BLACK-ON-WHITE CONNECTIONS: A LOOK AT THE RELATIONSHIP OF MIMBRES BLACK-ON-WHITE BOWLS WITH BURIALS

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ABSTRACT

From A.D. 750 – 1150, the Mimbres culture of southwestern New Mexico made unique black-on-white ceramics. Although the majority of these ceramics are not found within the context of burials, many burials contain at least one black-on-white bowl, usually inverted over the head of the buried individual. Throughout the years, scholars have attempted to explain the phenomena of the inclusion of black-on-white bowls with buried individuals, suggesting it was a mark of status. These studies mostly focused on the quantity of bowls with an individual and the design patterns among a group of individuals. Their findings reveal no significant indication of status associated with the bowls; no one individual was treated differently from any other. In the following investigation, connections between different attributes on Mimbres black-on-white bowls and burials are investigated through intra- and intersite investigations for four sites in the greater Mimbres cultural region. Through analysis of proportions and correlations this study will determine if patterns exists between the ages of buried individuals and characteristics of black-on-white bowls, specifically: degree of wear and different designs.

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INTRODUCTION

Although cultures continuously draw upon one another's influences, all cultures contain certain qualities which distinguish them from all others. The distinctive cultural identity of the ancient Mimbres of southwestern New Mexico occurred around A.D. 750 – 1150 with the innovation of black-on-white ceramics (Brody 2004). Mimbres black-on-white ceramics exhibit attributes unique to the area, displaying inimitable black geometric and figurative designs on white slipped pottery. Throughout the archaeological investigations of the ancient Mimbres, many studies have focused on this definitive artistic phenomenon, searching for meanings behind the figurative motifs, checking for artistic similarities and differences from site to site, searching for aspects which might distinguish class or kin groups. Investigations have also centered on the interment of black-on-white vessels with the dead. Although most of the black-on-white vessels recovered from Mimbres sites are not found with mortuary remains, a good majority of mortuary remains are associated with these vessels (Brody 2004). This cultural phenomenon and the significance behind it have intrigued archaeologists for many years. Today, the general theory behind the incorporation of black-on-white ceramics is a theory of egalitarianism in which the bowls with the dead reveals a simple mortuary practice for all (Anyon and LeBlanc 1984; Lekson 2006).

Many previous investigations of the utilization of Mimbres black-on-white vessels in a mortuary context have centered mostly on the quantity of black-on-white bowls buried with each individual (Anyon and LeBlanc 1984; Gilman 1990; Shafer 2003; Shafer and Taylor 1986). The vast majority of burials contain only one bowl, usually inverted over the head of the individual.

However, there are a few burials that contain more than one vessel. A study by Patricia Gilman (1990) examined Mimbres burial data from within one site, Mattocks, and among sites in the greater Mimbres cultural area. For this study, Gilman used only Classic Mimbres ceramics, those which were made from the later period of the black-on-white phenomenon from A.D. 1000 – 1150. With this data, Gilman begins her investigation of the quantity of Classic Mimbres black-on-white bowls buried with individuals in terms of their ages. Through her intrasite investigation of Mattocks, Gilman utilizes data from two different excavations, discussing them first individually, then comparing them together. From her analysis, Gilman concluded no differentiation exists between the quantity or absence of bowls between adults and subadults at the Mattocks site. Gilman also searches for possible patterns between burials and other burial goods where she finds no particular evidence in this for social organization. For the intersite analysis, Gilman compares the Mattocks to other Mimbres sites and concludes some sites may have been richer in artifacts than others, as the Galaz site contained more pottery per burial than other sites.

A similar investigation of ceramics was performed by Roger Anyon and Steven LeBlanc (1984) in an analysis of the Galaz site. Through their investigation, Anyon and LeBlanc concluded that although the Galaz site contained a higher amount of grave goods, the patterns of distribution were similar; namely there was no indication through quantity of special treatment, nor were there design similarities between those bowls that were found in close proximity to one another. Thus, Anyon and LeBlanc, like Gilman, concluded there were no overwhelming patterns to distinguish the status or significance of any particular burials. Both these investigations, along with others, have focused mainly on the quantity of black-on-white ceramics with burials, with very limited investigations of the designs on the vessels.

The following investigation seeks to find if patterns or relationships exist between different attributes of Mimbres black-on-white bowls and ages of individuals with whom they were buried at four ancient Mimbres sites: Cameron Creek, Galaz, NAN Ranch, and Swarts Ruin. More specifically, the study focuses on the possible relationship between the ages of individuals and the different degrees of wear on the bowls themselves. The majority of black-on-white bowls interred with individuals in the Mimbres cultural region demonstrate some degree of wear. This presence of wear indicates that the sole purpose of these vessels was not for the use in mortuary practices (Gilman 1990; Lekson 2006), thus a relationship may exist between the age of individuals and the vessel with which they are buried. In addition to wear, this study also centers on the possible relationship between buried individuals and the different designs on the bowls themselves. This study differs from the Galaz study by Anyon and LeBlanc (1984) and other such investigations through an examination of design in correlation with age and throughout the entire site, not merely searching for similarities in design of vessels from burials in close proximity to one another. These attributes of Mimbres black-on-white bowls are investigated independently for each site to discover possible relationships within the sites alone. The attributes of degree of wear and design are then examined through a comparison of the sites in order to find similarities and differences across the Mimbres cultural region in southwestern New Mexico.

This investigation will yield two possible outcomes: connections between black-on-white bowls and burials, either through degree of wear, design, or both attributes combined, or no identification of relationships between bowls and burials. With either outcome, this investigation into the different aspects of Mimbres black-on-white bowls will contribute to a better

understanding of the Mimbres mortuary practice of the inclusion black-on-white bowls with burials.

BACKGROUND/CONTEXT

Within the confines of the isolated deserts and valleys of southwestern New Mexico lie the remains of the Mimbres people. A cultural tradition from A.D. 750 – 1150 Mimbres is identified by its unique style of black-on-white ceramics. Traditionally, the people of the Mimbres region have been defined by a lack of social differentiation and a remarkable ceramic tradition which differentiated them from other egalitarian societies (Gilman and Powel-Marti 2006). Like other cultures, the Mimbres fed off their neighbors, adopting and individualizing practices of those surrounding them, but were able to distinguish themselves as an individual cultural tradition (Brody 2004). Although not the only culture in the southwest to develop a use of black-on-white ceramics, the ceramics of the Mimbres with intricate black geometric and figurative designs on a white background and the inclusion of these vessels with the dead constituted a cultural tradition which singularly defined the identity of the Mimbres (Brody 2004; LeBlanc 2004; Shafer 2003). These ceramics are known throughout the world as being one of the most artistic elements of the ancient North American southwest. For many years, it has been the goal of archaeologists not only to protect these distinctive artifacts, but also to seek the cultural connection between the Mimbres people and their ceramics, such as the connection of these vessels with burials.

The Environment

According to Brody (2004), it is difficult to outline precise boarders of the Mimbres cultural area due to the village being the largest political unit of the culture. The general consensus of the

boundaries of the Mimbres region is that they encompass the entirety of southwestern New Mexico, breaching slightly into eastern Arizona and northern Mexico, specifically Chihuahua (Figure 1). Although evidence of the Mimbres can be found throughout this area, the area of densest population occurs along the Mimbres River Valley and its tributaries, extending slightly to the west nearly to Silver City. It is at this location where the environment changes from barren deserts to green pine forests of the mountains (Brody 2004; Lekson 2006).

The extensive region of the Mimbres territory encompasses two distinctive environments. The climate of the Mimbres region is similar today as it was during the times of the Mimbres culture, and is generally described as being semi-arid (Brody 2004; Lekson 2006; LeBlanc 1983). However, due to the wide range in elevation, the climate and precipitation varies. Average annual temperatures can range from 60 degrees Fahrenheit in the southern part of the region to 51 degrees in the higher elevations at any given time. Annual rainfall in the region can vary from nearly 10 inches in the southern region to 14 inches in the mountains, with the monsoonal rains from July to early September providing the majority of the moisture. However, even when the monsoon occurs rain can fall heavily in one area and not at all in another (Shafer 2003). These drastic changes in climate can be explained by the changes in elevation which occur from north to south in southwestern New Mexico.

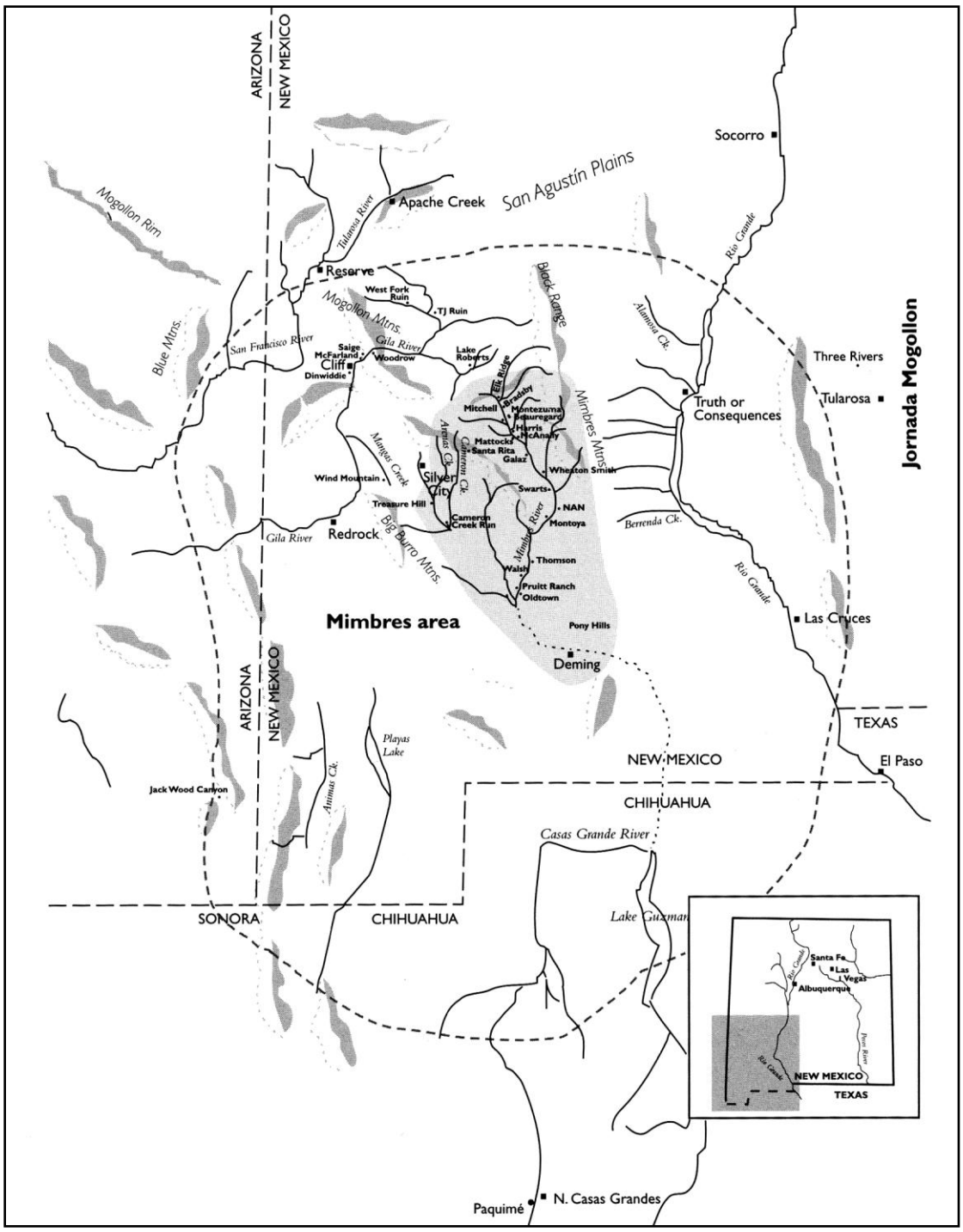

Figure 1. Map of the Mimbres Area (Brody 2004). The shaded region is the Heartland of the Mimbres Cultural area.

Flowing from the Mogollon Uplands is the Mimbres River. The Mimbres River, which is the densest area of occupation in the Mimbres Heartland, flows southeasterly through the Transitional zone before going underground. In contrast to the well watered zone of the Mogollon Uplands of the Mountain zone, the northern deserts to the south of the heartland are described as semiarid desert grasslands that form a vast plain between the Mogollon Mountains in the north and the Sierra Madre Occidental to the south.(Lekson 2006; Shafer 2003). The shift from the woodlands of the Mountain zone into the scrubs of the desert can often be dramatic within the Transitional zone (to be discussed below). Within the Transitional zone, the forests are reduced to scattered stunted junipers among clumps of grass, creosote bush, greasewood, ocotillo, scrub oak, and cholla, prickly pear, agave, and yucca (Brody 2004; Lekson 2006; Shafer 2003). However drastic the change between the ecological zones, the Transitional Zone incorporates the best of both worlds.

The Transitional Zone

In between the drastic changes from well watered uplands to semiarid desert grasslands, lies the Transitional zone where the largest of the Mimbres villages were located along the base of the Mogollon Plateau, the heartland of Mimbres culture centering around the Mimbres River. This foothill zone marks the most habitable region in the Mogollon area (LeBlanc 1983). The foothills are characterized by the overlap of the two critical environmental zones that establish a permanent water source from the mountains and the long growing seasons of the low desert (Lekson 2006). Although the vegetation of the desert area is dominated by grasslands with mesquite, creosote bush, acacia, and several desert succulent species, the Transitional zone is a green belt including cottonwood, willow, ash, and walnut trees (Shafer 2003). However, unlike the Mountain zone, the temperatures and climate of the Transitional zone allow for an extensive

season of farming. The northern end of the Transitional zone is marked by the pinyon-juniper forests gradually giving way to the western yellow pines and ponderosas (Brody 2004). This Transitional zone marked a habitat of something in between the mountains and the desert. With a reach into the surrounding ecological habitats, it was in this zone the Mimbres thrived (Brody 2004; Lekson 2006; Shafer 2003).

