn to carnival work and how that variety of folks led to the diversity of language and culture used on the show. Carnival work in those times, according to the author, required "daring and strength in physical achievement [begetting] daring and strength in verbal expression" (Maurer 1931:327). The language also partly arose from the various backgrounds from which workers came. Maurer explains:

We have, in the first place, a group of people from all parts of the world, civilized and uncivilized. Riders from Potato Gulch rub elbows with French acrobats, Polish strong men, South American equestrians, Italian musicians, Negro laborers, American Indians, Japanese tumblers, Australian or African savages, and foreign freaks without end. Some sort of universal language is necessary, and, indeed, inevitable (1931:328).

His descriptions of the background reflect the article by Truzzi and Easto discussed above, in which they explain that workers join the carnival from a wide range of places, including the host towns in which the carnival plays, other performance work, or simply following in the family business that they were born into (Truzzi and Easto 1986:82). Percy W. White wrote an article during this same period which catalogued a collection of terms and phrases commonly heard on the road both in the 1920s and today. This glossary, though shorter than the one included in Maurer's article, includes terms important for understanding not only the jargon used on a midway but also gives insight into carnival's culture and values. One such term is "showmanship," which White describes as "word that is not found in the dictionaries [...] yet it is the word heard with more frequency than any other in discussions of the show business. The possession of

this quality, or the lack of it, determines whether a man is rated as a success or failure" (White 1928:415). The concept of showmanship relates to Sebold's sixth point, that of prestige and expectation within the culture that defines what makes an individual a true member of the community.

The importance of this language of carnival is highlighted in "Food and Alliance at the County Fair." Written by political scholar and folklorist Leslie Prosterman, the article explains and examines the relationship of fair food, concessions, and concessionaires with the attendees of the fair and how that relationship establishes "assumptions of social identity" including the expectations of fairgoers and fair workers alike toward what a fair should be. When fairgoers look for food on the midway, they are looking for specialty items unlike what they have in their own pantries at home. These items tend to be food that is easily carried so fairgoers can eat while walking the grounds, even while playing games or viewing exhibits (Prosterman 1981:82). This food is sold from a variety of stands, from permanent-looking wooden shacks to transient food trucks and trailers. While discussing these relationships, Prosterman recounts a conversation she had with two carnival workers about the types of stands which sell this kind of food. They referred to the stands as "grab joints" because you "just grab the food and go" (Prosterman 1981:83).

Although language, shared labor, and other cultural factors contribute to the creation of the "carnie" identity, part of the identity of a carnival worker is created by the feeling of being outside the community of people who live within the towns visited by fairs. Tina Loo and Carolyn Strange's paper "The Traveling Show Menace: Contested Regulation in Turn-of-the-Century Ontario" highlights the legal and social regulations carnivals have faced through time. The people who live in the towns that carnivals visit often treat the workers suspiciously and even harshly (Loo and Strange 1995). Carnivals are viewed as beacons of immorality manned by dangerous strangers with the intention of taking the hardworking townspeople's money with games of chance akin to gambling, materialism, and thrills (Loo and Strange 1995). Regulatory actions then are put in place in order to "mobilize a potent form of symbolic power" that separates locals from travelers, reinforcing shared identities on each side of the carnie/local divide (Loo and Strange 1995:641). This experience has stayed consistent through the history of carnival and the construction of the carnie identity.

Although the pre-existing anthropological research on carnival is sparse in comparison to literature available on many other communities, the articles above provide some basis of initial understanding that can be further expanded upon with my own experiential

knowledge and the knowledge of others. Although further ethnographic research on carnivals would be helpful, it is understandable why carnivals are not a topic of interest in the way that festivals outside of the Western canon are for anthropologists, particularly in anthropology prior to the 1980s, when a shift toward urban and Western analysis began to show itself. This paper makes salient cultural aspects of carnival that have previously gone unexplored and undocumented in order to not only understand but also to preserve this culture.

## Methods

In order to provide a holistic explanation of the structure and culture of carnival work and life, I conducted interviews in conjunction with an auto-ethnographic approach. When I set about finding interviewees, I had plans to select at least three informants from what I consider the three major hierarchical tiers of the business structure of carnival. I wanted to interview a “show-owner,” the person who maintains the most power within the system. They sit at the top of the pyramid, controlling the midway and dictating rules to those who pay their way on. These people make up the second tier, and the second collection of interviews. They are the game and food concessioners who “book” onto the show by paying a pre-established fee to the owner as rent. Sometimes these concessioners also work their own equipment, and the majority of the time they have employees who work under them, who make up part of the last tier, and last collection of interviews. This tier includes workers who are paid either a percentage of the money they make while working games, or a salary for working games, food, or rides. They often come from the most varied of background of the three tiers. By including perspectives from all three tiers, I hoped to encapsulate a better understanding of the power structures (and dynamics) at play in the carnival business, as well as compare how the culture manifests amongst each group. Unfortunately, due to cancellations and time restraints, I was only able to obtain multiple interviews with one informant. However, this informant has spent his entire life (over 60 years) on the road and has at different points resided in each of the three tiers.

Workers are often met with hostility, both verbal and at times physical, from fairgoers. Because carnival work is a highly stigmatized occupational field, I have elected to keep the identities of the individual interviewed, as well as associated show names that are still in business, confidential. While I will present information that I obtained about carnival work as honestly as possible, carnivals receive much negative publicity from media at large. Highlighting specific shows in relation to questionable happenings I report could only be used to further these perceptions and have the

potential to unduly jeopardize their economic success. Also, because carnivals are large networks of people who are often inextricable from each other, and because I will only be able to interview a disproportionately few people (read: one person) involved on specific carnivals who may or may not consent to having identities shared, I will not make exceptions toward confidentiality.

For the interviews, I created a script of questions that provide background and context on what carnival both was and is like. I met with my informant, who I will refer to as “Lee,” three times over the course of two weekends in early November. I met with him in Hot Springs, Arkansas, where he lives, and which holds a population of people in the show business. One of these interviews was conducted while he drove us around town in his slick, new (to him) corvette, an obvious source of pride and pleasure. We drove through downtown, where the Hot Springs Showmen’s Association is located, a club where many people who make their “winter quarters” (home off the road) in central Arkansas can meet and socialize. Lee was just as comfortable with our interviews behind the wheel as he was sitting in the den of his home, where we conducted the other two interviews, although he at times seemed sheepish if conversation stalled before I delivered a new question or topic of discussion. Before conducting these interviews, I explained how the information he provided would be used, with the understanding that his identity would be kept confidential. Seeming unconcerned with the latter point, he enthusiastically consented to be interviewed. Each interview was digitally recorded and uploaded onto a remote storage site until they could be transcribed and coded.

My experiences on the road run parallel to that of my informant. Because of this, the information presented in this ethnographic account will be a weaving of both of our experiences in order to present a more holistic narrative. As will become apparent over the course of this ethnography, carnival work plays an integral role in my life. I have spent some part of every summer of my life traveling with my family, working games and food at various fairs and festivals around the country. I come from a family that has been in the business for generations, and I consider it a large part of my identity. I acknowledge that with this personal relationship comes a highly increased potential for bias, and over the course of both my data collection and analysis I will take the utmost care in checking those biases so that I can present the most honest representation of the culture possible.

Because of the experience I possess having been emerged in this culture, I can provide a unique perspective and access that few people have about a culture and business that is widely known as entertainment and just as widely unknown in terms of behind-the-scene complexity.

Auto-ethnography is defined as “an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)” (Ellis 2010). A researcher who has lived and experienced the culture that they then work to describe, analyze, and explain must use a process of reflection in order to produce meaningful narratives. This process arose in response to the traditional process of ethnographic research, which involves a researcher from outside the culture entering the community and using participant-observation to gather data. Auto-ethnography “acknowledges and accommodates subjectivity, emotionality, and the researcher’s influence on research, rather than hiding from these matters or assuming they don’t exist,” which in turn privileges the narrative of individuals within a culture to uncover new and interesting relationships between author, product, and culture (Ellis 2010).

In order to truly convey the unique lifestyle of carnival work to my audience, I have employed the method of “thick description” in my writing. Thick description involves giving detailed accounts of field experience in order to make salient the context in which phenomenon occur (Geertz 1973). In anthropology, it is considered essential in order for both the researcher and the reader to see the patterns that are being analyzed, both culturally and socially, within the context of the community being researched. In order to provide contextualization for my readers, I have included a short and generalized description of what a typical week is like for carnival workers constructed from my own auto-ethnographic reflection. I find that this narrative is essential for understanding the world in which my analysis takes place.

### **Auto-Ethnographic Reconstruction: A Week in the Life**

The foreign is attractive to those on the outside. I’m asked often by my sucker (people not within the carnival business) friends what a typical day is like on the road. I always tell them that a typical day doesn’t truly exist, but a typical week does. A week in the life of the carnival is the most useful unit of measure with which to contextualize and explain what being on the road is like, because after a week (except in special circumstances), the cycle starts over again. In order to familiarize my reader with this lifestyle, I have created a sort of itinerary that is “typical” of road life. This can present difficulty when casually explaining, as I tend to slip into carnival lingo that is unfamiliar with those I may be telling. I will include definitions in text to help the reader understand.

On Sunday, the trailers are loaded (with equipment, prizes, and hardware) and hitched to the trucks. It is morning, or at least early afternoon,

depending on how late we were up last night during tear-down. Workers check the light connections from the trailer to the truck, double checking that the turn signals, breaks, and hazards are all connected and lighting properly. Bodies pile into the cabs of hot diesel trucks. Drivers keep their state maps on the middle front seat beside them, relying on their passenger to navigate if they somehow get turned around. Usually they have driven the same route between one town’s fair to the next for so long that the roads are second nature now. The individuals who own the equipment (trailers, rides, etc.) typically drive it themselves, although if they have help (people working for them) who are adequately licensed they may pull trailers as well. Sometimes, professional drivers are hired to make the jump (drive from one town to another) if there is a shortage of drivers on the show in general or to drive semitrailers in particular. These drivers head out onto the highway and drive until they run low on fuel or they reach the next spot (destination town in which carnival will set up). Sometimes, if their luck is real bad, they’ll have a blowout or some other complication and have to stop along the side of the rushing highway to manually change a tire.

Once they arrive at this week’s fairgrounds, a waiting game begins. Independent operators (like Lee, those men and women who own their own games or food) wait for the show-owner or the lot man to “lay out the lot” (decide how things will be positioned on the midway) by assigning locations to each piece of equipment. Show-owners will typically locate their equipment - the ticket box, rides, and food - before assigning a location to the independent operator’s games. The time it takes to lay out the lot varies depending on the person doing it, as well as the size of the fairgrounds, weather conditions, and other such factors. Under some situations, independent operators may not get their location until the following day. In these instances, they will try to find “juice” (electricity) for their living space for the night and get some food and some sleep.

On Monday, once you get your location, you begin the process of “set up.” It is during this time that rides are constructed. Game trailers are “flushed” (stocked with prizes) and pig pens (wooden counter for game trailers) are built. “Stick joints” (wooden, tent-like games made of lumber; joint is a term applicable to any game or food stand) are erected and flashed as well, and food trailers are cleaned, and food prepped for opening day. The carnival is a seasonal occupation, which can run from the spring to early fall, but the summer is truly where the hustle and bustle of the business lies. It is in these sweltering months, under a high and bright sun, that the carnival is constructed.

At many fairs in the South, the carnival’s opening night is usually either a Tuesday or a Wednesday. On

weekdays, most fairs and festivals open around five or six in the afternoon, but bosses (both on the show-owner and independent operating level) require their workers to raise their awnings and man their rides thirty minutes to an hour before that time. This allows for rides to be given test runs, balloons to be blown and hung on the board, and fryers to be heated in preparation for customers' arrival. Once the fairgoers reach the midway, they line up at the ticket box to buy their wristband. This bracelet allows them to ride any ride they want for a fixed price within a fixed time. It cuts out the necessity of returning to the box to purchase more tickets as they are used, streamlining fairgoers' experience. After purchasing their wristband, goers may choose to either jump on a ride early before lines begin to congregate or else familiarize themselves with all the amusement available on the midway. In the games, workers wait patiently for potential players to walk by and "call them in" to play as they pass. Phrases like "Prize every time!" and "Kids play 'til they win!" fill the air. Sometimes, the jointees (people who run the games), will make their call-ins specifically target their "marks" (potential players), usually goading men to win their loved one's prizes. These calls mix with the sounds of metal rides turning, music being played, people talking, yelling, having fun.

This pattern continues until the weekend. Friday and Saturday nights are, for most fairs, the busiest of all. They may have a matinee opening, starting in the mid-morning or early afternoon, closing for a brief break, and then opening again for the rest of the night. When night falls and the lights come on, there is a spark in the air amongst the hustle and bustle of people. The climate on the midway depends on many factors. Different fairs have different forms of entertainment like music or rodeos. Some are in rural communities with small populations and some are in urban areas outside of large cities like St. Louis. Sometimes there are beer gardens, fairgoers taking pride in stacking each emptied cup.

Once the carnival ends on Saturday night, things are torn down, disassembled, and loaded into various trucks and trailers. While the games and food are often finished and put away in a few hours or so, rideboys often tear-down late into the night. On Sunday morning, the cycle repeats itself. There may be some variation in this process. You may get rain, your help might quit, but overall a week in the life of a carnie is pretty routine, and even monotonous.

### **The Informant: A Life Spent On the Road**

My informant acts as the bridge between the cultural climate of yesteryear and the contemporary culture of carnival that I have experienced. Lee currently is an "independent operator," who typically takes out around three games a season and has anywhere from

two to four people working for him during that time. His seasons are short. In the last ten years, he has not gone on the road until mid-July, and only stays out until mid-October, whereas most seasons begin as early as February and can go as late as November. His route (the more or less set list of fairs he plays during the season) is tailored and only includes spots where he knows he will make decent money. Before or after the time he is out, there is nothing close worth playing. "I don't need any practice," he explains. Having been on the road since his birth in 1953, it's hard to argue with him.

Lee's family has been in show business for generations. He was born into it, as was his father. His grandfather had been the first to get into the business, building a show - the collection of games, rides, food, or other equipment that makes up a carnival - and route of his own, playing fairs and festivals across the country. Lost to time and family memory, Lee does not recall how his grandfather first got into the business. He assumes that he started small, buying small rides and games built of lumber and canopy. To create a route, a showowner has to find a fairboard looking to bring a carnival to their town and create a contract. This process has changed little over time. Contracts are a combination of what the showowner and the fairboard want. The carnival typically draws up the first draft, with the fairboard laying down stipulations. In most cases, the carnival must pay the fairboard a percentage of the gross profits being made by selling tickets or armbands. As Lee explains how contracts are created, he chuckles. "It's one of the few businesses in the world that you have to bring millions of dollars' worth of equipment and pay to do it. Most other businesses you bring a million dollars' worth of equipment they pay you, or at least guarantee [what you make]." In other, less common cases, the fair is arranged as a "buy-out." In a buy-out, the fairboard is responsible for selling access to the carnival to fairgoers, giving the showowner a flat rate to bring their show.

Eventually, Lee's grandfather was able to expand the size of his show during World War II, when most carnivals were facing hard times. Spirits were low and money was tight, and many showowners had to close and sell their show in order to survive. Lee's grandfather bought one of these shows, which had larger rides and whose owner had contracts with more impressive fairs. Despite the war, he was somehow able to keep his show going, taking it to "big spots" like the Tulsa State Fair or splitting it up into two smaller units that could play two small fairs simultaneously. The small unit was called "R & W Shows" while the larger one operated under the impressive moniker "World of Today Shows" (Figure 1).

This sort of transaction can still happen today. Sometimes a show will go out of business, so the owner may try to sell all of his equipment as one "show," or





Figure 1. Poster for World of Today shows.

he may try to sell each piece of equipment individually. These days, with the heightened cost of rides and trailers, it is difficult for anyone to afford to buy a show outright, but in the earlier days of carnival, it was not so difficult nor so expensive. Lee explains the process this way,

[They bought] the rides and the route, they were physically buying the whole thing. You can [buy routes] usually when a show is going out of business, occasionally you can buy individual spots, or somebody will give you an individual spot if they have a better one [and do not want to play the original]. Otherwise, the owner may sell [the fair] contracts at times for a percentage of the gross. Sometimes [the buying carnival] will go underneath the name of the carnival who originally signed it, and if [the fair committee is] happy with the carnival that replaces them they'll sign their own contract. Usually the person who replaces the show gives them a comparable sized carnival, the same size and quality of the carnival that is replaced.

While a showowner in those days had the most power on a show because he held the contract, the midway was more egalitarian in Lee's youth. When Lee was born, his entire immediate and extended family were in the carnival business. At this time, it was common for shows to be made up of large extended families or multiple families each manning different operations on the midway. One family may own and operate food stands and trailers, or games, or (in those days) rides by "booking" their equipment onto a show. In order to book onto a show, an independent operator must pay a "privilege" - either a percentage of their gross or a set amount per foot that their stand takes up on the midway. When asked what it was like to be a kid in this environment, Lee responded

Oh, it was great being a kid on the road. A new place every week. Having fun, running around the grandstands and exhibit halls just having fun. When I was a real young kid. That all changed when I turned about, well it all changed really, the very first time I had to sell tickets on the ride. When I first started selling tickets, rides cost a quarter [or] fifteen cents. So my mom, dad, aunt, and uncle probably thought it was easier to sell tickets at the lesser amount, a fifteen cent ride which was way harder than a quarter, you know, some people come up and get two tickets for a quarter is fifty cents, somebody gets three tickets for fifteen cents 'Well, wait a minute,' you got to stop and think for a second, at least when you're six or seven. That's another thing people in stores... people don't handle money anymore or understand making change that's why a machine's gotta tell 'em.