Exploitation of the Environment

Animal life within the varying ecological zones of the Mimbres-Mogollon region was rich throughout the entire area, with evidence indicating a greater abundance of game in prehistoric times. The most common large game animals in the southwest are deer and pronghorn with a few elk. Evidence from the archaeological sequence, however, indicates the exploitation of other fauna. Among the desert fauna present include jackrabbits, cottontails, rats and mice, prairie dogs, skunks, coati, squirrels, and various birds. As mentioned, largest of the desert game are deer, pronghorn and a few elk, along with these fauna, bighorn sheep are also recovered in the archaeological record. Many reptiles and amphibians are also present along with varieties of insects. Most of the same species of desert fauna are also found in the mountains in the northern part of the territory, with deer increasing in size. In addition to these large animals bear and mountain lion are also present in the Mountain zone and wolf was present in early times (Brody 2004; Shafer 2003). Fish, although present in the area and in the archaeological record, do not appear to have been a popular food among the natives of the southwest as the species in the southwest are not a very efficient source of meat (Lekson 2006). Along with the procurement of wild sources of meat, the Mimbres utilized a variety of botanical resources.

Within their shifting environmental territory, the Mimbres exploited both wild and domesticated plant resources. Reliable wild plant food resources in the area include agaves,

acorns, mesquite, beans, and pinyon nuts. Although all of these were utilized, agaves were the primary wild plant food that was storable in the southwest. Wood was also gathered as important resource for the making of tools, a source of fuel, and as a building material. In addition to these wild plant sources, the Mimbres also cultivated corn, beans, and squash for dietary needs and cotton for woven goods (Brody 2004; Lekson 2006). Along the floodplain of the rivers, farming worked well for the Mimbres heartland on the terraces above the river through the incorporation of irrigation techniques (Brody 2004 ; Lekson 2006; Shafer 2003, 2006). In any way the Mimbres utilized the environment around them, it is evident that they had a specialized knowledge of their environment which allowed the people to thrive for many years in the shifting climate of southwestern New Mexico.

The Archaic

The region of the Mimbres has been occupied by people since around 10,000 B.C. by the descendants of those who crossed Beringia. The first peoples in the region were mobile hunter and gatherer groups focusing on the procurement of large game for food. These first inhabitants of what is called the Paleoindian period are not very well known as the majority of investigation of the area focuses on the Mountain and Mountain-Transition zones where no evidence for Paleoindian occupation has been recovered. Somewhat better known is the Archaic period, especially the Late Archaic (Brody 2004; LeBlanc 1983; Lekson 2006).

It was during the Archaic that people began to exploit wild resources within increasingly smaller areas. In southwestern New Mexico, the area encompassed the seasonal migration from the Mountain to Desert zones of the Mimbres Valley region (Brody 2004; Lekson 2006). With the narrowing of territory, it appears as if, eventually, the people of this area began to settle down and progressed to what is now known as the Mimbres-Mogollon culture (Brody 2004; LeBlanc

1983; Lekson 2006). Around 800 B.C., it is hypothesized that the southwest was introduced to maize agriculture. However, although there is some indication that maize was being used, even in the Archaic, it does not seem to have been extremely important. Settlements at this time consisted of small, shallow pithouses which were occupied only seasonally. This is strengthened somewhat by the fact that the Archaic people had no pottery. Within the Mogollon region, people continued to live in a nomadic lifestyle until around A.D. 200, when the increased reliance on agriculture and new technology allowed for a more permanent settlement pattern. It was at this time that the Mimbres-Mogollon culture emerged from the greater Mogollon cultural tradition (LeBlanc 1983).

The Mimbres-Mogollon

Around A.D. 200 the Mimbres culture emerged as a subdivision of a larger group of southwestern agricultural people known as the Mogollon. Scholars have organized the prehistory of the North American southwest into three distinctive geographical areas based upon differences in ideological and technological innovations of each region. These groups include the Anasazi, the Hohokam, and the Mogollon, with each subdivided into smaller cultural traditions that are slightly distinctive from their larger cultural group but still share in some of the same ideals (Cordell 1984). However, among the later Mogollon peoples each subdivision could be distinguished from each other by style, technology and geography, similar only in their manufacture of red- and brown-ware pottery (Brody 2004). The most spectacular and well known of the Mogollon subdivisions is the Mimbres. The Mimbres culture was located in an area which allowed the Mimbres to thrive and reach high population densities that are only possible in that area, and allowed for extensive trade with a variety of groups to the north and to the south. As a consequence the, Mimbres culture has come to be nearly synonymous with the

Mogollon cultural tradition and the Mimbres are considered to be the true innovators of the Mogollon region (Hegemon 2002; LeBlanc 1983; Lekson 2006). Throughout the years, a great many material and ritual traditions evolved locally among the Mimbres people, mainly expressed in their vividly expressed pottery and mortuary practices.

The Early Pithouse Period

The earliest permanent settlements of the Mimbres occurred in the Early Pithouse Period (A.D. 200 – 550) and consisted of an altered building pattern of small villages with now large, deep circular/oval pithouse structures (LeBlanc 1983; Lekson 2006). The appearance of these small pithouse villages marked the first appearance of the Mimbres-Mogollon. The villages were located on high knolls away from the floodplains of the sources of water and the farmlands on the floodplains. Along with sedentary practices, the people of the Mimbres region began to rely increasingly on small scale agriculture, or horticulture. This dependence on horticulture affected the Mimbres way of life as patterns of movement and activity began to focus on the sustaining of an agricultural way of life (Anyon and LeBlanc 1984; Brody 2004; LeBlanc 1983; Lekson 2006).

With the introduction of agriculture in the area came the first production of ceramic technology in the area, mainly jars, for the use of cooking and storing vessels (Anyon and Leblanc 1984; Brody et al. 1983). The ceramic assemblage of the Early Pithouse period constituted an assemblage of plain brown-wears of the general Mogollon region. These undecorated brown-wares, consisted mostly of jars for cooking and storage. This pottery, although undecorated, sometimes had a reddish hue, through the appliance of a red wash applied after the vessel was fired (Brody 2004; Brody et al. 1983; LeBlanc 1983; Lekson 2006; Shafer

2003). This very first production of ceramics marked the beginnings of evolution of black-on-white pottery.

Although a variety of material remains are found among the small villages of these earlier times, including the beginnings of the evolution of ceramics. Formalized burials have yet to be found and appear to not yet have been established during this period (Anyon and LeBlanc 1984; Brody et al. 1983; Shafer 2003).

The Late Pithouse Period

Throughout the Early Pithouse period, population began to steadily increase, along with the increased reliance on agriculture, and increase in social complexity. The end of the Early Pithouse period gave way to the Late Pithouse period (A.D. 550 – 1000). This period, began a series of subtle adaptations throughout the entire Mogollon cultural area (Anyon and LeBlanc 1984; Brody et al. 1983). Villages were now located just above the floodplain rather on the tops of high knolls, appearing to reflect the growing population. Still maintaining continuity in Mimbres material culture of the previous period, the most distinctive traits of the Mimbres began to emerge within this period (Brody et al. 1983; Lekson 2006). During this time, villages remained generally of equal size, but great communal structures also began to appear in villages, agriculture began to play a significant role in subsistence to sustain the growing population, the first painted pottery began to be produced, and Mimbres burial traditions were established and maintained throughout the entirety of the cultural tradition (Anyon and LeBlanc 1984; Brody et al. 1983).

In order to maintain the organization of the period, the Late Pithouse period has been divided into three separate phases based upon different innovations in ceramic technology. The first phase, known as the Georgetown Phase, lasted from A.D. 550 – 650. The Georgetown

Phase differs little from the Early Pithouse period, marked only by the presence of communal structures and the innovation of San Francisco Red ceramics. These ceramics are marked by a highly polished thick clay slip to which red hematite had been added to produced a red color (Anyon and LeBlanc 1984; LeBlanc 1983; Shafer 2003). This red slip is considered to be a refinement of the previous reddish brown-wares and established the later development of painted pottery. This ceramic tradition also shows a connection with the Mimbres burial tradition of the inclusion of bowls with the burials. These burials were entirely extramural burials containing well made ceramics as grave offerings. More rapid changes in the Mimbres region began after A.D. 650 until around A.D. 1000 (LeBlanc 1983).

The second Late Pithouse phase, the San Francisco Phase, lasted from A.D. 650 – 750. characterized by the development rectangular from oval pithouses and the initial presence of Mogollon red-on-brown ceramics. The architecture of this time period are characterized by rectangular pithouses with rounded sides. Also during this time period, was the innovation of the firsts painted ceramics, the Mogollon red-on-brown. These wares comprised of vessels which utilized the red slip of the San Francisco Red pottery. Rather than the slip being applied on the whole of the vessel, the slip was applied on outside of the vessel and as paint on the surface of the brown clay on the interior of the vessel. These preliminary painted vessels consisted of simple, linear geometric designs. Mogollon red-on-brown vessels were made very infrequently and only then in bowl form. During this phase, some bowls were utilized as mortuary items in burials. Burials at this time were placed away from occupied structures in the soft fill of previously abandoned pithouses. The red-on-brown bowls were usually placed beside the body, sometimes, however, vessels were deliberately broken and the pieces scattered within the grave.

Painted ceramics continued to develop further throughout the final centuries of the Late Pithouse period (Anyon and LeBlanc 1984; Brody 2004; Brody et al. 1983; LeBlanc 1983).

The final phase, or Three Circle Phase, of the Late Pithouse period occurred around A.D. 750 – 1000. This third phase constitutes the bulk of evidence from the Late Pithouse period of the area. During this time, pithouse structures consisted of rectangular and square houses with squared corners. During this period, painted ceramics eventually shifted from red-on-brown to the well known black-on-white. The first step towards black-on-white during this time was the innovation of Three Circle red-on-white pottery. While the outside of the vessel was still red-slipped, this innovation required the application of a white clay slip to the inside of the vessel, presumably to intensify the red paintings inside the vessel. The designs during this time period began to produce curvilinear design elements. Three Circle red-on-white ceramics had a very short life span. Lasting for only a few generations, this phase of painted ceramics was soon replaced when the Mimbres began to fire vessels with reduced oxygen in order to produce a black paint finish. This change establishes the beginning of the Mimbres black-on-white ceramic tradition with Style I and Style II black-on-white bowls (to be discussed below) (Anyon and LeBlanc 1984; Brody 2004; Brody et al. 1983; LeBlanc 1983; Shafer 2003).

Evolution in mortuary practices were also apparent during the Three Circle phase, with the greatest variability in mortuary practices. First of all, burials are more frequently intramural. These intramural burials differed from the previous intramural burials during the San Francisco phase in that the graves were beneath the floors of pithouses that were still being occupied. However, a large number of burials also took place in other locations, including under the floors of abandoned pithouses, outside of houses, and also under the floors of larger structures which are classified as kivas. Cremations were also practiced in this time period and in following

periods. Intramural cemeteries are also claimed to have been established during this time. These cemeteries are described as the occurrence of burials under the floors of structures. The cemeteries occurred either under habitation rooms or under the floors of communal kivas and were established for the burials of adults of both sexes, children, and infants. Intramural cemeteries can contain one or more burials (Anyon and LeBlanc 1984; Brody 2004; LeBlanc 1983; Lekson 2006; Shafer 2003; Shafer 2006).

Grave goods among Three Circle Phase burials were common among burials, but usually only consisted of a single painted bowl. At first, ceramic association with burials included intact vessels placed next to the body or the scattering of a smashed bowl scattered in the burial pit. By the end of the period, the trademark of Mimbres burials of placing an inverted perforated bowl over the heads of individuals evolved out of the smashing and scattering the pieces of the bowls. These practices of burials were strengthened at the end of the Late Three Circle Phase and continued to be practiced throughout the Classic Mimbres period (Anyon and LeBlanc 1984; Brody 2004; LeBlanc 1983; Lekson 2006; Shafer 2003; Shafer 2006).

Following the Late Pithouse period is the Classic Mimbres period which is the most distinctive period of the Mimbres cultural tradition. The beginning of the Classic Mimbres period constitutes the peak of population of prehistoric occupation of the area. The increase in population by the end of the Late Pithouse period called for a change to a more intensive use of agriculture through the construction of irrigation systems in order to sustain the population (Anyon and LeBlanc 1984; Brody 2004; LeBlanc 1983; Lekson 2006; Powell-Martí and James 2006). Village life in the Classic Mimbres period centered around this production and procurement process of food. Also during this period was the replacement of one room

pithouses with above-ground dwellings, built of cobble set in adobe (Anyon and LeBlanc 1984; Brody 2004; Brody et al. 1983; LeBlanc 1983).

Not only was the Mimbres culture changing in terms of structures and agricultural dependence, but also the continuation and florescence of practices carried over from the Late Pithouse period. The artistic focus of the Classic Mimbres period was heavily focused on the production of painted black-on-white bowls, which in the Style III stage consisted of both figurative and geometric design classes (to be discussed below). Another tradition carried on and elaborated during the Classic Mimbres period was mortuary traditions. During the Classic Mimbres phase, the trend toward intramural cemeteries became the dominant pattern. Burials, like in the late Three Circle phase, predominately were associated with bowls inverted over the heads of individuals, usually with the incorporation of a kill hole. The Classic Mimbres period not only constitutes evolution of previously established Mimbres practices and changes in material remains, but also raises many questions on the conditions of social stratification (LeBlanc 1983; Shafer 2003).

There are many debates on the nature of the Mimbres culture during the Classic Mimbres period concerning social hierarchy. During the this time, there were roughly twenty larger villages in the Mimbres area. The villages are distinct from the rest of the sites not only in their large size, but these large villages also yield a number of exotic finds, including turquoise and remains of macaws. The large sites also reveal a decrease in energy invested at the site. From these differences in sites, researchers have gathered that high-status individuals would occupy these residences. Indication of high status can be marked either by more elaborate graves or more grave goods than the whole of the population. While there has been a recovery of rock-lined graves and graves containing a lot of grave goods, there has never been found a rock-lined

burial containing a lot of grave offerings. These "elaborate" graves are also not located in any particular place nor is it distributed among a specific age or sex group (Anyon and LeBlanc 1984; Brody 2004; Leblanc 1983; Shafer 2006). According to a general consensus, the Mimbres were in an essentially egalitarian people, with the implication of possible elites at a few villages (Leblanc 1983; Lekson 2006).

By the end of the Mimbres cultural tradition, the people ceased in their production of distinctive painted ceramics and disappeared as an identifiable tradition around A.D. 1150 (Anyon and LeBlanc 1984; Brody et al. 1983). The reason for the abandonment of the area and the Mimbres cultural tradition is yet unknown. It is possible that the growing population exceeded the limitations of the land's ability to support it (LeBlanc 2006). In the two decades prior to A.D. 1150, environmental conditions began to deteriorate possibly due to drought or the over-intensive use of the land, which could also attribute to the decline of the Mimbres (Brody et al. 1983; Powell-Martí and James 2006). An alternative considered, was also the possibility of the growing culture of Casas Grandes to the south either dominated or incorporated the Mimbres culture (Anyon and LeBlanc 1984; Brody 2004; Brody et al. 1983; LeBlanc 1983; Shafer 2003). Whatever the cause, the Mimbres and their traditions seem to have disappeared from the area and their exact destination is yet unknown as no contemporary cultures have been matched to them (LeBlanc 1983; LeBlanc 2006).

Black-on-White Ceramics

Prior to the emergence of Mimbres black-on-white pottery, painted ceramics were only a minor factor in any Mogollon Region. Although, nearly all complete bowls of the Mimbres have survived in the context of burials, a great majority of Mimbres sites have yielded thousands of pottery sherds from a great many contexts. This evidence of vast quantities of sherds from

broken bowls, clearly indicates the use and eventual breaking of Mimbres ceramics through the course of daily activities of the Mimbres (Brody 2004; Brody et al. 1983; LeBlanc 1983). Along with the appearance of these black-on-white vessels in living contexts, an analysis conducted by Bray (1982) on use-wear of mortuary vessels indicated that the bowls were used for the serving and eating of foods. Furthermore, an analysis conducted by Lyle (1996) in the study of use-wear indicated that the inclusion of black-on-white bowls in the mortuary context indicate that mortuary ritual usage of the vessels was a secondary function rather than a primary function of the vessels, including those vessels which had little or no indication of wear. However, a good majority of black-on-white bowls have been recovered within the context of burials and this association has marked a unique quality of the Mimbres cultural tradition (Brody 2004; LeBlanc 1983; Shafer 2003).

With the innovation of these black-on-white ceramics and their inclusion in burial contexts, the Mimbres established their unique cultural identity. As such, it is important to understand these material remains. As mentioned above, this tradition of Mimbres ceramics began around A.D. 750 with the realization that the reduction in oxygen caused the red paint to turn black. Once established, this ceramic tradition remained the constant for nearly 350 years, changing only in the execution of design and the design patterns themselves. The design stages of Mimbres black-on-white ceramics are divided into three major styles based on temporal changes in design: Style I or Boldface (A.D. 750 – 950), Style II or Transitional (A.D. 950 – 1000), and Style III or Classic Mimbres (A.D. 1000 – 1150).

Style I/Boldface (A.D. 750 – 950)

The very first innovation of Mimbres black-on-white ceramics emerged at the end of the Late Pithouse period with the execution of Style I or Boldface (Figure 2). Hence the name, Mimbres Style I is distinguished by bold geometric line designs (Brody 2004; LeBlanc 1983; Shafer

2003). The designs usually extend to the rim of the bowl through the use of linear designs. Designs, however, are not always linear, but sometimes include interlocking motifs, one such motif incorporates the use of wavy lines. Wavy lines are often used as a filler or hachure in bordered straight line fields. Wavy lines are also used to depict the curvilinear elements of circular designs such as spirals. Wavy lines also provide a ruffled appearance to many solid motifs, such as triangles and rectangles (Brody et al. 1983; LeBlanc 1983; Shafer 2003).

Figure 2. Style I (Anyon and LeBlanc 1983).

Designs of ceramics constitute the incorporation of motifs into distinctive layouts of the designs of the vessels. The layout of Style I bowls falls into three types: quadrant divisions, circular, and in unbroken fields across the surface of the bowl. The quadrant type is divided into four equal parts with each containing a version of the same design. This layout is the earliest found on Style I bowls was also often used in earlier red-on-brown and red-on-white vessels. The most common motif on Style I bowls are interlocking and non-interlocking scrolls extending toward a solid triangular motifs Different common geometric designs are depicted on Mimbres At this stage of Mimbres black-on-white development, figurative motifs appear only rarely. As

time went on, designs began to take on more straight line hachure elements marking the next step into the Style II black-on-white bowls (Brody et al. 1983; LeBlanc 1983; Shafer 2003).

Style II/Transitional (A.D. 950 – 1000)

Early Style II, or Transitional, Mimbres black-on-white (Figure 3) shows many of the same characteristics of Style I, including the extension of the design to the rim, and is distinguished by the use of fine lines as hachure in elements bordered by bold lines that replace the wavy-line hachure of Style I. Style II was a step in the direction of the replacement of coarse line-work of Style I with finer line-work. A circular field was also used during this time where the center of the bowl was left unpainted. Along with these early developments, Transitional Style designs on black-on-white bowls began to incorporate a rimband to which the designs began to be extended. Designs in the latter Style II design show a shift to the design being suspended, or freestanding from the rimband (Brody 2004; LeBlanc 1983; LeBlanc 2006).

Figure 3. Style II (Courtesy of the Peabody Museum, Copyright President and Fellows of Harvard College).

Also changing at this time was the design layout of black-on-white bowls, in which they became even more complex than in the previous Style I. The quadrant layouts of the previous Style I are sometimes seen on early Style II bowls, but are seemingly more complex. More commonly, Style II bowls are divided into halves, rather than quadrants, with mirror images or inverted mirror images represented in each half. With the layout becoming increasingly more complex, so too did design. During this progressing period, the Mimbres also began to incorporate a greater use of figurative design which became increasingly popular with Style III bowls (Brody et al. 1983; Shafer 2003).

Style III/Classic Mimbres (A.D. 1000 – 1150)

Mimbres painted ceramics reached their height in the Middle Style III of black-on white ceramics. The shift from Style II to Style III subtle as early Style III carried over many of the same traits of Style II, including the use of two- and four-quadrant fields, and the design still drawn all the way to the rim in some vessels. The entirety of decoration on many Style III vessels consists of fine-line hachure bordered by multiple fine-lines which typifies them as Style III (Shafer 2003). By this time, the four equal quadrants do not appear as obvious as they had earlier (Brody et al. 1983). Another aspect that typifies Style III vessels are the use of multiple rim-bands, generally through the use of fine-lines, thick-lines, or a combination of the two (Brody et al. 1983; Schafer 2003). The quantity and degree of thickness of rim-bands constituted a division of Classic Mimbres into Early, Middle and Late stage Style III. Within this distinction of Classic Mimbres appears designs framed by the use of multiple fine-lines. By the Late Style III, multiple rimbands were replaced by a solid band at the lip extending into the interior of the bowl (Brody 2004; Brody et al. 1983; LeBlanc 1983; Shafer 2003).

With a change in layout also came an increasing refinement of figurative design depictions. Where before there was more strict use of geometric design, as it was the first innovation of black-on white ceramics, the popularity of figurative design reached a peak during the Style III design phase. During the Classic period, nearly one third of the mortuary vessels have figurative motifs, whereas before they only constituted a very small and rare minority among vessels. Geometric design also became very refined and more schooled with the increasing use of more angular and fixed designs than there were in previous times. In any case, it becomes apparent that black-on-white ceramics are distinguished by two design classes which can be found within mortuary contexts (Brody 2004; Brody et al. 1983; LeBlanc 1983; Shafer 2003).

Figurative vs. Geometric

Mimbres black-on-white vessels utilize two different types of design traditions: geometric and figurative (Figures 4 and 5). The majority of Mimbres black-on-white vessels are geometric, or non-representational constituting lines which form a variety of continuous or non-continuous shapes. In geometric painting, lines are incorporated a variety of thickness in order to express various geometric patterns (Brody 2004). Geometric patterns are predominately the most expressed vessels among sites as prior to the Style II period, figurative designs were very rarely found on Mimbres ceramics. However, figurative design gained increasing popularity during the Mimbres Classic (A.D. 1000 – 1150), but was still unable to surpass geometric design.

Figure 4. Style III Geometric Design (Shafer 2003).

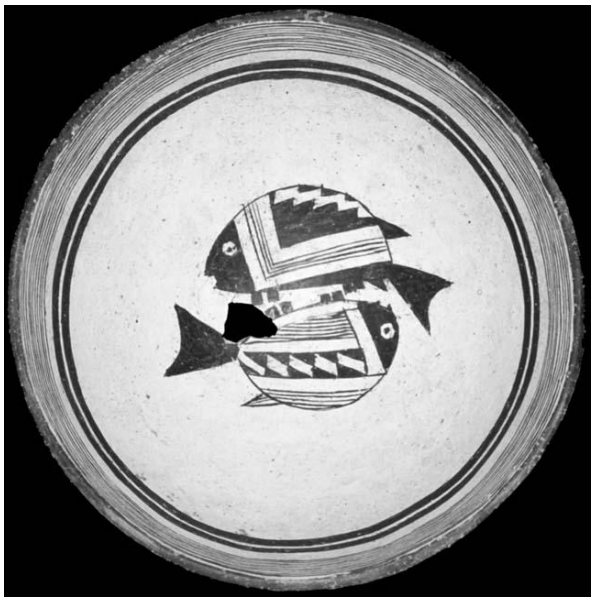

Figure 5. Style III Figurative Design (Shafer 2003).

Figurative designs hold the greatest attraction to scholars of the Mimbres culture today, although they are often less complex than the geometric motifs which survived and dominated throughout the whole of the innovation of Mimbres black-on-white ceramics. Approximately 20% of the approximately 7000 known Mimbres bowls are figurative, most depicting a single image isolated within a confined space of the vessel. The visual organizations that contain more than one image are laid out similarly to geometric motifs on the ceramics in terms of sectioning of bowls for multiple images. However, there are few figurative compositions that present with multiple images, and even less are formalized. These bowls depict a variety of everyday objects and scenes. The interaction of multiple figures, for example. suggest a kind of real world environment with the contextual details left to the interpretation of the viewer. These contextual details can refer to the curved shape of the bowl, which seemingly is used to strengthen the illusion of real-world spatial relationships. Other depictions on bowls represent a possible religious significance, especially in bowls that have no apparent interpretations. Many have

hypothesized the meanings behind the depictions on the bowls, but nothing can be interpreted for certain without firsthand knowledge. Through all of the research done on Mimbres bowls there has been no indication of social differentiation with the different depictions (Brody 2004; Brody et al. 1983).

The Sites

Although many sites in the Mimbres region date to one or both of the time periods for which Mimbres black-on-white ceramics were made, only a few have been identified as being associated with the unique mortuary practice and only these contain data relevant to the present study. Situated in the Mimbres heartland, the sites of Cameron Creek, Galaz, NAN Ranch and Swartz Ruin were all occupied during since at least the Late Pithouse (A.D. 750 – 1000) through the Classic Mimbres (A.D. 1000 – 1150) periods (LeBlanc 1983; Shafer 2003) (Figure 6). However, exact dates of these sites are left for speculation as no sufficient samples can be taken for dating. All four sites were proven to be associated with the mortuary practice for which the Mimbres were known for.

Excavated in the early 1930s by Wesley Bradfield (1931), the site of Cameron Creek was located to the west of the Mimbres River valley next to Cameron Creek (Figure 6). Although not situated among the densest area of population in the valley, the Cameron Creek site was still considered to be within the densest area of population. Although excavated in the early 1930s, the Cameron Creek site had some extensive documentation on the burials and what bowls were associated with each individual (MimPIDD 2009). However, the human remains at the site were not very well preserved, and most crumbled with the slightest disturbance. As a result, the remains were not able to be sexed. Age, however, was determined for the buried individuals at

the site, but a little over a third of the remains were documented as being of indeterminate age (Bradfield 1931; MimPIDD 2009).

Similar to the Cameron Creek site, the first two excavations at the Galaz site were conducted by Wesley Bradfield with the aid of the University of Minnesota. Even though it was excavated at a time when researchers were looking for evidence of the unique mortuary practice conducted by the Mimbres, the first excavations were a great start to the record of a large Mimbres site. The majority of remains recorded from this first investigation are attributable to the Classic Mimbres period (A.D. 1000 – 1150). The third excavation was conducted by Steven LeBlanc (1983) and the Mimbres foundation in the 1970s as a salvage excavation. The site had been leased out to a man looking for the black-on-white bowls, and he planned to bulldoze the entire site. However, LeBlanc and the Mimbres Foundation were able to stop complete destruction of the site in order to excavate it. Although they were not able to salvage it all with the time and budget they had, the excavation uncovered a great portion of the Late Pithouse period (A.D. 750 – 1000) remains. Once they were done excavating, however, the site was completely demolished (Anyon and LeBlanc 1984; LeBlanc 1983).

The Swartz Ruin site excavations were conducted in the early 1930s by amateur archaeologists Burton and Hattie Cosgrove. Although amateurs, the Cosgroves had learned about excavation techniques from the Peabody Museum, which funded a great deal of their research. The Cosgroves excavated an extensive portion of the Mimbres region, and, in fact, conducted excavation in a more suitable fashion than many archaeologists of the day, with extensive and detailed records. The human remains at this site, like the Cameron Creek site, were not well preserved and sex was unable to be determined. However, ages of buried individuals were able to be determined for all but a few of the burials excavated. Along with

these burials were extensive records of vessel association, placement of grave goods along with the burial, and the location of the burial on the site. All in all, the Cosgroves were able to well document the Swartz Ruin site (Cosgrove and Cosgrove 1932; LeBlanc 1983).

The NAN Ranch site was excavated in the 1970s by Henry Shafer. This excavation yielded great data, not only in terms of the mortuary remains left by the Mimbres people, but also in terms of the total site. Although preservation of human remains still was not very good at this site, a great deal more mortuary remains were able to be aged and sexed sufficiently. However, only a small portion of individuals were recorded with sex data for an analysis of their association of black-on-white bowls (Shafer 2003).

Although three out of the four sites were excavated during a time where researchers were searching for specific data to answer specific questions, these excavation techniques were concurrent with the times. Also due to the time frame of excavation, the dating of these sites was not conducted through techniques of absolute dating. However, these excavations yielded a substantial amount of data crucial for the understanding of the Mimbres culture and, in particular, this investigation.