As Lee grew up on the road, he took on different roles. Years after his grandfather dissolved his show, Lee's father began S & W Shows and Lee was responsible for setting up, tearing down, and running the rides. Eventually, at the age of sixteen, Lee bought his own equipment: a corndog stand. Finances and all, he ran it himself for a year or so, before once again helping his parents with the show. However, by his early twenties, Lee had bought his own games and has been a game operator ever since. Thus, he has filled the role of showowner's son, worker, and independent operator himself. With this experience, he helps me to navigate the changes that have occurred over time and how they have affected the culture of the road.

### Changes Through Time: Owner's Greed and Loss of Comradery

As Lee talked about his childhood on the road, and even into his young adulthood, he repeated two words more than any others: "family" and "comradery."



He recalls being surrounded by his own family on the road as a kid, but also other families and other kids his age. There was an excitement in the air in those days, one that I am not familiar with in my own experience. When I share this with him, he explains

It was such a different time when I was raised, that everything was independent, or not independent, but you had more family operations. More family-oriented businesses, family operated business. And as time grew and expenses grew and showowners got to want more and have control over the whole show to add gross revenue to their bottom line, they started taking over more and more of the independent [operations]. It's like when Wal-Mart comes to town, mom and pop stores go out of business and Walmart takes over everything. Same thing on the road. Carnival owners started taking over everything.

He explained how first, it began with food. Owners began to not book independent operators onto their show, they bought their own food trailers and began to sell and monopolize the food on the midway. Then games came next. Lee maintains that this greed began when the "central" ticket box became a phenomenon. When he was a kid, each ride had its own ticket box, selling tickets and making money for the individual who owned the ride, who would in turn give a percentage of the gross to the showowner. When it became normal practice for only one ticket box to appear on a midway, owned by the showowner, individuals who had booked rides onto the show had to turn in their tickets at the end of the night. The showowner would then give the independent ride operator a percentage of the gross. This, as Lee explained in our interview with a wry smile, "got tougher for a lot of showowners to accept. They liked getting money from you, but they didn't like handing you money." This was the beginning of the demise of independent ride operators, and eventually independent operators in general.

More and more, the carnival began to feel, as Lee described, "corporate." As time passed, there were fewer families on the road, and less children. Although carnival remains a "family business," often the only family on a show would be the showowner's. There is more hired help, who (as Lee explained) treat work on the carnival as a means to a paycheck, rather than a culture and a family business. The showowner's family manages the operation, but generally do not physically work it. Their hired hands are not as invested in the goings on, and the sense of community and comradery began to

break down with the disappearance of individuals whose families had been in the business for generations. It's not as much fun socially, according to Lee:

It went from a family atmosphere with family comradery and closeness that was lost out there because [now] it's just the carnival owner more or less with their immediate family, as opposed to lifelong relationships between other families [...], people who had been around carnivals for years. It used to be somebody would go out who had the cotton candy stand or whatever they happen to have on the carnival for years, and you had the family interactions.

Now, the only real friendliness Lee feels is necessary between owners on the road is when you are asking - nicely - to be booked onto a show. Because showowners are capable of maintaining everything that a fair needs to run, being booked relies on the relationship you have with the person booking and having them like you enough to come onto the show.

As I interviewed Lee and listened to his lament, I reflected on my own experience on the road. Although my family had been in the business for generations, and I feel a deep sense of identity with carnival life because of this, it was true that I did not feel that same sense of intimate unity that Lee conveyed. For long periods of time in my childhood, I was the only kid on the show. In fact, my family were the only game operators on most of the shows we booked, all other games and food were owned by the showowner. I was discouraged from roaming around when the show was not open. The rideboys and other hired help were always considered with wariness, being roughneck strangers rather than families trying to make a living. Contemporary socialization on the show typically occurs between the help, by their living quarters after hours, with a fire and a cracked beer. Not a bad thing, or particularly ominous, but certainly not the wholesome family goodwill and support that Lee recalled with reverence.

The most impactful part of the loss of this family-oriented atmosphere is not just the baseline socialization that comes with being around like-minded people, but rather the loss of social support. Lee said that in his youth, when one person had a problem - with their equipment, a beef with the public, or even a tragedy - other people on the show and other families came together to help. There was a sense that "nothing could go too wrong when you were out there," Lee remembered. Now that feeling is gone and, in its place, there is heightened stress and anxiety. Because booking is so difficult to do, independent operators feel as though they have to compete with each other, a resentment

that ruins potential relationships before they can begin. Perhaps because of this, and certainly because of the difficulty of booking, fewer people are able to sustain themselves in the career of independent operations, and - like myself - fewer children born into show business have any incentive to continue the family tradition.

### **Labor Intensive: The Human Element and Technological Stagnancy of Carnival**

Despite the excessive change the business structure and culture of the road has undergone, it seems that technological advancement has not played a large role. In his 65 years on the road, Lee insists that little has changed since electricity was made more readily available.

In the old days, you were only open in the daytime because you didn't have electricity at night. You opened at the daytime and closed at night, my grandmother used to tell she remembered when they started using torches and lanterns on the fronts of joints to stay open later at night. When [my grandparents] were in little bitty towns houses didn't have electricity, much less the carnival. They had what they called the "pot truck" that would produce electricity to run the show with. Eventually they went away, but I saw a few when I was a kid. Just like generators, you'd hook up to them.

Lee continued to insist that no technological advance had contributed any real help to carnival life. Over the course of this interview, as I continued to come back to the topic, he finally relented: the biggest impact technology has had on carnival life is with the invention of the walkie-talkie.

You can get somebody to come right here and talk right now instead of having to look around the lot. Especially the bigger the carnival, the more useful they are, you know? [mimics holding walkie-talkie to ear] 'Where you at? I need you here. The tilt broke down, we're out of pop in the popcorn wagon, some joint's out of stock.' The walkie talkie is probably the biggest, and the golf cart makes it easier to get around. Next to that? Maybe satellite [television]. Now instead of when you close you go back and light your candle; you go back and turn on your satellite. Every show you go on now has their satellites.

Lee insisted that although technology has made some rides easier to set up or money easier to count, "you're only talking about a few hours saved out of the week." In his perception, even the internet has had little effect. It has

changed the way carnivals are advertised, or equipment is bought, or help is found, but in Lee's mind, ultimately it hasn't made it much easier. In his younger years, there was a publication dedicated to amusement industries that people in the business called "the Billboard." This magazine held stories, ads, and announcements for those in show business. Once the internet became popular, the Billboard went out of print. It's obvious that this is a sore subject for Lee, who seems to hold some disdain for the internet in this matter. But carnivals are still advertised on posters in towns' shops and over the radio, something that hasn't changed since Lee's childhood, and that's enough for him. All of these automated systems, like ATMs, contribute "minimal difference for what it takes to run the whole operation," Lee states. At times, they can even be a hindrance. Rides that rely on computer systems to operate can no longer be fixed with a toolbox. Microchips, easily affected by inclement weather conditions if not properly cared for, must be completely replaced by the company who makes them. Sensitivity to heat and moisture make rides more susceptible to breakdown.

If the day-to-day operations of the road may not have drastically changed due to technology, perhaps it is because the nature of the business relies so heavily on human capabilities and interaction. The work, as Lee repeatedly emphasized while I agreed, is "labor intensive." There are not machines designed to stock games or make and bag cotton candy. There must be people working on the rides, physically pushing the buttons, opening the seats, and checking people's security, even if the locks are electronic, to make sure restraints are working properly. In Lee's words, "you need people at every point where you meet people to take care of people." And people want to be taken care of. No one goes to a fair expecting to not interact with the people who work there. Fairgoers expect "carnies" to look a certain way, to act in certain ways, to entertain them and to take care of them as they play games, eat food, and ride rides. There is a performance element that cannot be matched with automation.

After talking about the intensity of work required of carnival business, Lee admits that he hadn't thought about it before, but says

the carnival is a tough place to live and exist and really a tough way to make a living through life, it really is. For being an owner, when it really comes down to it, you put in more hours than any other business. Because when you're on the road, you're working. Almost everything you do, you know. You're jumping, that's working. You're backing your trailer in, getting lights and water and setting up the satellite, that's working, you know.

Jump day, set up day, tear down day. You don't get a dime for that if you're an owner, the only time you get any money is when the show is open.

Because there is such a small profit to be had for the amount of time spent working in mobile carnivals, it is doubtful that it will ever become a true corporate business. For the monetary investment that must be put into building and maintaining a show, there are many other businesses that are more lucrative and can continue to use technology as a labor replacement.