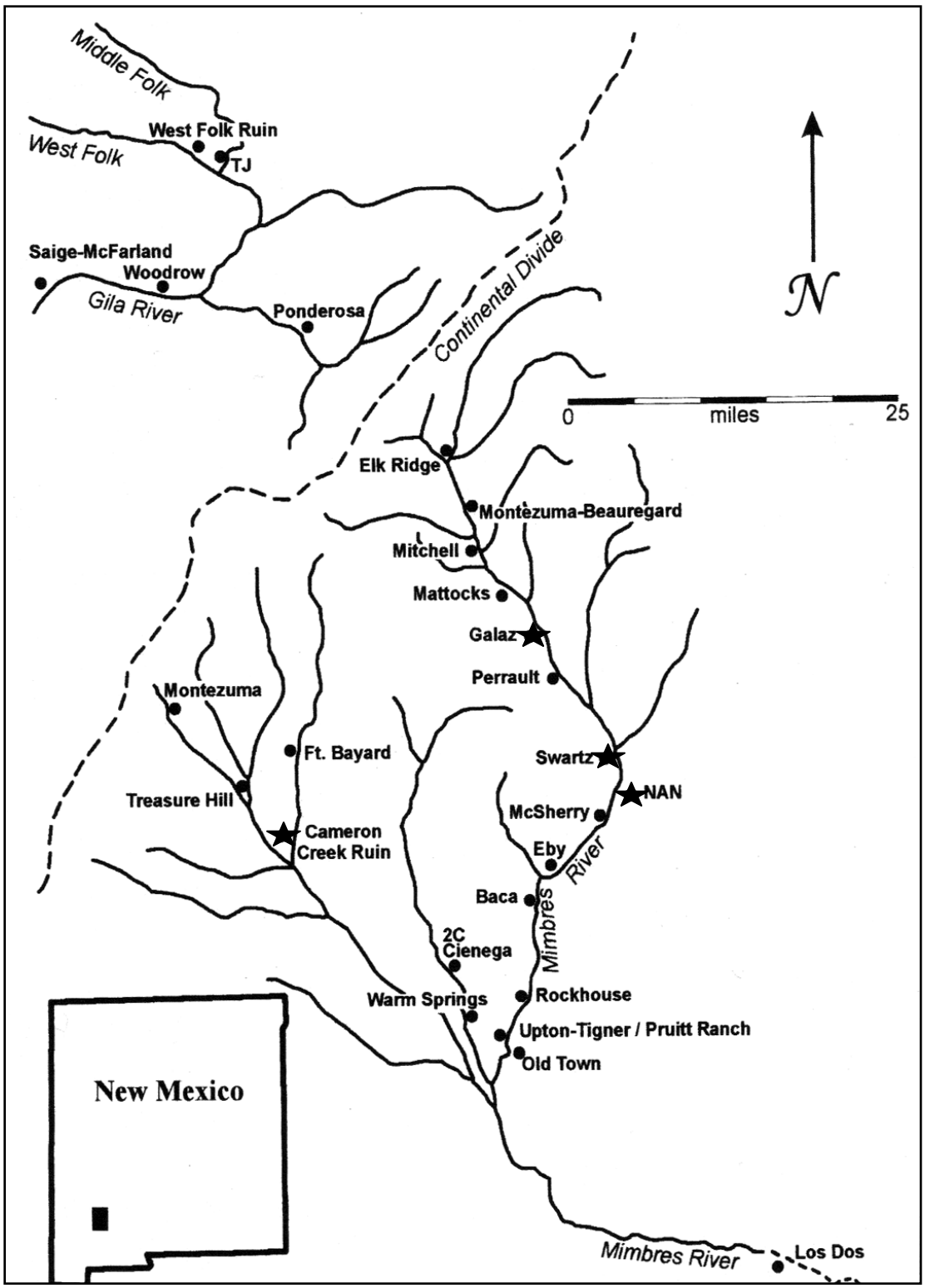

Figure 6. Map of the Mimbres heartland with all the sites investigated marked (LeBlanc 1983).

Problems in Mimbres Interpretation

The great allure of the Mimbres culture comes from the accomplishments of Style III black-on-white bows and the inclusion of those bowls with burials. Throughout the years, there have been interpretations and common myths which have been associated with the Mimbres and their practices which archaeology has attempted to quell. The common myth associated with Mimbres mortuary practices pertains to the idea of the Mimbres burying their dead with a "killed" bowl over the head of the deceased individual. However, this is not the case. The ritual of placing a "killed" bowl within burial pits and over the heads of individuals is not a common theme found within all Mimbres burials, rather this practice appears to only be associated within most burials (Shafer 2003). These myths of burials are characterizations of publications of early excavations of sites such as Swartz, Mattocks, and Cameron Creek by the Cosgroves, Nesbit, and Bradfield, respectively, in 1931 and 1932. These early contributors to the investigation of the Mimbres provided only general information of burial practices with no recording of temporal and spatial patterning of the evidence. Although these early pioneers of Mimbres archaeology contributed to the understanding of the Mimbres society, theses peoples were amateurs in search of the long sought-after bowls (Shafer 2003).

It was not the first time people were in search of Mimbres black-on-white ceramics, the contributions made by the above mentioned somewhat systematically excavated sites, while looters destroyed much of the Mimbres sites in search of these vessels. Mimbres black-on-white pottery utilized the majority of archaeological research in the area and has long been sought after by collectors. Prior to the 1920s, Mimbres black-on-white ceramics were very little known by archaeologists and were not very well protected. During the time of excavations of the early sites, systematic survey was conducted accordingly with the times. During the Depression,

however, archaeology of the region became neglected, and looters became more destructive in their attempts to search for the bowls. By the 1970s, looters went so far as bulldozing entire sites in search of those profitable material remains. The area of the Mimbres cultural region is, by far, considered to be the most extensively looted area in North America. Not a single Mimbres site was untouched by the impacts of looters. In fact, the majority of museum and private collections were procured by looters, and some early armature excavators, and have no contextual information. Despite the attempts of looters to erase the Mimbres culture from the landscape, the area today is now well protected, with scholars attempting to answer questions about the Mimbres society (Anyon and LeBlanc 1984; Brody et al. 1983; Brody 2004; LeBlanc 1983; Lekson 2006; Gilman 1990; Hegemon 2002).

Past Research

Throughout the history of archaeology of the Mimbres culture, the majority of past research has focused on interpretations of social organization and ideology, based upon studies of architecture, pottery designs, and mortuary patterns (Hegemon 2002). The majority of previous research also has mainly focused on mortuary practices, ceramics and architecture of the Classic Mimbres, with very little emphasis on the Late Pithouse period, or previous, especially when focusing on ceramics. The incorporation of ceramic and mortuary studies are important for the understanding of the Mimbres society in that Mimbres black-on-white bowls are often found in mortuary contexts (Anyon and LeBlanc 1984; Bradfield 1931; Brody 1004; Brody et. al. 1983; Creel 2006; Gilman 1990; Gilman 2006; LeBlanc 1983; LeBlanc 2006; Lekson 2006; Lyle 1996; Munson 2006; Powel-Martí and Gilman 2006; Powel-Martí and James 2006; Shafer 2003; Shafer 2006).

Many studies focus on the question of social differentiation during the Classic Mimbres period through study of mortuary practices (Creel 2006; Gilman 1990, 2006; Shafer 2006). One such study was conducted by Harry Shafer (2006). In this study, Shafer presents a model of mortuary patterns based upon the NAN Ranch ruin investigations (Shafer 2003), to reconstruct the rise of corporate groups in the Mimbres cultural region. Through this model he proposes that the evolution of irrigation networks in the Mimbres Classic led to the formation of a segmented system of competitive corporate groups. In order to emphasize the increasing complexity of the Mimbres society, Shafer focuses on the burials of the NAN ranch. According to Shafer, corporate or lineage cemeteries are indicative of the formation of complex social systems. As described above, these cemeteries contained burials with people of both ages and sexes. According to Shafer, these corporate cemeteries had restricted access and contained burials with the mortuary practice of placing a "killed" bowl over the face of the corpse. With this evidence, Shafer compared the NAN Ranch to other sites such as Swartz Ruin, finding similarities in patterns of what he determined to be corporate cemeteries housed in large structures. He concludes that the integration of communities along the valley into a codependent network of corporate groups was the result of the rise of irrigation agriculture in the Late Three Circle phase (Shafer 2006).

Along with the use of mortuary practices to investigate the Mimbres, scholars have also investigated the importance of ceramics in revealing the secrets of Mimbres society (Gilman 1990, 2006; Munson 2006; LeBlanc 2006; Powell-Martí and James 2006). The studies of ceramics range from their indication of social differentiation in the context of burials (Anyon and LeBlanc 1984; Gilman 1990, 2006), to the meanings of designs (Brody 2004; Munson 2006), to trade patterns (Powell-Martí and James 2006), to the investigation of who the individuals were

who made Mimbres bowls (LeBlanc 2006). The investigation of who made ceramics was conducted by LeBlanc, not to establish who exact people were (as that can never be known) but to establish just how many artists created the elaborate decoration of Mimbres black-on-white bowls. In his study, LeBlanc printed several photographs of Classic Mimbres figurative designs, and had various people, ranging from Mimbres specialists to artists, separate the photographs into groups of those they thought to be similar in design. From the categories laid out by the sorters, LeBlanc found the continuities within the groups, with a bit of a bias towards those who were more familiar with Mimbres black-on-white ceramics than others. The categories were divided into different groups based upon different animal categories. Through the use of this data, LeBlanc divided the groups into regional and temporal variation of design. His conclusions indicated that only a few artists at each site painted bowls at any one point in time. He also discovered that the majority of bowls created by artists tended to be from one particular site.

METHODS

In order to discover if connections exist between different attributes of Mimbres black-on-white bowls and the ages of buried individuals, this investigation utilized specific criteria for the sites selected based upon the available data in the Mimbres Pottery Image Digital Database (MimPIDD 2009). This Database comprises the ceramic assemblage of Mimbres culture as it is known to date. Each vessel known to be associated with the Mimbres was given a number, photographed, and recorded with its associated contextual information, the condition of the vessel, the temporal style of the vessel, and any attributes the vessel possessed (Table 1 – Example of Dataset). Through the recording in the Database of the attributes associated with

Mimbres black-on-white vessels, it was possible to select data feasible for the present investigation and incorporate that data into a statistical analysis.

Site Selection

To address the question of possible existing relationships between the ages of interred individuals and attributes of degree of vessel wear and design sites were selected based upon the available data from the Mimbres Digital Database (MimPIDD 2009). For the purpose of this investigation, it was important for the sitesto have data relevant to the association of Mimbres black-on-white bowls. Of the excavated Mimbres sites, eight were distinguished as having vessels found within the context of burials. However, from these eight sites only four were chosen: Cameron Creek, Galaz, NAN Ranch, and Swartz Ruin. While the other four sites contain evidence of bowls buried with individuals, they either did not contain a sufficient number of black-on-white vessels recorded with burials, or did not have the ages of the individuals recorded in the Database which this study utilized. The four chosen sites all contain data pertinent to this investigation, including age data, wear data, temporal information, design classification, and specifics of design. The four sites of Cameron Creek, Galaz, NAN Ranch, and Swartz Ruin also comprise of adequate dataset consisting of 136, 604, 143 and 505 burial-associated black-on-white bowls respectively, for a total of 1388 bowls. With these four sites, connections were able to be determined through both intrasite and intersite investigation.

The Data

One key part of this investigation was to search for patterns between the age of buried individuals and the degree of wear on Mimbres black-on-white bowls. In the Mimbres Digital Database, wear was classified based upon absent, light, light/moderate, moderate, heavy/moderate, and heavy wear (MimPIDD 2009). While the Mimbres Digital Database

provides sufficient data on the degree of wear on each vessel associated with this research, it was still vital to gain a better understanding of how degree of wear on vessels was determined by researchers. In order to better comprehend the decision of degree of wear, investigations of vessels housed at the University of Colorado at Boulder and from the Maxwell Museum of Anthropology were conducted. In examining the Mimbres black-on-white bowl collections at the University of Colorado at Boulder, Dr. Stephen Lekson presented vessels with the different degrees of wear. In contrast to this visit, investigations at the Maxwell Museum of anthropology consisted of an individual examination of the vessels in order to put recently learned knowledge to use. Through this acquired knowledge of the differences degree of wear on vessels, the attribute of different degrees of wear associated with the bowls of buried individuals was grasped.

In order to satisfy the connection between design on Mimbres black-on-white bowls associated with the ages of buried individuals, this investigation referenced Mimbres Pottery Image Digital Database (2009). Mimbres black-on-white bowls contain two types of design class: Geometric and Figurative. Within the Database, these two design classes were distinguished along with the layout of the design, and the classification of the vessels into general and specific categories of each design class. The layout of the design was recorded along with a separate designation for the detail of the layout. For this investigation, only the general categories of each design class were incorporated in this investigation as specifics of both geometric and figurative design appeared different on each bowl.

To answer the question of the connection of ages of buried individuals and the combination of degree of wear and design, the vessels were placed into categories based upon both attributes. Every design category of class, and general design was put into categories based

upon degree of wear found on the associated painted vessels. For example, geometric bowls with an Angular design would be placed into categories based upon the degree of wear associated with that vessel, light wear for instance.

Along with the data of bowl attributes and ages of buried individuals included in the record of each vessel, each site also contained a record of the temporal style of each of the vessels. In the Database, style was divided into Style I (Boldface), Style II (Transitional), and Style III (Classic Mimbres). Through the use of these three temporal styles, it was possible to trace the connections of the attributes and age of buried individuals through the course of time, from A.D. 750 – 1150. This investigation also allowed for the investigation of the possible transition to regional variation in the inclusion of specific Mimbres black-on-white bowls.

Data Problems

While the Mimbres Pottery Image Digital Database (2009) contains sufficient data of the attributes of degree of wear and design for black-on-white bowls associated with a buried individual at the sites of Cameron Creek, Galaz, NAN Ranch, and Swartz Ruin, some vessels with insufficient data must be taken into account. The comparison of the individuals through sex data was eliminated right away as only a few individuals contained sex data. While the vast majority of vessels contain a description of wear on the vessel, there were a few vessels for which wear was classified as being "indeterminate." Along with this deficiency, a few bowls were categorized with a design class described as "blank," "uncertain," or "other" for which no sufficient data of the specifics of the design were known. The vessels lacking in data relevant to the attributes of wear and design were eliminated. Vessels and individuals were also excluded if the age of the buried individual was unknown, labeled as "IndeterminateAll things considered,

while certain vessels lacked in information on the attributes of wear and design or the age of individuals, the majority of vessels from each site contained the adequate data.

Data Analysis

In order to determine if connections exist between attributes of Mimbres black-on-white bowls and ages of buried individuals, this investigation utilized statistical analysis of the different categories of the attributes along with the ages of buried individuals. While the Database was sufficient for the compiling of data of each vessel, it was not adequate for statistical analysis (MimPIDD 2009). For a more suitable way to work with the available information, the data was put into an Access database in order to categorize the information based upon the degree of wear and design attributes on which this study focused. From this Access database, the data was more efficient to use in analysis using proportions and correlations.

The first statistical analysis used to study the connection between ages of buried individuals and the two attributes was proportions. The Mimbres Pottery Image Digital Database (2009) categorized individuals into age categories based upon a series of ranges: Infant (0-2 years), Child (3-10 years), Adolescent (11-18 years), Subadult (<19 years), Medium Adult (19-40 years), Old Adult (>40 years), Adult General (19 years or older). For each of these age groups, percentages of each different category of degree of wear were calculated based upon the number of individuals of the specific age group associated with vessels containing that amount of wear. For example, the percentage of light wear for Infants (0-2) was calculated in relation to the total number of bowls associated with Infant (0-2) burials. Likewise, the proportions of each design category of figurative and geometric design were found based upon the number of vessels with that design in relation to the total number of vessels with that design. For example the total proportion of figurative design for an age group divided by the total of vessels associated with

that age group. After the calculation, proportions were graphed for a visual interpretation of the data and each attribute's correlation with age.

A statistical analysis using chi-squares was also conducted to determine if there were differences between Mimbres black-on-white bowl attributes with the ages of buried individuals. This investigation was vital in the determination of significance of the differences between the ages of individuals and the attributes of degree of wear and attributes design in the terms of intrasite and intersite investigation and the confidence in which these differences occur.

Through the statistical analyses utilized in this study, the data was able to be presented so as to reveal the connections between the ages of buried individuals and the attributes of Mimbres black-on-white bowls. In using the different sites, it was determined if the connections were regionally or culturally based. And through the inclusion of the temporal styles in the Mimbres Pottery Image Digital Database (2009), connections between attributes of bowls and ages of interred individuals were able to be traced through time.

WEAR RESULTS AND DISCUSSION

The first question to be addressed from this research is the possible connections between ages of buried individuals and degree of wear. To investigate the connection between this characteristic of Mimbres black-on-white ceramics and the ages of buried individuals, four different sites were investigated that were occupied during the Late Pithouse (A.D. 750 – 1000) and Classic Mimbres (A.D. 1000 – 1150) periods: Cameron Creek, Galaz, NAN Ranch, and Swartz Ruin (LeBlanc 1983; Shafer 2003). While all of these sites presented similarities in their results, they also had individual traits which defined their own identity within the Mimbres cultural tradition.

As explained above, the study of wear proportions were reviewed in order to discover the correlation of wear with age. In essence, proportions were utilized in order to see how each degree of wear category was represented among each age group. In this way, it would be possible to tell which degree of wear was more frequently associated with each age group. However, if age groups were associated with less than five vessels, they were not utilized in analysis except for comparison of total representation among the site. As explained above, chi-squares were also utilized in the analysis in order to reflect how significant the patterns reflected among the sites were. However, the chi-square tests were only based upon those degree of wear categories that were sufficiently represented for each site. These statistical analyses were conducted for all sites in question for all applicable temporal styles in terms of the degree of wear which was represented among the sites.

Style I Wear Results

While this investigation intended to look at all temporal styles in reference to the degree of wear present on mortuary vessels for all sites, only the Galaz site presented with a sufficient number of Style I vessels associated with burials. Style I Mimbres black-on-white bowls at the Galaz site consisted of twenty-three bowls associated with buried individuals. While this is not a substantial amount of vessels, it is sufficient enough to see how the different degrees of wear were related to the ages of individual burials.

In the proportional analysis in the case of Style I burial associated bowls at the Galaz site (Figure 7), only the Infant (0-2) and Adult General (19 or Older) groups were analyzed in regard to how frequently the different degrees of wear were associated with the different age groups. The reason for the Adult General (19 or Older) and Infant (0-2) burials being the only age groups addressed was due to their assemblages containing five or more associated vessels for the age

groups. The total, however, still represents all burials how the different degrees of wear were distributed among the Style I burials found at the site.

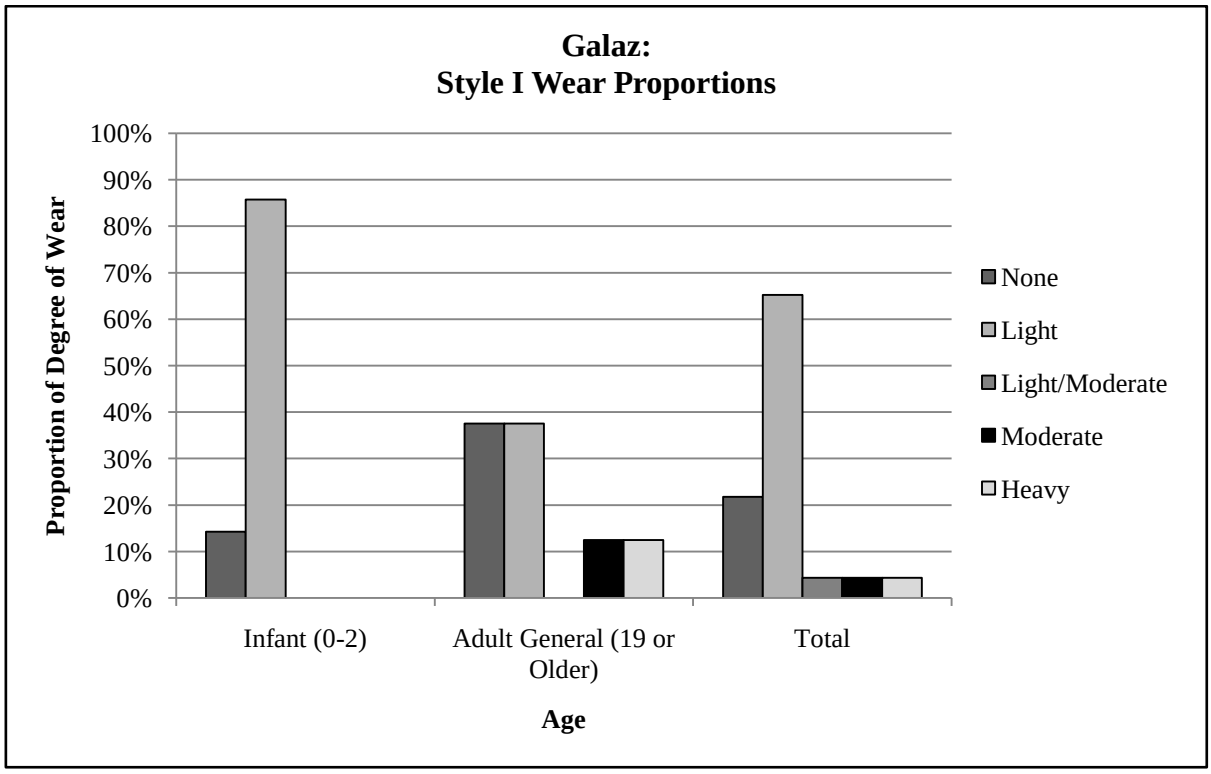

Figure 7. Correlation of Galaz Style I Wear with Age.

From the data (Figure 7), it can be determined that Light-Wear bowls were the most frequent vessels to be buried with individuals at the Galaz site, with vessels consisting of no wear being the second most represented at the site. While Light/Moderate, Moderate, and Heavy wear are also found during this time period, they are very infrequently represented among buried individuals from this site each only being associated with one individual. When studying the best represented age groups during the Style I period, it can be determined that Moderate and Heavy wear are only represented among adults and not at all associated with infants. Also imperative to note is that the Infant (0-2) group contains over 80% of individuals associated with Light-Wear, while the rest of the Infant (0-2) group is found to be associated with no wear.

Adult General (19 or Older) burials are equally associated with None and Light-Wear categories, and also equally represented with Moderate- and Heavy-Ware, with a greater tendency for adult individuals to be buried with Light or no wear. Another interesting factor about the data is the little more than 20% representation of those vessels with no wear. None is represented equally with Light-Wear among adults, and is the only other degree of wear found among infant burials. Although these are interesting patterns, discovering the implications, or potential meanings, of these patterns is key to understanding Mimbres culture.

Discussion

Even though the data for the proportional analysis present interesting finds among the data for Style I degree of wear at the Galaz site, what the patterns implicate is key to answering the question of the relationship between degree of wear on Mimbres black-on-white bowls and ages of buried individuals. When looking at the correlations of the wear with age, there is great indication of Light-Wear being associated the most with burials, while other degree of wear categories are very infrequently represented at the site. From this particular pattern, it can be theorized that the Mimbres were choosing the less worn, or more aesthetically pleasing, vessels for mortuary rituals. However, there are also vessels with more wear associated with buried individuals. As indicated above, Moderate- and Heavy-Wear vessels were found associated with Adult General (19 or Older) burials. From this, the possibility can be inferred that some individuals were being buried with their own personal vessels made for them at birth. However, the majority of Adult General burials have Light-Wear vessels associated with them. Also, the Heavy- and Moderate-Wear categories each only represented one vessel from the total Style I assemblage. In regard to the vessels with no wear represented among buried individuals at the Galaz site, it does present a possibility that some individuals were being buried with bowls made

specifically for their burial. However, as this is infrequent and no age group is designated with a great frequency of no wear vessels, this hypothesis cannot be proved through the analysis conducted. Thus, from the data presented, it is far more likely that individuals were being buried with the best vessels, with a possibility of individuals being buried with their own personal vessels.

However these patterns are being analyzed and interpreted, it is important to see at what significance these patterns are presented at the Galaz site. Chi-squares were utilized in order to show the significance and confidence of the results from the Style I burial associated bowls at Galaz. While the above interpretations and patterns reveal some interest in regard to the Galaz site in terms of the different degrees of wear associated with burials and different age groups during the Style I period, a chi-square test examining the relationship between degree of wear and age (Infant (0-2) vs. Adult (19 or Older)) showed a significance level of 19%, indicating that there is an 81% chance that the observed differences reflect a pattern in the association of wear with age.

Style II Wear Results

Similar to the Style I analyses across the Mimbres region, this investigation of Style II black-on-white bowls intended to study the association of wear and design throughout all sites for the Style II analysis. However, only the Galaz and the Swartz Ruin sites presented with a sufficient amount of data for comparison and analyses of wear results. While this was unfortunate, the two sites provided a comparison not only between the two sites for Style II ceramics, the sites also provided a comparison through time for one Mimbres site, and thus a better representation for the Mimbres cultural area.

Galaz Style II Wear

Style II period, or Late Three Circle Phase (A.D. 950 – 1000), burials at the site of Galaz were represented by seventy black-on-white bowls. From the proportional analysis in studying each degree of wear among age groups (Figure 8), it can be seen that the Old Adult (>40) age group was eliminated, this was due to its underrepresentation among Mimbres Style II vessels among this particular age group. All other age groups were sufficiently represented at the site, so were included within the site comparison.

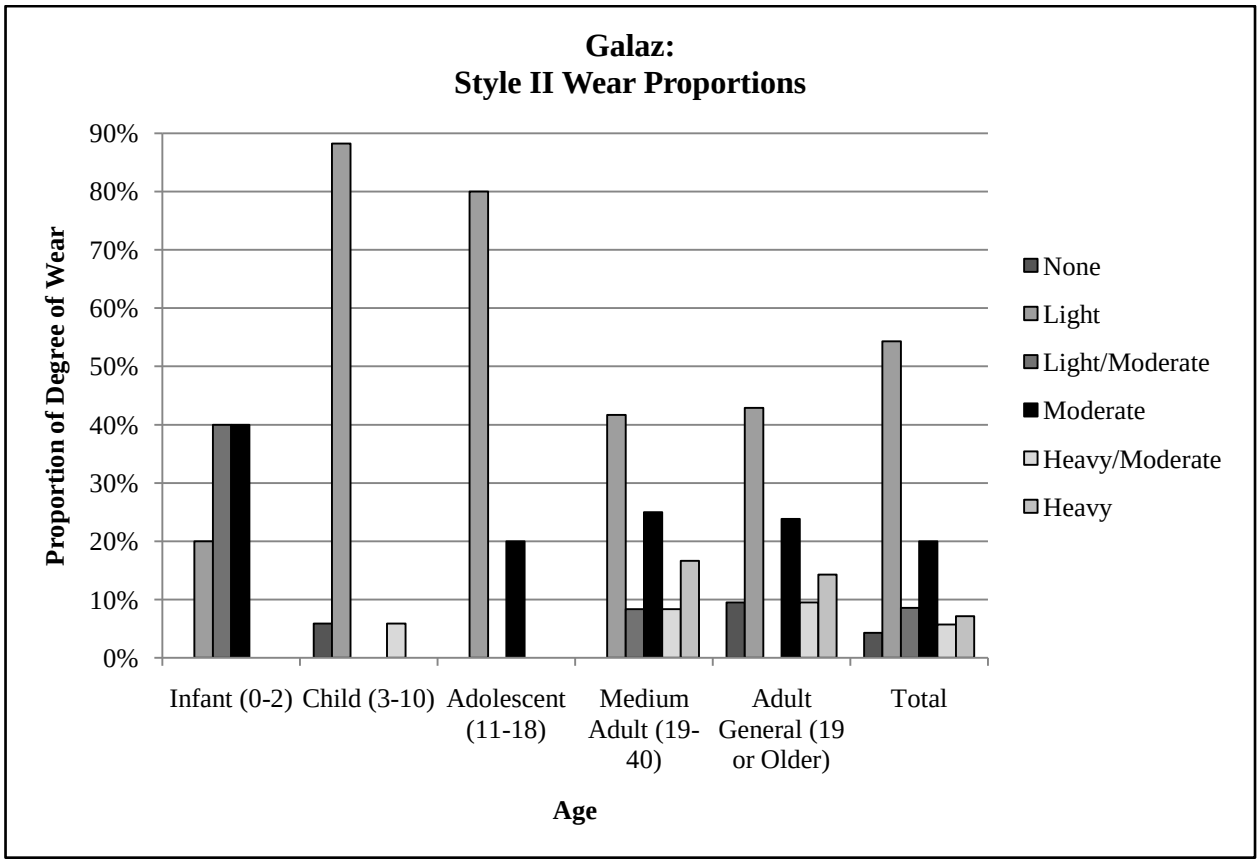

Figure 8. Correlation of Galaz Style II Wear with Age.

When comparing the chart (Figure 8) of the proportional analysis for Style I and Style II burials, it can be determined that, Light-Wear was once again the most commonly associated

vessel with burials at the Galaz site during the Style II time period. From the Total representation at the site, it can also be determined that Moderate-Wear vessels have increasingly come to be represented among burials as well. Where before they only represented 4% of the assemblage, they now represent 20% of the assemblage. Other degrees of wear were also more frequently found among the burials than they were among previous Style I burials. On the other hand, those vessels found with no wear were less associated with individuals at among Style II burials than they were associated with Style I burials.