### **Conclusions: A Business Unlike Any Other**

Through the above data we can see the changes that have taken place in the carnival business from the 1960s to now. Unlike in many businesses, and unlike what is suggested by Ritzer's theory, carnivals are changing more in the social and cultural aspect of the business rather than by eliminating the necessity of human laborers. Small things, like the process of ticket buying or setting up rides, have been streamlined by the advancement of technology but we do not see carnivals reaching the tenets of McDonaldization to the point where human beings are being replaced. Rather, we see the concept of high-touch labor as explained by Gatta et al. (2009) play a more vital role in carnival business. The ability to interact with children and adults in the various settings in which different fairs take place exhibits cultural skills, a specification given by their article. From my own observations, it is clear that carnival workers are practiced in the art of presentation, and after many years on the road one becomes skilled in adjusting verbal and body language to fit different situations and people. A carnival worker must steer people with whom they interact in different ways. They must communicate effectively with their coworkers and the customer. They must entertain while also subtly suggesting ways in which they can keep the player spending money. They must be particularly perceptive in this regard. Some players expect a show - they want the drama and attention that comes with playing, and the worker must provide that in order to keep them there. Others do not. Some play to win big, and others play just to say they did. Being able to read these different kinds of "marks" (players) is necessary when being paid a percentage of your earnings. The carnival worker must strike a balance between time spent on one player who may continue to pay and play and focusing their attention on the next potential mark. All of these skills, although considered soft and not defined by typical qualifications such as academic experience, are necessary for any service industry. Because of this element, the carnival may never fully McDonaldize in the way George Ritzer predicted of most industry and business.

There are also the dimensions specified by Sebold in the construction of subculture reflected by the data. When the show rolls into town, they are distinctly separate from that community both in perception by showmen and in reception by locals (domain 5). Also, because of the hierarchical organization of carnival as not only a culture but as a business, there are distinct levels of prestige and leadership recognizable within the community (domain 6). There are also recognizable leaders within the community (show-owners and independent operators), who not only set the precedent for the types of behaviors and ideals that are valued within the subculture but also hold power within the community in order to set those standards on a cultural and business level (domain 7). Many people, particularly those who do not have a family history in show business, begin work in the carnival because it meets a need (financial, social, etc.), which was not met by the outside community (domain 8). This need is usually based on structural impediments that barred them from making their living in other areas of occupation based on many different factors such as minority status, poverty, lack of permanent residence, means of transportation, or other resources, which allow a person to have a job outside of peripatetic lifestyles. The other domains are met with the language of the road (domain 2), the value system both new and old (domain 1), and specific publications meant for people in the business (domain 3). With more time and more data collection, the remaining domain (as well as the ones mentioned) could be further explored.

### **References Cited**

- Ellis, C., Adams, T., & Bochner, A.  
2010 Autoethnography: An Overview. *Forum: Qualitative Social Research* 12(1).
- Gatta, Mary, Heather Boushey, and Eileen Applebaum  
2009 High-Touch and Here-to-Stay: Future Skills Demands in US Low Wage Service Occupations. *Sociology* 43(5):968-89.
- Geertz, Clifford  
1973 *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.
- Loo, Tina, and Carolyn Strange.  
1995 The Traveling Show Menace: Contested Regulation in Turn-of-the-Century Ontario. *Law & Society Review* 29(4):639-67.
- Maurer, David W.  
1931 Carnival Cant: A Glossary of Circus and Carnival Slang. *American Speech* 6(5):327-37.

Prosterman, Leslie.

1981 Food and Alliance at the County Fair. *Western Folklore* 40(1):81-90.

Ritzer, George

1983 The McDonaldization of Society. *Journal of American Culture* 6:100-107.

Sebald, Hans

1975 Subculture: Problems of Definition and Measurement. *International Review of Modern Sociology* 5(1):82-89.

Truzzi, Marcello, and Patrick C. Easto

1986 Reflections on the American Carnival and Related Peripatetic Societies. *Nomadic Peoples* 21/22:79-88.

White, Percy W.

1928 More about the Language of the Lot. *American Speech* 3(5):413-15.



# Temper Classification of Caddo Pottery Sherds using SEM-EDS

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## Abstract

The purpose of this project is to classify temper from different types of Caddo pottery sherds. The pottery sherds are from the Bowman site (ca. A.D. 1100-1500) located on the Red River in Southwestern Arkansas and were initially classified based on physical appearance using a light microscope. The sherds were divided into categories based on dominant temper: bone, clay, shell, and grog. Early Caddo potters used only clay (or a lack of temper), whereas later production included the addition of bone, shell, or grog (ground, previously fired clay) in order to strengthen the pottery. The next step in the project used a scanning electron microscope with an energy dispersive x-ray spectrometer (SEM-EDS) to analyze the pottery sherds in an attempt to verify or modify previous light microscope temper classifications. The SEM-EDS helped determine which elements are present in addition to atom and weight percentages for each element detected. The pottery sherds are electrically non-conductive, so they were first sputter coated with gold. All of the samples contained carbon, oxygen, magnesium, aluminum, potassium, and silicon. SEM-EDS data indicated the bone-tempered pottery samples contained additional phosphorus and calcium, while the shell tempered samples contained only additional calcium (as compared to the clay pieces).

## Introduction

Pottery sherds were collected from the Bowman site, which is located in the Red River Valley in Southwestern Arkansas. The pottery sherds were analyzed using a Scanning Electron Microscope with an Energy Dispersive X-Ray Spectrometer (SEM-EDS). The SEM was used for visual analysis of the artifacts and the EDS was used for elemental analysis of the components (Froh 2004).

SEM-EDS uses an electron beam to analyze and scan the surface of specimens. The instrument consists of an electron gun, two condenser lenses, an objective lens, an electron detection system, and a set of deflectors (Khursheed 2011). A simplified diagram of an SEM-EDS instrument is in Figure 1.

The surface topography is analyzed through the detection of secondary electrons emitted from the surface of a sample after it is hit with the electron beam (JEOL Ltd 2009). EDS allows for elemental identification and quantification by the analysis of x-rays that are emitted from the sample.

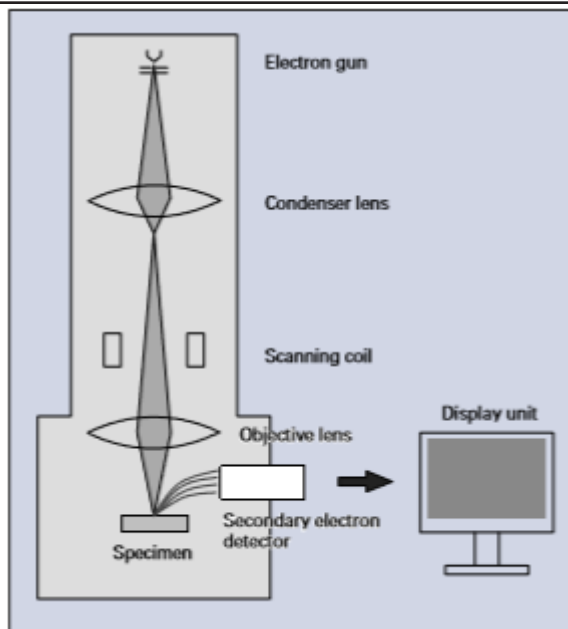


Figure 1. A simplified diagram of a SEM-EDS instrument (JEOL Ltd 2009).

## Experimental

Small samples of each pottery sherd were broken and mounted on a metal peg using a small circle of carbon-based adhesive. Four samples were taken from each pottery sherd. The sherd samples were gold-sputtered because they are not electrically conductive. The height of the largest sample of pottery was recorded in millimeters (mm) and used to set the z-axis of the electron beam. After the instrument was vented to atmospheric pressure, the sample stand was inserted, and the sample area was evacuated. Visual analysis of the samples was recorded, and the images were saved. The exterior of each sample was analyzed using EDS, and data were recorded in units of weight percent and atom percent. Any unusual areas on the samples were also analyzed using EDS. The pottery sherds were assigned a type of temper based on the elemental analysis and the classification based on the SEM-EDS was compared to the classification using a light microscope. Statistical analysis of the sherds was done using ANOVA.

Safety goggles were worn during the operation of the vacuum chamber. Gloves were not worn while handling the pottery sherds due to their non-toxic nature.

## Results and Discussion

Ten pottery samples, including one bone and one shell sample (for baseline comparisons), were analyzed using SEM-EDS. They were labeled according to Table 1.

Accession Number/Sample type	Sample Reference
95-439-47-2-1	B
95-439-41-6-1	C
95-439-43-10-1	D
95-439-34-2-2-1	E
95-439-41-5-1	F
Mussel Shell from the Arkansas River	G
Bone fragment from a deer skull	H
95-439-48-3-1	J
95-439-48-15-1	K

Table 1. Labeling system for the samples analyzed using SEM-EDS.