When solely comparing the degree of wear among age groups for Style II bowl related burials, the graph (Figure 8) shows that all age groups, except Infant (0-2) are more likely to be associated with Light-Wear vessels, while infants are more generally associated with vessels containing light/moderate or moderate wear. Also in this proportional analysis, it is apparent that Medium Adult (19-40) and Adult General (19 or Older) individuals are represented by vessels encompassing nearly all degrees of wear. Another important observation made from the chart is that the proportion of Light-Wear vessels associated with children and adolescents is 80% or higher, while the remaining age groups associated with Light-Wear vessels show a little over 40% of burials associated with this degree of wear. Another interesting find among this data is that adolescents are only associated with Light- and Moderate-Wear vessels. Although these present interesting finds, the interpretation of these patterns is crucial to the understanding of Style II degree of wear bowls with Mimbres burials.

Discussion

The proportional analysis of Style II wear at the site of Galaz revealed a greater tendency for vessels consisting of Light-Wear to be associated with buried individuals. While this is also found to be true for Style I burials at the site of Galaz, differences between the temporal time

periods show a change among how the vessels were associated with burials. Vessels with no wear for the Style II assemblage were significantly less than during the Style I time period. As explained above, one hypotheses for bowls with no wear is that some individuals had bowls specifically made their burials. While this practice was somewhat popular among Style I burials, it seems to have decreased in popularity among the Late Three Circle (A.D. 950 – 1000) phase burials. Much like this change in pattern from Style I to Style II burials, it is apparent that more vessels with greater wear were also beginning to be associated with burials at the Galaz site during the Style II time period. This could be attributed to the greater number of represented burials, or this could also indicated a lessening favor for light-wear vessels with certain individuals.

In regard to the vessels with increasingly more wear, these vessels were associated among all individuals at the site. For younger individuals, this could implicate heirlooms being placed with younger children in order to connect them to the still surviving family members. For older individuals, the more worn bowls could be an indication of personal vessels associated with some individuals. In any case, the results show a greater tendency for Light-Wear vessels, while some individuals may have been buried with their individual vessels or family heirlooms, it still seems as if the people were still burying the dead with the vessels which were in much better shape.

These results of the Style II assemblage at the Galaz site reveal some interesting interpretations, especially from the transition of Style I burials compared to Style II burials. The chi-square test examining the degree of wear and age (considering the five separate age categories) strengthened the findings of this assemblage. The chi-square test showed a

significance level of 1%, indicating that there is a strong probability (99%) of a statistically significant relationship between age and degree of wear.

Swartz Ruin Style II Wear

At the Swartz Ruin site, Style II black-on-white vessels comprised of thirty-one vessels recovered among burials. The proportional analysis conducted for the attributes was in reference to the frequency of the degree of wear per sufficiently represented age group. For this site, those age groups included Infant (0-2), Medium Adult (19 – 40), and Adult General (19 or Older). Among the Style II burial assemblage at the Swartz Ruin site, the only degrees of wear presented were None, Light-, Moderate-, and Heavy-Wear.

At a glance of the proportional analysis of the Swartz Ruin site (Figure 9), it can be seen that Light-Wear dominates the Style II assemblage for the mortuary black-on-white ceramic assemblage, including the different age groups associated with Style II ceramics. Light-Wear from this analysis was found only to be associated with medium adults at a proportion of a little over 70%. The rest of the Medium Adult (19-40) burials were associated with vessels containing Moderate- and Heavy-Wear. Infant (0-2) burials were those only associated with vessels containing no wear. This implication could, however, be attributed to the less than 10% representation of None vessels being overall represented at the site.

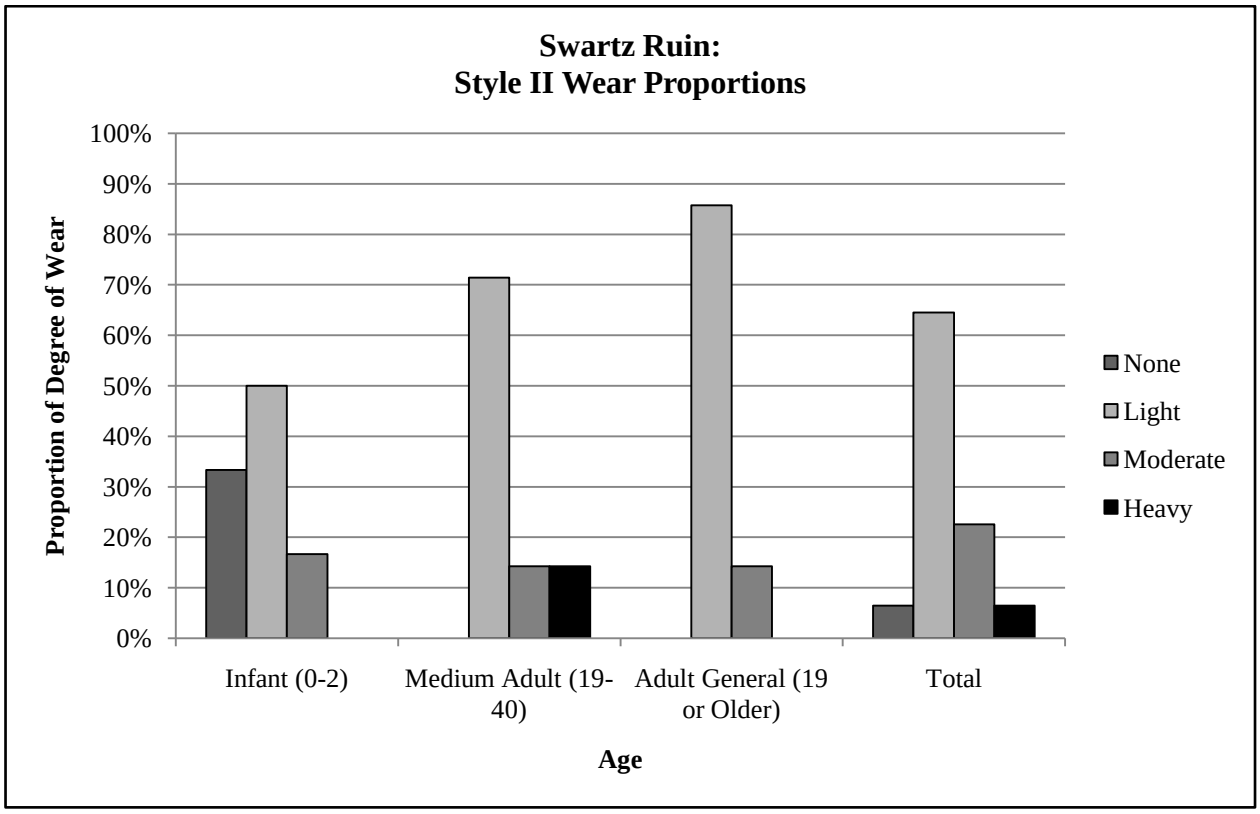

Figure 9. Swartz Ruin Style II Wear Correlation with Age.

When comparing the Style II degree of wear at Swartz Ruin (Figure 9) with Style II degree of wear at Galaz (Figure 8), there are some similarities and differences in the assemblage. Light Wear is associated with the majority of buried individuals containing a black-on-white bowl at both of the sites. Also, the remaining wear categories that were similar at both sites were also similar in representation among the entire burial assemblage. However, there are differences among the age groups. Infants at Swartz Ruin are more frequently buried with None or Light-Wear vessels, while infants at the site of Galaz were buried more frequently with Light/Moderate- or Moderate-Wear. When comparing the Adult General (19 or Older) age groups between the two sites, it can be seen that this age group at the Galaz site was associated with Heavy-Wear vessels as well as bowls containing no wear, while at Swartz Ruin they were

only seen as being associated with Light or Moderate Wear. With some apparent patterns, some interesting interpretations were inferred from these results.

Discussion

Implications for the first proportional analysis of Style II burials at the Swartz Ruin site are similar to the implications for Style II burials at the Galaz site. From the chart (Figure 9) it can be inferred that the people at the site of Swartz, like those at Galaz, more frequently buried their dead with the bowls from their own home assemblage that were the best in shape. Also similar to the Galaz site were the infrequent uses of heavier wear which shows somewhat of a trend during the Style II period for infrequent inclusion of heavy wear vessels. Although this could implicate that some older individuals were buried with personal vessels and younger individuals with heirlooms, this cannot be certain. As there is a similar trend during the Style II period for at least two Mimbres sites, there may be an inference made that these are the individuals that are being buried with their prize and highly used vessels, or burying their children with their heirlooms. However, the similar hypothesis can be made in reference to the representation of no wear vessels at the site for Style II vessels.

Vessels with no wear at any given site could be an indication of bowls that were highly prized by some families were unused. Due to this, in cases of burials, these vessels would have been the ones that were the best among the home assemblage. Although, these vessels could have also been made specifically for those burials, which could indicate an elevated status or a connection to the individuals who made the Style II black-on-white ceramics. However, when looking at the different assemblages from both sites, this is the greatest difference. Infants at the site of Swartz Ruin were the only individuals who were associated with None bowls, while at the site of Galaz Child (3-10) and Adult General (19 or Older) burials were associated with no wear

vessels. This could indicate a connection between the family of the buried individuals at the Galaz site. it could also indicate the special treatment of infant burials at the Swartz Ruin site. However, as the None category represents such a small part of the assemblage for both sites, these hypotheses cannot be solidified.

Although the implications described above are possible, it cannot be said for certain with the given data and information that these events occurred at one or both of the sites. The only fairly solid hypothesis can be made is that the Mimbres at both the Swartz Ruin and Galaz sites buried their dead with the most aesthetically pleasing vessels from their own home assemblage, with an unknown reason for the association of vessels containing heavier use-wear. However, the results from the chi-square test examining degree of wear and age (considering three age categories) of the Style II assemblage at the Swartz Ruin site, reveals an 11% chance significance level. This means that there is a good chance (89%) that these results and interpretations have a statistically significant relationship.

Style III Wear Results

Unlike the previous temporal styles of Mimbres black-on-white ceramics, all the sites researched contained sufficient data to investigate the degree of wear associated with burials. This remarkable opportunity allowed to view trends temporally in terms of the Galaz and Swartz Ruin sites an intersite comparison for the Style III time period when black-on-white ceramics and their association with burials were at their height.

Galaz Style III Wear

In order to determine the full extent of the representation of degree of wear on black-on-white bowls throughout the entirety of the occupation of the Galaz site, Style III or Classic Mimbres period vessels were also investigated. These vessels were also analyzed due to the representation

at all sites. For this set of data, only the Subadult (<19) age group was eliminated as no burials were placed into this group throughout the Galaz site.

According to the comparison made for the frequency of degree of wear categories with age groups (Figure 10), Light-Wear still represented over half of the vessels associated with burials during the Style III period at the Galaz site. Those Style III bowls with heavier wear at the Galaz site, still represent similar findings to Style I and Style II bowls in their representation among burials at the Galaz site. However, different from the previous temporal styles, the Style III assemblage at the Galaz site shows that at least a few burials from each age group were associated with vessels containing no wear, while previously, None bowls were associated with only a few age groups. Another difference between the temporal styles at the Galaz site, is the representation of Heavy-Wear bowls among nearly all age groups at the Galaz site. All age groups are associated with Heavy-Wear vessels except for Infant (0-2) burials. However, the Infant (0-2) burials are associated with Heavy/Moderate-Wear vessels aligning its association with vessels that were very well used. While it is clear that these patterns are occurring, it is important to find the inference of these patterns at the Galaz site and what they mean for its entire occupation.

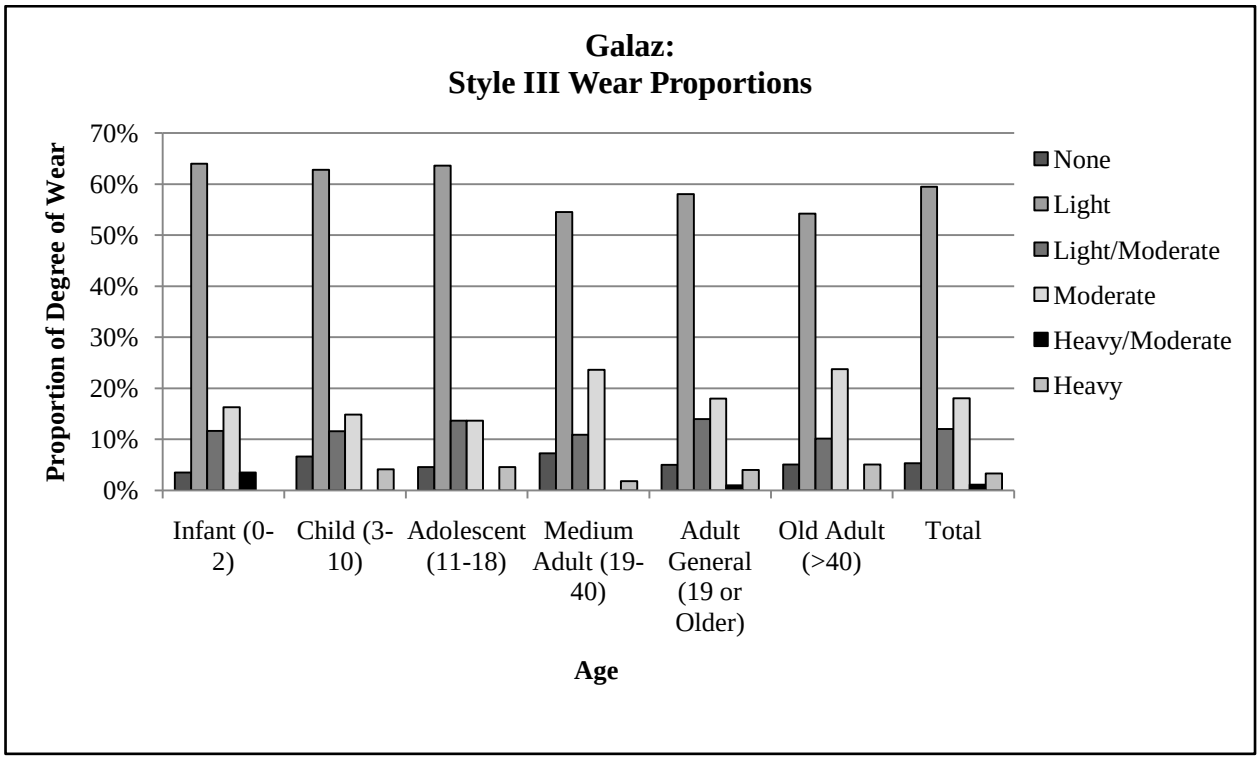

Figure 10. Galaz Style III Wear Correlation with Age.