The pottery sherds were classified based on their temper. Temper is any material, or lack of material, that is mixed into the clay. The temper categories used in this analysis are clay (or no temper), grog (ground up pieces of other pottery), bone, and shell. The classification based on the light microscope relied mostly on whether there were any visible pieces of bone, shell, or ground pottery. The SEM-EDS classification relied on the elemental composition of each sample (Table 2).

The common elements in most of the sherds were carbon, oxygen, magnesium, aluminum, silicon, and potassium (see Table 2). Phosphorus, iron, and calcium varied in each sample depending on the temper. A few samples contained trace amounts of gold and titanium, but these were not needed to determine the temper, so they are not included in the analysis.

The light microscope classification was not shared with the SEM-EDS analysis in order to test the accuracy of the method and avoid sample biases. Using the SEM-EDS, a sample was categorized as bone if it contained both elevated calcium and phosphorus. This is because the main component of bone is hydroxyapatite  $[\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2]$  (Mescher 2016). It was categorized as shell if it contained elevated calcium and no phosphorus. Once both methods were used to identify the temper of the pottery sherds, the light microscope and SEM-EDS classifications were compared (Table 3).

Sample	C	O	Mg	Al	Si	K	P	Fe	Ca
B	12±2	55±2	1.07±0.2	10.8±0.5	17±1	1.3±0.7	0.62	0	0
C	10.2±0.5	51±1	1.1±0.2	7.9±0.4	14±1	1.5±0.4	0	0	9±2
D	8.6±0.3	53±1	1.9±0.3	7.7±0.2	19±1	2.2±0.2	0	5.3±0.4	0.5±0.2
E	8±2	40±1	0.9±0.3	7±2	12±5	1.6±0.6	6±3	11±4	8±7
F	15±2	53±1	0.49±0.02	7.5±0.3	11±3	1.3±0.1	2±2	5±2	0.3±0.2
G	21±5	57±2	0	0.38	0	0	0	0	19±3
H	42±8	37±8	0.4±0.1	1.1±0.5	3±2	0.4±0.2	3±3	0	7±4
J	11±2	48±6	0.5±0.1	10.3±0.6	19±2	1.3±0.3	0.9±0.2	7±1	1.1±0.4
K	8±2	46±5	1.23±0.08	9±1	20±2	1.5±0.2	0	12±1	0

Table 2. Weight percent of each sample. Samples B-F and J and K are pottery samples, H is a deer bone sample and G is a mussel shell sample. N=4 for each sample except F where n=3. All numbers reported are weight percent ± standard deviation.

SAMPLE	SEM	LIGHT MICROSCOPE
B	Clay	Bone
C	Shell	Shell
D	Clay	Clay
E	Bone	Clay
F	Grog	Grog
J	Clay	Bone
K	Grog/iron (II) oxide	Grog/Charcoal

Table 3. Each sample was analyzed using a light microscope and a scanning electron microscope. The type of temper used was labeled based on visual inspection and elemental composition respectively.

All of the samples contained carbon, oxygen, magnesium, silicon, and potassium. The main difference between each type of temper depended on its uniformity and the amount of phosphorus and calcium present. Samples that only contained calcium were classified as shell, and samples that contained calcium and phosphorus were classified as bone.

The temper classifications matched for most of the samples, with the exception of samples B and E. Both samples were re-examined using a light microscope and it was determined that sample B had been miscategorized. Under the light microscope, sample E appeared to have a uniform appearance, and therefore, was classified as a clay sample. Sample E had a nonuniform appearance under the SEM (Figure 2), and EDS data calculated the weight percent as about six percent phosphorous and eight percent calcium.

Since the bone fragments were ground so finely, it is hypothesized that sample E was originally a piece of fine ware where the bone temper was not visible on the light microscope.

Sample K was originally categorized as charcoal using the light microscope due to the large number of dark spots present throughout the sherd. Based on SEM-EDS analysis, these dark spots are iron (II) oxide. Thus, the sample was re-classified as simply grog due to its nonuniform appearance and lack of phosphorous and calcium.

An ANOVA analysis was used to determine whether there is a significant difference between the phosphorus and calcium weight percent for each pottery sample. There was a statistically significant difference between the group means of the data for P composition (ANOVA,  $F=7.431$ ,  $p=0.00087$ ). There was also statistically significant difference between the group means of the data for Ca composition (ANOVA,  $F=22.142$ ,  $p=5.11 \times 10^{-9}$ ).

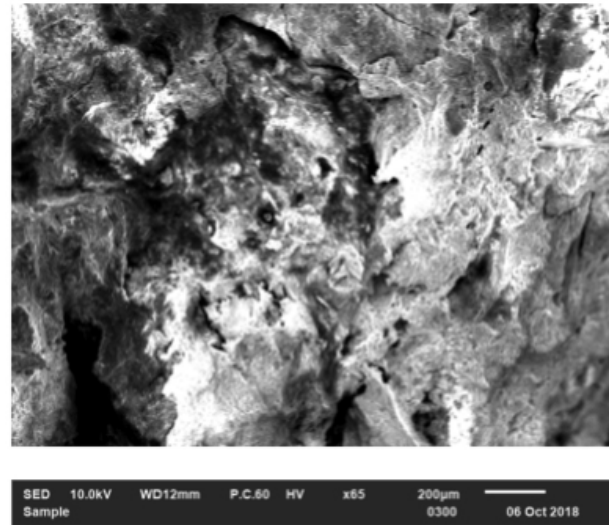


Figure 2. SEM image of sample E showing its nonuniform appearance.

The Tukey-Kramer test was then run post hoc to determine which samples differed significantly (Tables 4 and 5). The only sample that differed significantly from the others is sample E, which is one of the samples classified as bone tempered by SEM-EDS.

Many of the samples had significantly different calcium compositions, which is likely related to different amounts of temper being added to each during production. The three samples classified as clay (samples B, D, and J) did not contain significantly different amounts of calcium.

The elements that were classified as components of the clay mixture (C, O, Mg, Al, and Si) in each pottery classification were not statistically different from each other based on ANOVA analysis. There were slight differences in the weight percent between samples that had different temper. For example, samples B and E had significantly different oxygen composition because of the additional oxygen added by the hydroxyapatite in the bone temper of sample E. Since each classification had similar amounts of the major elements present, it is likely that the pottery was produced at the same local origin.

## Conclusion

SEM-EDS analysis of pottery sherds is a useful method to use when determining the type of temper used. The next step of this project will involve looking at multiple samples of a single type of pottery to determine if there are any variations in the composition. This project will also look closely into the clay composition of the pottery samples in order to determine the region in which they were produced.

Sample	B	C	D	E	F	J	K
B	-	-	-	-	-	-	-
C	0.455	-	-	-	-	-	-
D	0.455	-	-	-	-	-	-
E	3.715*	4.16*	4.16*	-	-	-	-
F	1.25	1.69	1.69	4.16*	-	-	-
J	0.12	0.565	0.565	3.595*	1.1325	-	-
K	0.455	-	-	4.16*	1.69	0.565	-

Table 4. Tukey-Kramer values for phosphorus weight percent of pottery samples. Values marked with an asterisk (\*) are greater than the minimum significant difference for the selected data sets (msd=2.499).

Sample	B	C	D	E	F	J	K
B	-	-	-	-	-	-	-
C	4.542*	-	-	-	-	-	-
D	0.225	4.318*	-	-	-	-	-
E	4.44*	0.1025	4.215*	-	-	-	-
F	0.1325	4.41*	0.0925	4.308*	-	-	-
J	0.5675	3.975*	0.3425	3.873*	10.435*	-	-
K	-	4.543*	0.225	4.44*	4.44*	0.5675	-

Table 5. Tukey-Kramer values for calcium weight percent of pottery samples. Values marked with an asterisk (\*) are greater than the minimum significant difference for the selected data sets (msd=3.949).

#### References Cited

Froh, J.  
2004 Archeological Ceramics Studied by Scanning Electron Microscopy. *Hyperfine Interactions*. 159-176.

Khursheed, A.  
2011 *Scanning Electron Microscope Optics and Spectrometers*. World Scientific.

JEOL Ltd.  
2009 SEM; Scanning Electron Microscope A to Z, JOEL Desktop Modules,

Mescher, Anthony L.  
2016 *Junqueira's Basic Histology Text and Atlas*. 14th edition. McGraw-Hill.



# Rock Art Conservation: Hindering Human Interaction

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## Introduction

Rock art sites that are accessible to public visitation face the problem of vandalism and defacement. Rock art sites are popular tourist spots, which creates a problem of people wanting to leave their own mark at the rock art sites. Often through graffiti or etching their names and love declarations are placed on the surface of the rock. There are 32 documented rock art sites in Arkansas, making the state a popular place to view rock art. (Figure 1) (History Pointer 2019). This research seeks to find a solution to the problem of rock art vandalism and defacement in Arkansas, where people will still be able to view the rock art, but not be able to damage it.