Discussion

From the results of Style III, it can be determined that the Mimbres at the site of Galaz still carried on their tradition of burying their dead with those bowls which were in the best condition to bury with the deceased. However, there is still the tendency to bury some individuals with black-on-white bowls containing heavier wear. While this could still indicate personal bowls being interred with certain individuals, or heirlooms in the case of younger individuals, there still is not enough data to make a valid conclusion on this subject. However, there is a trend throughout time that show that some individuals were being buried with these types of vessels. However, there is a marked difference between the association of heavier wear vessels with Infant (0-2) burials.

During the Style I period (Figure 7) infant burials were only associated with vessels containing little or no wear, while during the Style II period (Figure 8) at the Galaz site, infants were beginning to be associated with Moderate-Wear vessels. This Moderate-Wear was, in fact, more frequently associated with Infant burials than Light-Wear bowls. This trend does not last to the Style III (Figure 9) Infant (0-2) burials, where infants are once again predominately associated with Light-Wear black-on-white bowls. However, what this pattern infers is uncertain from the given assemblage. It could indicate that during the Style I period, infants were being buried with either vessels made for their burial or with the best vessels, and then during the Style II period they were more frequently being associated with heirlooms, although the tendency is uncertain as there was an equal representation of Light/Moderate- and Moderate-Wear bowls among the infant burials. The heirloom trend, however, does not last long in that infants, once again, during the Style III period are usually being buried with the best vessels form the home assemblage, as are all age groups at the site. Thus, the only certain conclusion from the entire assemblage at the Galaz site is that burials throughout the entire mortuary practice of the inclusion of a black-on-white bowl were more frequently associated with the best vessels from the home assemblage.

Unlike the chi-square tests from the Galaz Style I and Style II assemblages and the Swartz Ruin Style II assemblage, the chi-square results from the Style III data show that the results are not very significant. The chi-square test comparing the degree of wear and age (for six age groups) found an 86% significance level. This suggests that there is only a 14% chance that the results are anything other than random variation.

Swartz Ruin Style III Wear

Style III Mimbres black-on-white vessels in terms of degree of wear at the Swartz Ruin site comprised of 440 black-on-white bowls associated with burials. The proportional analysis of the Swartz Ruin site for degree of wear showed that the continued consistency to bury individuals with Light-Wear vessels (Figure 11). Like the Galaz assemblage and the Style II Swartz Ruin assemblage the Light degree of wear category is by far the best represented of the categories for all age groups at the site. However, all age groups showed at least some proportion of individuals were buried with other degrees of wear associated with black-on-white ceramics and buried individuals.

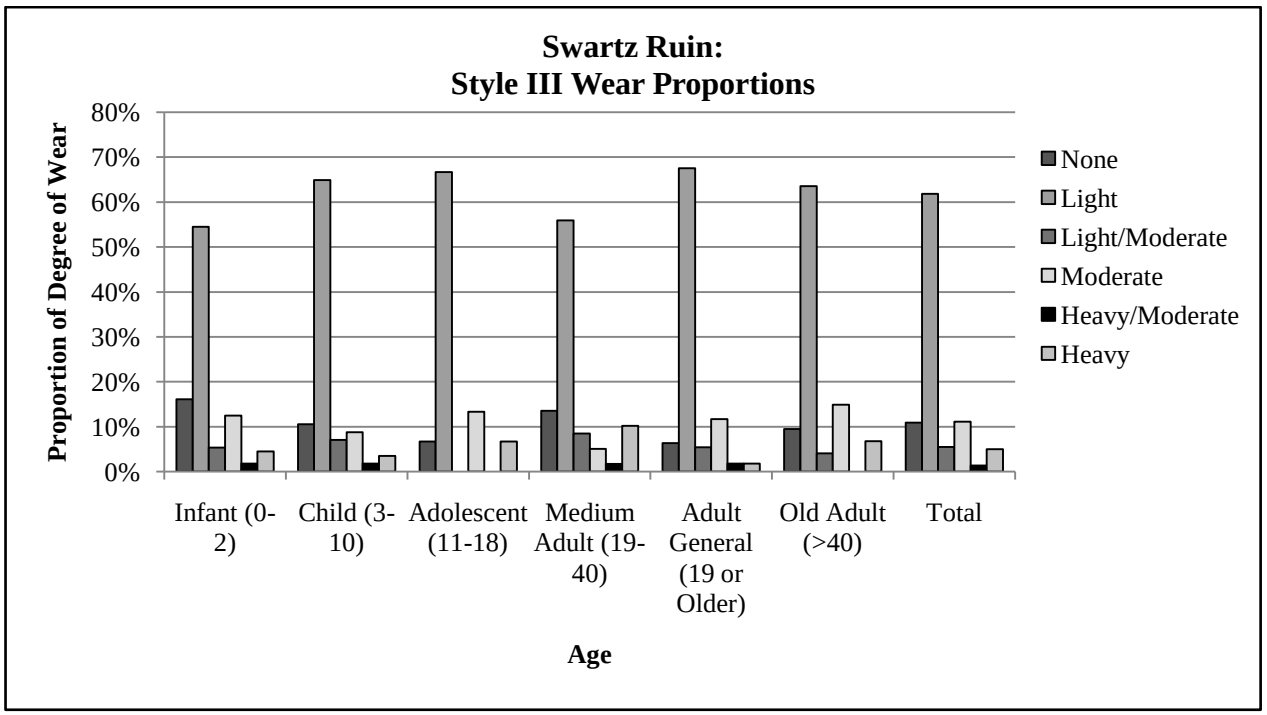

Figure 11. Swartz Ruin Style III Wear Correlation with Age.

One instance of this are those bowls which show no indication of wear (Figure 11). Since the Style II period, there is a marked increase of individuals associated with None bowls.

However, this degree of wear category is not solely associated with infants as it was during the Style II period, it is now associated with all age groups at the site. However, infants and medium adults are reveal a greater tendency for individuals to be associated None bowls. Along with the instance of vessels without any wear at the Galaz site, there are instances of bowls with great amounts of use-wear being associated with individuals buried at the site. Heavy-Wear, for instance, is represented among all age groups at the site, although it is most frequently associated with Medium (19-40) burials. Although these patterns are apparent, the question of substantial implications are important for the sites occupation and in comparison to the Galaz site.

Discussion

Similar to the Style II mortuary bowl assemblage at the Swartz Ruin site and the whole assemblage at the Galaz site, it is apparent that the Style III assemblage at the Swartz Ruin reflect the tendency to bury individuals with the bowls that were in the best condition. However, there are differences between the assemblages, especially in regard to None bowls. During the Style III period (Figure 11) at the Swartz Ruin site, there is an increasing tendency to bury individuals with bowls containing no wear since the Style II period (Figure 10). This increase could represent the increase of certain individuals being buried with vessels that were purposely made for them, or it could also reflect the increased burial assemblage from the Style II to the Style III period at the Swartz Ruin site. Another interesting factor from the None bowls is reflected in the intersite comparison. When comparing Swartz Ruin to the Galaz site, it can be seen that, while there is an indication of an increase of individuals associated with no wear bowls at the Swartz Ruin site, this proportion remains pretty much the same in terms of None vessels at the Galaz site. As the infrequency of no wear vessels in general could be an indication of high status individuals or high status families, there could be a possible reflection that there were

more high status individuals at the Swartz Ruin site when compared to the Galaz site. However, as Infants are only associated with None bowls at the Style II period at the Swartz Ruin site and the implications are shaky for both sites at best, these implications are uncertain. The only certainty is the trend of the more aesthetically pleasing vessels being used as mortuary remains.

More importantly than the possible meanings behind the patterns revealed from the proportional analysis of the Style III assemblage at the Swartz Ruin site is the significance represented by these results. The chi-square test of the Style III assemblage in regard to degree of wear and age (for six age groups), revealed that the results reflect a 67% significance level, indicating only a 33% chance that these are anything other than random variation.

NAN Ranch Style III Wear

Wear at the NAN Ranch site for Style III bowls was analyzed through the use of proportions in the same ways as that used for the previous two sites discussed (Figure 12). For the proportional analysis, the Subadult (<19) age group was removed from analysis due to insufficient representation. Even with this elimination, with a glance at the results of this analysis indicates that Light-Wear, like the previous two sites, dominated the assemblage of burial associated bowls. However, it is also interesting to note that the Infant (0-2) age group is the only age group for which Light-Wear does not comprise the vast majority of vessels associated with that particular age group. Instead, Moderate-Wear comprises the majority of the wear on bowls associated with infants. This is interesting to note in that Infant (0-2) burials at the previously investigated sites, Galaz and Swartz Ruin, were more frequently associated with Light-Wear bowls. It is also imperative to discuss Heavy-Wear. Like at Galaz and Swartz Ruin, Heavy-Wear vessels at the NAN Ranch site were buried with individuals of all age groups, including children and infants. Another interesting factor at the NAN Ranch site is that those vessels with

no wear were found with individuals younger individuals rather than older individuals, where at the Swartz Ruin and Galaz sites no wear vessels were associated with all age groups. From these differing trends, some interesting interpretations arose.

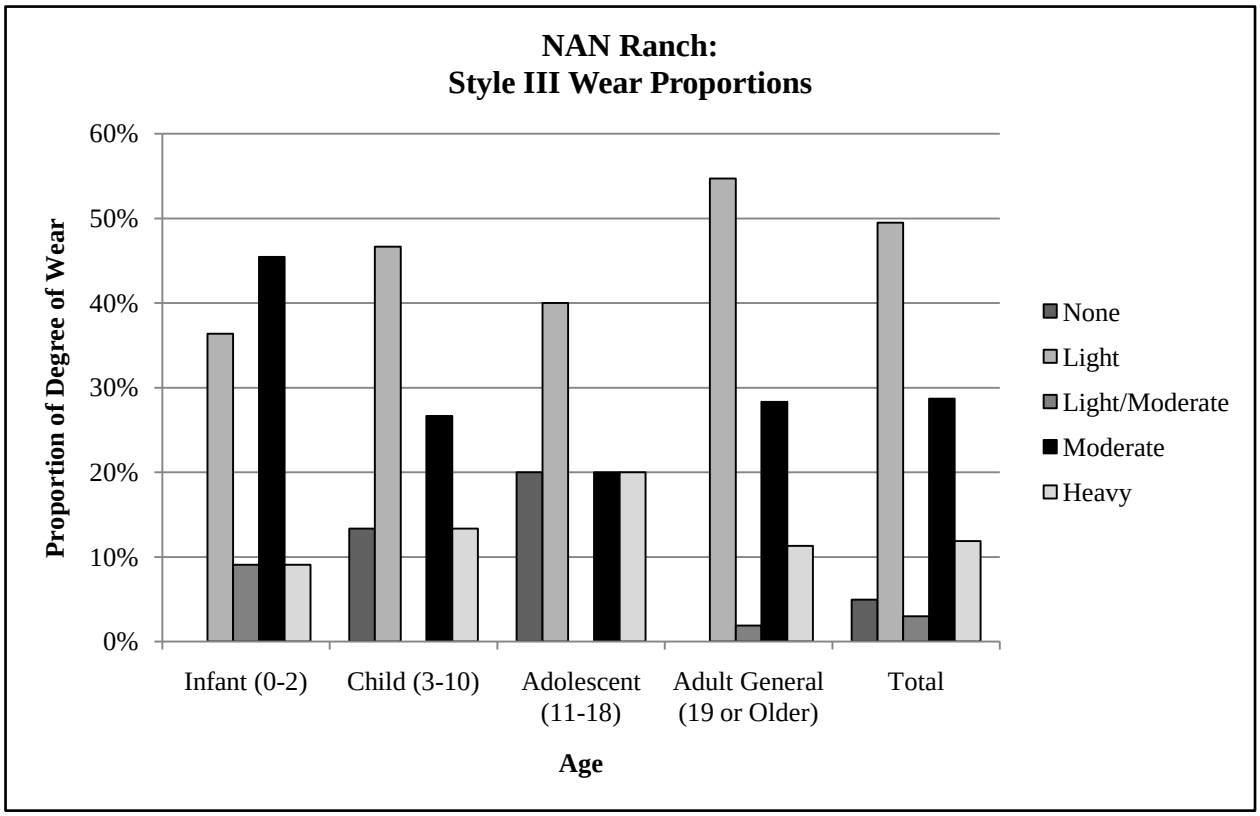

Figure 12. NAN Ranch Style III Wear Correlation with Age.

Discussion

While the NAN Ranch still reveals the Mimbres people's tendency to bury their dead with the best looking vessels from the home assemblage, there are some different implications revealed at the NAN Ranch site. In the case of Heavy-Wear, burials are more frequently associated with Heavy-Wear vessels than they were at the previous two sites. This could imply that these individuals were poorer, or these individuals were more concerned with the association of heirlooms with their deceased. As for the interpretation of individuals possibly being buried

with their own personal bowls this is clearly not the case at the NAN Ranch site as Infant (0-2) burials should not be associated with Moderate- or Heavy- Wear vessels. Thus personal vessel assemblage and heirloom association can is still not for certain at the NAN Ranch site. However, these trends and tendencies pale in comparison to the None bowls at the NAN Ranch site.

While the Galaz and Swartz Ruin sites did reveal that burials were associated with bowls having no wear, a variety of age groups were associated with this lack of wear. The NAN Ranch differs from this in that children and adolescents are the only individuals associated with vessels without any indication of use. This trend at the NAN Ranch site could implicate the sentiment behind the burial of younger individuals, where at Galaz and Swartz Ruin age groups were treated equally. However, if there is high status among families, this could indicate that younger individuals of these families were buried at the site. The representation of bowls with no wear could also indicate the possible relationship between certain individuals and the makers of the vessels. The study by LeBlanc (2006) of Style III vessels suggests that there were only a few artists which were creators of these unique vessels, whether artists were a single individual or a group of individuals is still unknown. Although these implications could be true, with the given data and given results, the only certainty is the association of burials at the NAN Ranch site, and the other two sites, with the best bowls from the home assemblage.

While the significance levels were fairly low for the Style III assemblage in terms of degree of wear correlation with age for the Galaz and Swartz Ruin sites, there was a good chance for the Style III assemblage at the NAN Ranch site to have a statistically significant relationship. The chi-square test of degree of wear versus age group (considering four age groups) at the NAN Ranch Style III assemblage revealed a significance level of 25%. This indicates that there is a

75% chance that there is a statistically significant relationship between age and degree of wear at the NAN Ranch site.