Rock art is one of the earliest and few examples left behind by the indigenous peoples that helps to create a picture of certain aspects of their life. Many sites date back to as early as 10,000 years ago (Sabo 2005:7). Throughout North America, anthropologists have found that some of the rock art sites are sacred sites, ceremonial sites, or a place of some sort of individual ritual practice. Felton Bricker, Sr., a cultural representative of the Fort Mojave [tribe] and a cultural resource manager for the Aha Makav Cultural Society, states that the rock art sites [to his tribe] “are significant...they are spiritual places...even if we do not know what they mean...they were created by my ancestors and provide a tangible, as well as spiritual link to our history and the land which the Creator has directed the Mojave People to steward” (Bricker et al. 1999:8). If these places were locations to conduct sacred ceremonies or considered sacred, they also could have been a places where storytellers or shamans told their stories, or a places for more specific ritualistic activities (Sabo 2005:11).

There are rules and laws in place to stop the vandalism and defacement, but even with that in place, people still destroy the sites. In Arkansas there are several laws used to protect archaeological sites. The laws relating directly to rock art include §15-20-603 and §13-6-308. Act §15-20-603 states that it is unlawful for a person to vandalize or deface the surface of any cave or shelter that has been recorded as an archaeological site. The removal of any material, control access to the site, damage to signs regarding cave rules, or damage the value of any archaeological or paleontological site are prohibited. Violations of this Act can result in a Class A Misdemeanor. Act §13-6-308 states that archaeological sites and artifacts on state-owned and state-controlled land are protected and that it is illegal to knowingly damage sites

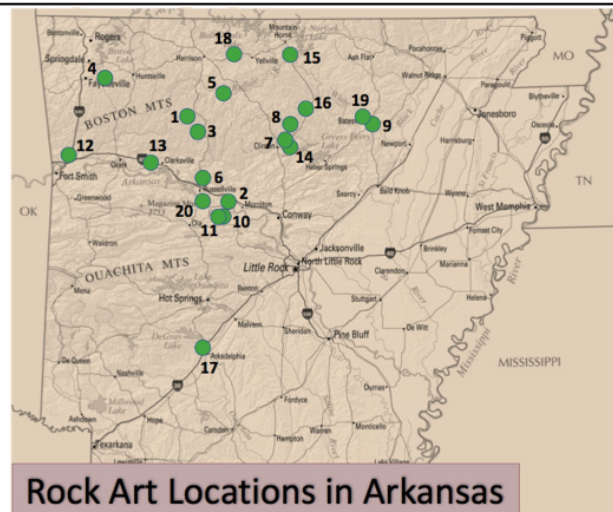


Figure 1. Rock art sites in Arkansas.

and artifacts (State of Arkansas 2019). Violations of this code can result in a Class D felony for the first offense and a Class C felony for a subsequent offense if the value of the damage is greater than \$1,000.00 (State of Arkansas 2019). If the damage is less than \$1,000 then the individual can receive a Class B misdemeanor for the first offense and a Class A misdemeanor for the subsequent offense if the value of the damage is \$1,000.00 or less (State of Arkansas 2019).

## Theory

E. B. Tylor proposed the comparative method, where “comparing similarities and differences between cultures” is a means to understanding cultural adaptations. This comparative approach is also applicable to studying rock art sites. Because each site is different, each one has its own beliefs and views, resulting in an expression of each culture's art and social relations, as shown in the rock art symbols (Whitley 1998:269).

## Tourism and Conservation

Because rock art sites tend to draw tourists and tourism is emerging as one of the fastest growing industries, theories regarding rock art conservation must also consider environmental, social, and economic processes. The focus must be on both the tourism and economical factors and the significance and physical preservation of the rock art site (Deacon 2006:381). The primary purpose within rock art theory is to maintain the respect and the significance of the rock art sites, encourage interactions

between conservationist and the tourist industry, and to encourage future planning to involve conservation and preservation measures pertaining to rock art sites (Deacon 2006:381).

## Methods

By gathering information pertaining to rock art conservation methods, rock art sites, and why people vandalize and deface rock art sites (James 2016; Howard and Silver 1999; Shumla 2017; Strecker et al. 1999; Swadley 2008), it is clear that most of the conservation methods involve repairing the actual rock art itself and removing the graffiti. Heavily damaged sites might require closing off the rock art site for complete protection. Not much is known regarding why people damage rock art sites, other than just their lack of knowledge about conservation and the history of the site.

In order to gain the information regarding various conservation methods, I conducted two interviews. The first is with an expert on rock art conservation to understand different conservation methods. I interviewed BT Jones who is a Park Interpreter on Petit Jean State Park on Petit Jean Mountain in central Arkansas. He has worked in rock art research for over 13 years. We met in person at Petit Jean State Park and the interview was conducted using prepared questions, which were then explained and expanded during the interview.

The second is with the Supervisory Park Ranger at Blanchard Springs Caverns located in Fifty-Six, Arkansas. I interviewed the Supervisory Park Ranger to gain information on why Blanchard Springs Caverns uses boardwalks in their caverns and caves. I contacted the Supervisory Park Ranger via phone, and conducted the interview by phone using prepared questions.

## Terms Defined

In this research I use the term rock art, which are images that were deliberately crafted onto a natural surface. This can include cave walls, rock bluff shelters, and other rock surfaces. This term can also be used to describe modern day graffiti, but herein I am using the term to describe prehistoric and historic creations (Sabo 2005:3). In Arkansas, the date range is around 500 years ago to around 3000 or more years ago (Sabo 2007). Other terms for this subject might include cave art or cave paintings, rock painting or rock engraving (Fox 1972). There are two types of rock art. Pictographs (Figure 2) are painted images, which are often created using red pigment (Sabo 2005:65). Petroglyphs (Figure 3) are images that have been carved, pecked, or scratched into the surface using a stone tool (Sabo 2005:65). These two types can also be combined. When combined they are called painted petroglyphs (Sabo 2005:3). I include both of these types into the broad term, rock art.



Figure 2. Pictograph (Sabo 2005:64).



Figure 2. Petroglyph (Sabo 2005:7).

I use the term conservation in my research instead of the term preservation. Conservation which refers to the physical and chemical techniques used in the management process at a rock art site that seek to prevent or slow the damage (Whitley 2011:204). Preservation which refers to “hands-on intervention (i.e., physical change to the panels or motifs) in addition to maintenance, such as the removal of plants...or diverting a water flow” (Whitley 2011:186). I have found that these terms are used interchangeable in the topic of rock art protection. I use the terms vandalize and deface together throughout the research, because vandalize means to deliberately cause damage or destruction (FindLaw 2019) and deface means to disfigure the appearance of something by



destroying the specific details that made it what it was “using a writing instrument, etching tool, or other such device” (Freidberg 2019).

### **Vandalism and Destruction**

There are two main types of rock art destruction: 1. natural, such as erosion, mass wasting, which is when a cave falls into itself, or a rock slide occurs destroying the site (Sabo 2005:127), vegetation growth (Bakkevig 2004:67); 2. human interaction, both intentional and unintentional (Sabo 2005:127), such as graffiti (Figure 4) and etching (Figure 5). In my research I focus on the human interaction that causes destruction. Because of the sacred value, some indigenous people prefer the images at the original site to be re-painted, instead of trying to fix the natural destruction or trying to stop it from happening. They view the weathering of the rock art as something that is a natural part of the art and they believe it should not be stopped (Deacon 2006:381). But the human interaction aspect of the damage can be prevented.

### **Conservation Methods**

#### *Repainting*

Some of the conservation methods that have been implemented seek to try and remove damage and vandalism. An attempt to remove spray paint from the rock art, which when done correctly by a professional, may be effective. There are some rock art sites that have restored paintings to resemble what they looked like before being damaged. For example, at Sego Canyon, Utah a method of “visual reintegration” was used (Howard and Silver 1999:37). Visual reintegration is the repainting of the certain portions of the rock art to return them to their original appearance to make the panels decipherable to the public. This includes both recoloring the actual pictographs and repainting the color of the natural surface, which in this case is called “desert varnish” (Howard and Silver 1999:37) (Figure 6). An potential issue associated with his method comes from a Native American perspective where “conservation interferes directly with the history of the rock art and the place... [and as such] vandalism will have become a part of this place” (Bricker et al. 1999:9). From this perspective visual reintegration is another layer of destruction to the original rock art and associated meaning. In other words, the argument is that the rock art should be left alone because the graffiti, while damaging, is now a part of the rock art panel. Nonetheless, visual reintegration and desert varnish methods do not prevent human interaction and damage to the rock art sites. They simply attempt to remove and restore what has already been done, rather than to prevent vandalism from reoccurring.

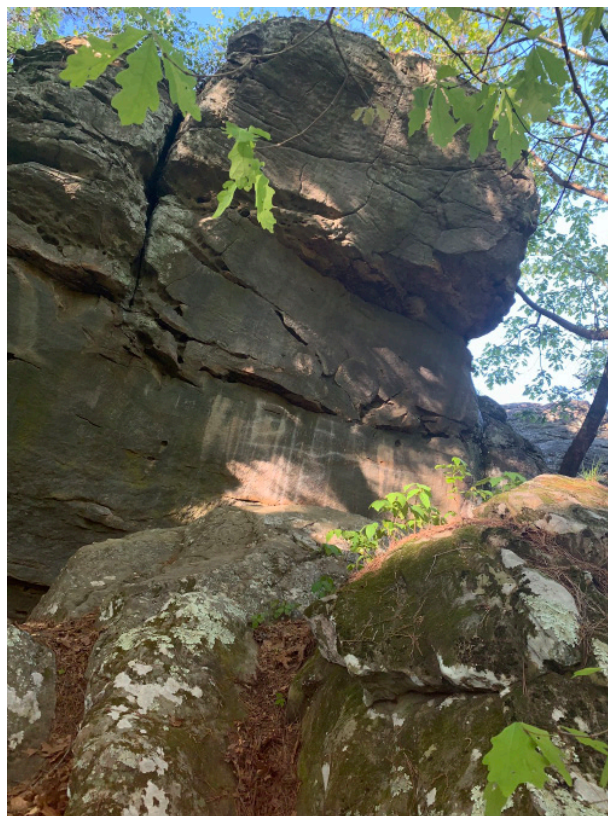


Figure 4. Graffiti (photo taken by author).

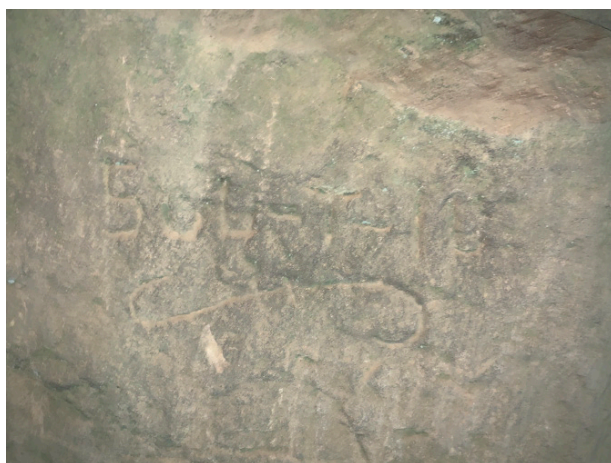


Figure 5. Etching (photo taken by author).

#### *Closing the site*

Another method of conservation is to completely close a site to the general public, so there is no accessibility and thus no damage able to be done. An example of this is at Chauvet Cave in France. The cave was closed to the public to protect the images from being destroyed by human exposure, and to protect the cave from chemicals, such as carbon dioxide, and bacteria that humans carry into





Figure 6. Desert Varnish (National Park Service 2018).

the cave that cause erosion (James 2016:519). To allow the general public to experience Chauvet Cave, a replica was created. Each rock art panel was laser scanned and was recreated inside the large above ground replica of the cave (Figure 7). A concern is the authenticity of the replica and if it exceeds expectations when compared to the actual cave. Does the fact that the original site is closed because it is being protected outweigh the experience of seeing the real site (James 2016)? This method does protect and preserve rock art and prevents more damage, at least from human interaction, but it also prevents the general public from being allowed to view the actual rock art.

#### *Digitally Preserve*

Another method is the application of digitally preserving the rock art, which also allows for “preservation-through-documentation” (Figure 8), such as the Shumla Method (Shumla 2017). One aspect of the Shumla Method captures high-resolution digital imagery of rock art panels, records metadata, and records an accurate GPS location for the rock art. So, even though the actual rock art itself is fading, the Shumla Method tries to digitally capture the rock art on photo before it is unintelligible. An example of this method of conservation is the Alexandria Project and the digital documentation of the 300+ rock art sites in Lower Pecos Canyonlands in south Texas. The impetus for the project is related to the potential for sites to become flooded (Shumla 2017). The data collected is stored on a sophisticated database that protects against data loss, and allows for the data to be accessed online, for site reports, publications, and presentations (Shumla 2017). An issue associated with this method is that even though this is an effective way of conservation, it is not a solution where people can still view the rock art sites, which is an aspect I am focusing on for my solution.



Figure 7. Replica of Chauvet Cave (Smithsonian Magazine 2018).



Figure 8. Shumla Method (Shumla 2017).

#### *Barriers*

Barriers can be placed between the rock art and the viewer, which would include building a fence so people cannot get close to the rock art, and building fences that close off entrances to caves. Examples of this method



(Figure 9), are the rock art sites, Mataral, Toro Muerto, and Cerro Banquete, located in Bolivia (Strecker et al. 1999). These sites are isolated because of their location, but with a high number of tourists. At these rock art sites, the barrier method did not prevent vandalism. Instead, it attracted attention to the areas with the rock art, which caused people to damage the rock art (Strecker et al. 1999). The primary issue associated with this method is that constructed barriers, such as fences, attract deviant behavior to the location of the rock art rather than protect it.

### *Boardwalks*

Another conservation method is the use of boardwalks or removable walkway structures (Figure 10), that are far enough away from the rock art for people to be able to touch it (Loubser 2001:101). The boardwalks are built on the ground where they do not damage the site, which includes building them around the vegetation and rock formations that are present (Loubser 2001:101). The boardwalks are to make it difficult or near impossible for people to touch the rock art, since the boardwalks would be built far enough away from the rock art surface (Loubser 2001:101). An issue associated with this method is the cost of the material to build the boardwalk (Jones 2019), and at some sites, this would not be an option because of expense.

When implemented, the boardwalk should contain informational signs that describe the different rock art and different rock art styles (Figure 11), along with close up pictures to help people see the images. While the boardwalk would not make it impossible for people to touch the rock art, it would help to deter them. If people are able to still have contact with the rock, directly pointing out the rock art might lead to intentional vandalism, but if there is absolutely no contact available it would help people find the rock art. Showing people where the exact location of the rock art could influence someone to vandalize or deface that particular image (Swadley 2008). A sign with general information on what to look for would decrease the chance of intentional vandalism and encouraged visitors to locate the rock art on their own. A site where the images are hard to see or are getting too light to see with the naked eye could incorporate the Shumla Method into their conservation methods. This would provide high resolution photos of what the rock art should look like, this would help people know what rock art is present. Even though they cannot see the actual rock art, they have an idea of what it would have looked like when it was still visible. Guided tours could help people find the images and would help prevent any sort of additional damage to be done because of the presence of an employee, especially if the site was at a place where the staff that would lead the tour



Figure 9. Barrier (Strecker et al. 1999).



Figure 10. Boardwalk (Obert's Prestige Vacations 2019).

would be an Interpreter, which wear a uniform similar to what law enforcement wears. Information on graffiti and damage that has already been done to the site should be discussed on informational signs to inform the guest



Figure 1. Informational sign (photo taken by author).

why the destruction of the rock art is wrong and what is done to prevent it (Loubser 2001:101). Also, the laws put in place to protect the rock art and the consequences of causing damage to the rock art. The boardwalk should not prevent the viewers from seeing the rock art just prevent them from being able to cause damage to the site. This is why putting up some type of barrier, such as "Plexiglas" (Swadley 2008), would make it hard for the rock art to be visible, it would prevent a direct view to the rock art and would make photography very difficult. Everything should be done to accomplish conservation without having to turn to closing the site to the public. Closing the site to the public would be the last resort.

### Case Study: Why Boardwalks?

In my literature search I could not find a rock art site that uses boardwalks as a conservation method and I could not find hard evidence to support my claim that boardwalks would be the best conservation method to be the solution of the problem of rock art vandalism and defacement in Arkansas. I interviewed BT Jones, who is a Park Interpreter at Petit Jean State Park in Arkansas, to back my hypothesis on why boardwalks might be the best conservation method. Park Interpreter BT Jones has been involved with rock art research for over 13 years since he started working at Petit Jean state park in 2005. Park Interpreter Jones stated that not much of his research has been focused on the conservation or preservation of rock art, but it definitely is something important to look into. For the research that he has done on the subject, his main contact has been the Arkansas Archeological Survey, which has a station on Petit Jean Mountain.

The steps that have been taken at Petit Jean State Park to stop the damage to the rock art are:

1. Stopping damage through park interpretation to show that rock art is valuable, and that it is here for everybody, and also it is valuable to the archaeologist to continue to learn from and discover the past.
2. Game cameras at primary rock art site, Rock House Cave and in parking lot. If someone is seen damaging the site from the pictures taken, they are identified if possible then they are identified again by their license plate number if possible
3. Remove graffiti. If done in ink or paint, they have a solvent made especially for that called "Elephant Snot"
4. Distilled water for superficial scratches.

Park Interpreter Jones' opinion on boardwalk method is that it reduces incidents of graffiti and damage to rock art and it reduces the damage done from people walking through the dust, which gets on the walls and oxides. However, it would not completely protect the rock art, because people could always go beyond the barriers. "We have considered putting boardwalks in the Rock House Cave, and that seems the most viable option", says Jones. Park Interpreter Jones stated that the option beyond that would be to put a gate up that would prevent people from entering unless they were on a tour with a guide, "I don't know if that [boardwalks] will ever be a practical option here, but it is an option".

- Cost: "I do not have that with me right now, but it is a pretty expensive proposition to build a nice boardwalk in and around the Rock House Cave and there are also big boulders in there to navigate it with a boardwalk would also be a tricky thing"
- Places that have done boardwalks: Blanchard Springs Caverns. "For rock art, no. For controlling a big number of people we have a boardwalk at the Grave Site and the Cedar Falls Overlook, which certainly helps people from getting out on the edge of the cliffs over the waterfall"
- Why people damage rock art: not knowing [the value] or what the rock art is. Not caring.

Even though Petit Jean State Park does not see a future use of boardwalks in their rock art site, at the Rock House Cave, they have considered it. Park Interpreter Jones finds the conservation method of boardwalks an effective method and a viable method for protecting rock art.

I could not find an Arkansas rock art site that used boardwalks as a conservation method, but I knew that Blanchard Springs Caverns used boardwalks in their caverns and caves from personal experience. I wanted to know the reason behind them using the boardwalks, so I also interviewed a Supervisory Park Ranger to ask why they use boardwalks at Blanchard Springs Caverns in the



caves and caverns. He said that the boardwalks are used as a method of conservation, because, “peoples’ hands have oils and dirt on them that break down the cave walls overtime” and boardwalks are used as a method of protection, because “the cave walls have sharp points on them and the boardwalks help keep people in an orderly manner and prevent people from going where they are not supposed to.” Even though Blanchard Springs Caverns is not a rock art site, it is a good example of where boardwalks are used to maintain conservation. The boardwalks are still used as a method of keeping people where they need to be and away from where they should not be, and keeping people from not touching what they are not supposed to.

## Conclusion

Any sort of conservation method for the protection of rock art would be a good method. Everything should be done in order to preserve and protect the evidence of past times. Preserving the rock art is important for educational and cultural reasons, it helps in research and helps connect people to their cultures, and it provides a link to their past. While all of the conservation methods are effective at protecting and preserving rock art in their own way, I believe that the boardwalk method would be the best solution to the problem of rock art vandalism and defacement in Arkansas, where people will still be able to view the rock art, but will not be able to damage it. My focus leans toward the tourism side of rock art, where my main focus was to maintain public access, but another aspect that should be considered is the opinions and beliefs of indigenous peoples, I believe this is the best way to not damage the rock art or damage the significance of the site, because the actual rock art is not being touched or being introduced to chemicals while trying to clean the rock art. However, someone who has actual connection to the rock art site might have a different opinion. A limitation to the boardwalk method might be the cost to build the boardwalk depending on the site, but if the expense is not a problem, the boardwalk method would be the best solution for rock art conservation to maintain public access, without any more damage being done.

## References Cited

Bakkevig, Sverre

2004 Rock Art Preservation: Improved and Ecology-based Methods can give Weathered Sites Prolonged Life. *Norwegian Archaeological Review* 37 (2).

Deacon, Janette

2006 Rock Art Conservation and Tourism. *Journal of Archaeological Method and Theory* 13 (4).

Felton Bricker Sr., Thomas Holcomb, and J. Claire Dean.

1999 A Native American's Thoughts on Preservation and Conservation of Rock Art. Vols. IRAC Proceedings, Volume 2, in *Images Past, Images Present: The Conservation and Preservation of Rock Art*, by J. Claire Dean. Tucson: American Rock Art Research Association.

FindLaw

2019 Vandalism. FindLaw. <https://criminal.findlaw.com/criminal-charges/vandalism.html>.

Fox, Leo Frobenius, and Douglas C

1972 *Prehistoric Rock Pictures in Europe and Africa*. New York: Arno Press.

Freidberg, Attorney at Law

2019 Criminal Defacement of Property Freidberg. <https://www.chicagocriminalattorney.pro/criminal-defacement-of-property.html>.

History Pointer

2019 Rock Art Sites in Arkansas. History Pointer. <https://www.historypointer.com/nris/multiple/64000030/#4/38.00/-97.00>

Howard, Julie A., and Constance S. Silver

1999 The Comprehensive Preservation and Conservation Program for the Rock Art of Sego Canyon, Utah. Vols. IRAC Proceedings, Volume 2, in *Images Past, Images Present: The Conservation and Preservation of Rock Art*, by J. Claire Dean. Tucson: American Rock Art Research Association.

James, N.

2016 Replication for Chauvet Cave. *Antiquity* 90(350): 519-524.

Loubser, Johannes

2001 Management Planning for Conservation. In *Handbook of Rock Art Research*, by David S. Whitley. Walnut Creek: AltaMira Press.

Sabo, George Sabo III, and Deborah Sabo

2005 *Rock Art in Arkansas. Fayetteville: Arkansas Archeological Survey*.

National Park Service

2018 Desert Varnish. National Park Service. <https://www.nps.gov/articles/desertvarnish.htm>.

- Obert's Prestige Vacations  
2019 Blanchard Springs Caverns. Obert's Prestige Vacations. <https://obertsprestigevacations.weebly.com/arkansas.html>.
- State of Arkansas  
2019 A.C.A. § 13-6-308. Code of Arkansas Public Access: AR Bureau of Legislative Services. <https://advance.lexis.com/documentpage/?pdmfid=1000516&crid=59f0ebf0-7355-4d64-b23d-65b24069c11b&nodeid=AANAAGAADAJ&nodepath=%2FROOT%2FAAN%2FAANAAG%2FAANAAGAAD%2FAANAAGAADAJ&level=4&haschildren=&populated=false&title=13-6-308.+Vandalism+of+archeological+sites+and+artifacts+--+Penalty.&config=00JAA2ZjZiM2VhNS0wNTVILTQ3NzUtYjQzYy0yYWZmODJiODRmMDYKAFBvZENhdGFsb2FxiYCnseI0pIlgqpYkw9PK&pddocfullpath=%2Fshared%2Fdocument%2Fstatutes-legislation%2Furn%3AcontentItem%3A4WVD-MSP0-R03N-D4KY-00008-00&ecomp=k357kkk&prid=d3108323-c824-4da2-8ed4-b01da1392f01>.
- 2019 A.C.A. § 15-20-603. Code of Arkansas Public Access: AR Bureau of Legislative Services. <https://advance.lexis.com/documentpage/?pdmfid=1000516&crid=06acefcf-11fa-4141-8502-3534e2c54a05&nodeid=AAPAACAABAHAAD&nodepath=%2FROOT%2FAAP%2FAAPAAC%2FAAPAACAAB%2FAAPAACAABAAH%2FAAPAACAABAHAAD&level=5&haschildren=&populated=false&title=15-20-603.+Vandalism+--+Penalties.&config=00JAA2ZjZiM2VhNS0wNTVILTQ3NzUtYjQzYy0yYWZmODJiODRmMDYKAFBvZENhdGFsb2FxiYCnseI0pIlgqpYkw9PK&pddocfullpath=%2Fshared%2Fdocument%2Fstatutes-legislation%2Furn%3AcontentItem%3A4WVF-CC90-R03M-N2NG-00008-00&ecomp=k357kkk&prid=06e34cd8-7653-43c1-9436-1f16d73fee04>.
- Strecker, Matthias, Freddy Taboada Téllez, and Fernando Huaranca  
1999 Rock Art Protection and Conservation in Bolivia. IRAC Proceedings, Volume 2, in *Images Past, Images Present: The Conservation and Preservation of Rock Art*, by J. Claire Dean. Tucson: American Rock Art Research Association.
- Shumla  
2017 The Alexandria Project. Shumla Archaeological Research and Education Center. <https://shumla.org/research/alexandria-project/>.
- Smithsonian Magazine  
2015 Finally, the Beauty of France's Chauvet Cave Makes its Grand Public Debut. France. <https://www.smithsonianmag.com/history/france-chauvet-cave-makes-grand-debut-180954582/>.
- Swadley, Ben  
2008 Actively Managing Rock Art Sites. Rock Art in Arkansas. Arkansas Department of Parks and Tourism. [archeology.uark.edu](http://archeology.uark.edu).
- Whitley, David S.  
1998 *Reader in Archaeological Theory: Post-Processual and Cognitive Approaches*. London: Routledge.
- 2011 *Introduction to Rock Art Research*. Second. Walnut Creek: Left Coast Press.