Cameron Creek Style III Wear

There were 104 black-on-white vessels at the Cameron Creek site which were attributable to Style III black-on-white vessels. Wear on Style III black-on-white vessels was investigated through proportions represented in the chart (Figure 13). This proportional analysis was utilized to investigate each degree of wear and how it was represented among the different age groups which were associated with the Cameron Creek site. Age groups for the Style III Cameron Creek analysis were omitted in this proportional analysis if they were represented by less than five vessels. Also in regard to age groups, the Indeterminate age group was included with the Cameron Creek Site analysis as it represented a great majority of the burials at the site.

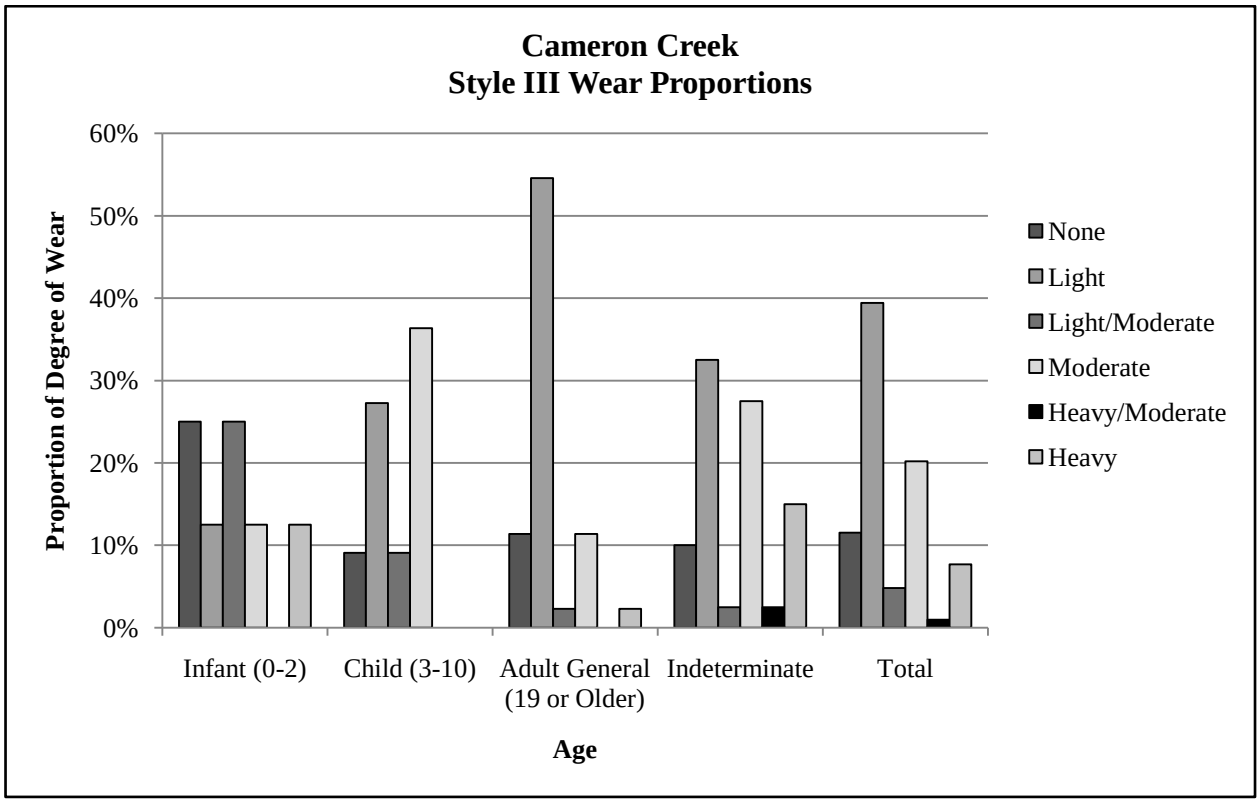

Figure 13. Cameron Creek Style III Wear Correlation with Age.

During the proportional analysis of the vessels, it was revealed that all degrees of wear, except Heavy/Moderate and Heavy, were represented among all age groups at the site in varying proportions. In looking at the chart (Figure 13), it can be discerned that Light-Wear was the most representative degree of wear among the buried individuals at the Cameron Creek site during the Mimbres Classic period. However, it was not the most represented among all age groups. For the Infant (0-2) age group, it seems as if there was a greater tendency in placement of a vessel which contained no wear or Light/Moderate wear, while the majority of Adult General (19 or Older) and Indeterminate burials are associated with Light-Wear. Interestingly enough, the Child (3-10) burials were more frequently associated with Moderate-Wear bowls which contribute to the implication that individuals were not associated with their own personal

vessels. Other implications from the patterns among Style III burials at the Cameron Creek site were also interpreted in comparison to the other three Mimbres sites.

Discussion

The implications behind the burial associated Style III black-on-white bowls are not all that different from the implications from the first three sites. At the site of Cameron Creek, the majority of deceased individuals were being buried with those vessels of the home assemblage that were the best looking. However, Adult General (19 or Older) burials are more frequently associated with Light-Wear vessels than any other group. This could reflect the practice to bury adults with best vessels. However, as all age groups are associated with this degree of wear, this trend cannot be said for certain. In comparison, infants showed a greater tendency to bowls that showed no signs of wear. In fact, there is a greater tendency at the site of Cameron Creek to bury individuals with vessels containing no wear, which contrasts to the other sites. This tendency of no wear with infants could reflect the sentiment behind the burials, or it could overall represent status. However, as no wear vessels are distributed among all age groups with no connections made between the burials in this analysis, nothing can be said for certain.

While there were still individuals at the Cameron Creek site who were associated with heavier wear vessels. While this could still show a trend of personal vessels and heirlooms, there is still not enough data to say this is so. As this is a trend among all of the sites, it is defiantly a hypothesis worth considering, however, more research is needed in order to establish the meaning behind interring an individual with a heavier wear vessel. The only certainty at this site, like at the previous three sites is that it was usually the practice to bury individuals with those vessels that were in the best condition.

As these results reflect similarities and differences in regard to the Style III degree wear correlation with age at the Cameron Creek site, a chi-square test comparing the degree of wear and age (for six age groups) found an 8% significance level. These results suggests that there is a 92% chance that that the observed differences reflect a real pattern in the association of wear with age at the Cameron Creek site.

DESIGN RESULTS AND DISCUSSION

The second question in this research deals with the possible connections between Mimbres black-on-white bowls and the ages of buried individuals for all four sites addressed in this research. The question of design representation, as discussed above, was addressed through proportions in two different ways. The first was in regard to the two different design classes: geometric and figurative. The second was a breakdown of the design classes into different design categories. While this research intended to utilize of the design categories for the design classes, only three design categories were utilized in regard to geometric design: Angular, Combination, and Curvilinear. Similarly, only seven of the many figurative design classes were utilized in this investigation: Bird, Fish, Human, Insectoid, Mammal, Multiple Class, and Reptile. These categories were chosen based upon their representation at all of the sites. Through the analysis designs were looked at in how they correlated with age groups.

Within this analysis chi-squares were also utilized to isolate the significance and confidence of the findings. These chi-squares, however, were only used to calculate the significance and confidence of those design classes and general design categories which were analyzed in this study. Similar to the degree of wear analysis, while the sites of Cameron Creek,

Galaz, NAN Ranch, and Swartz Ruin presented similarities in their results in regard to the different designs, they also presented with differing results.

Style I Design Results

As mentioned above, the Galaz site is represented by all three temporal styles of Mimbres black-on-white bowls. While figurative design was represented during the Style I phase of black-on-white ceramics, it was very rarely represented, and not at all among burials at the Galaz site, therefore, in reference to design, the Geometric design class is the only one analyzed for the Style I time period, while Styles II and III compare both design classes among the buried individuals at the site. Proportions were represented in the same ways that they were previously in terms of degree of wear, only this time the charts represent the frequencies of the design categories analyzed for each age group. For the Style I Geometric Design class, proportions were not reviewed at all in reference to the figurative versus geometric portion of the design analysis, this was due to the sole representation of Style I geometric design among the associated burials at the Galaz site. The analysis based upon proportions for the frequency of design represented for each age group was ruled out right away as all age groups were represented 100% by geometric design.

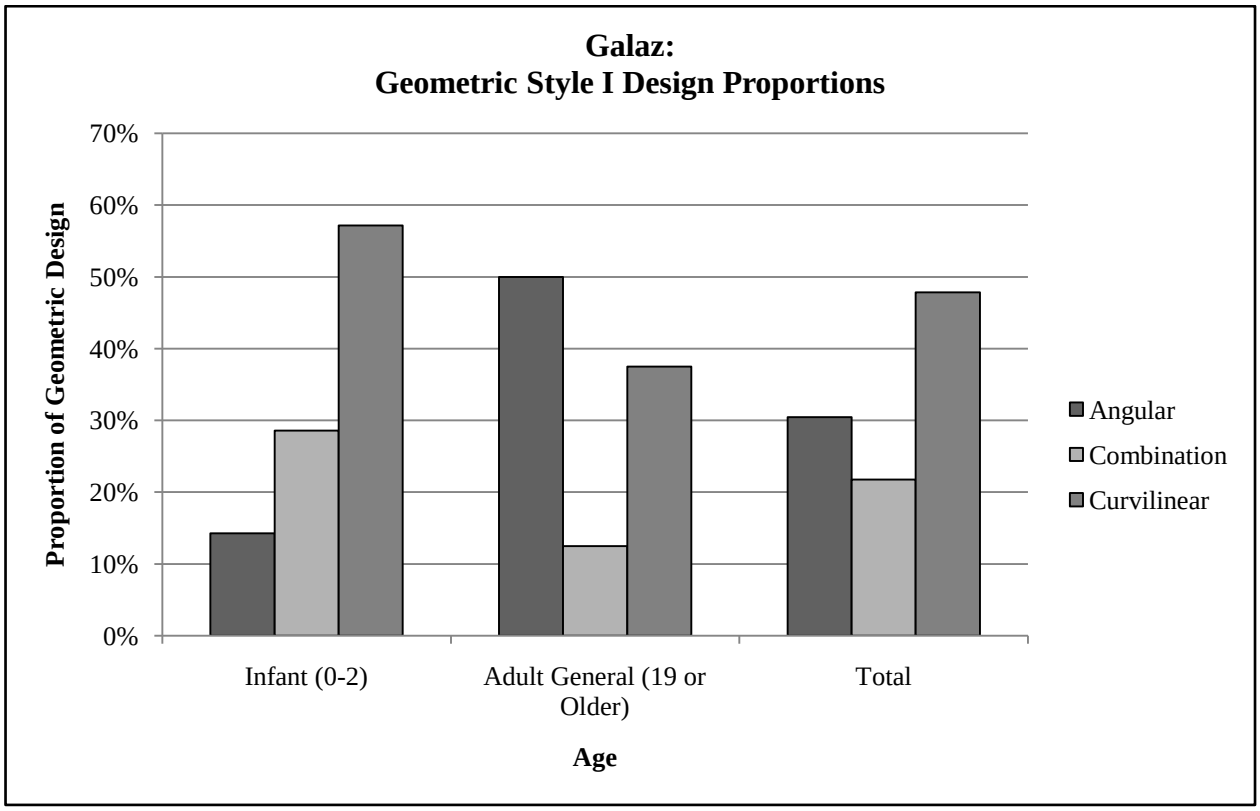

Figure 14. Galaz Style I General Geometric Design Correlation with Age.

Style I geometric design at Galaz is represented by twenty-three black-on-white vessels buried with individuals. The proportional analysis of the frequency of design category between age groups for Style I is sufficiently represented by two age groups, Infant (0-2) and Adult General (19 or Older) (Figure 14). In reference to the Style I assemblage at the Galaz site for the three geometric design categories, Curvilinear was the design most frequently associated with buried individuals with Style I black-on-white vessels. In regard to the different age groups, Infant (0-2) was more frequently associated with having curvilinear design, with a representation of nearly 60%, while the Adult General (19 or Older) group showed a greater tendency for individuals of that group to be buried with Angular Design than either Combination or Curvilinear.

Discussion

While these results can be interpreted as the greater association of buried individuals with Curvilinear Design, it should be noted that Curvilinear Design was the most popular design depicted on all vessels during the earlier phases of black-on-white ceramics (LeBlanc 1983). However, the data also shows a tendency for not solely the representation of the most popular design class. In regard to the different age groups, it is shown that infants and adults show a greater association with one geometric design category. Infant (0-2) burials are more frequently associated with the more common Curvilinear vessels, while Adult General (19 or Older) burials are more frequently associated with the lesser common Angular Design category. From here it could possibly be assumed that depending on the age, there is an association of one design over another. However, as infants are buried with Angular bowls and adults are buried with Curvilinear bowls, this hypothesis is not definitive.

As these results tend to show no definitive patterns in the relationship between Style I general geometric design at the Galaz site, the chi-square test of Style I general geometric design versus age (Infant (0-2) and Adult (19 or Older)) also showed a 30% significance level. Thus it could be interpreted, that while these results have shown no particular pattern, there is a 70% chance that the what is observed reflects a real pattern and not simply random variation.

Style II Design Results

As mentioned above only the Galaz and Swartz Ruin sites comprised of enough Style II mortuary data for an analysis. Also, similar the Style I assemblage, although Style II vessels buried with individuals are represented both through figurative and geometric design, the figurative design class only comprised a few vessels at the Galaz and Swartz Ruin sites. As a

result of so little representation of Style II figurative design, only the geometric design class was analyzed for this temporal style.

Galaz Style II Design

Although Style II vessels buried with individuals are represented both through figurative and geometric design, the figurative design class only comprised of six vessels represented among buried individuals for the Late Three Circle Phase (A.D. 950 – 1000). As a result, the Style II figurative design was not analyzed for this particular site. Geometric design in Style II comprised the vast majority of vessels at the Galaz site in being represented by sixty-four of the total seventy black-on-white bowls associated with buried individuals. As the geometric bowls are so frequently represented among the Style II burial assemblage, the comparison of figurative versus geometric design is unnecessary for this analysis.

This temporal style, unlike Style I vessels was associated very well among different age groups (Figure 15) with the exception of adolescents and old adults, also unlike Style I we can see a transition to a much greater representation of the Angular rather than the Curvilinear Geometric design category. In fact, curvilinear design represents not even 10% of all the geometric vessels at the Galaz site. Infant (0-2) is the only age group for which Combination, rather than Angular Design, represents the majority. Over 50% of infants are buried with Combination geometric bowls, while Angular Design represents the rest of the infant assemblage. The Child (3-10) and Adult General (19 or Older) age groups are the only age groups that are associated with the Curvilinear design category. While this design category represents a small proportion of geometric vessels for each age group, and for the whole site in general, it was previously the most popular design to be buried with individuals in the Style I period (Figure 14).

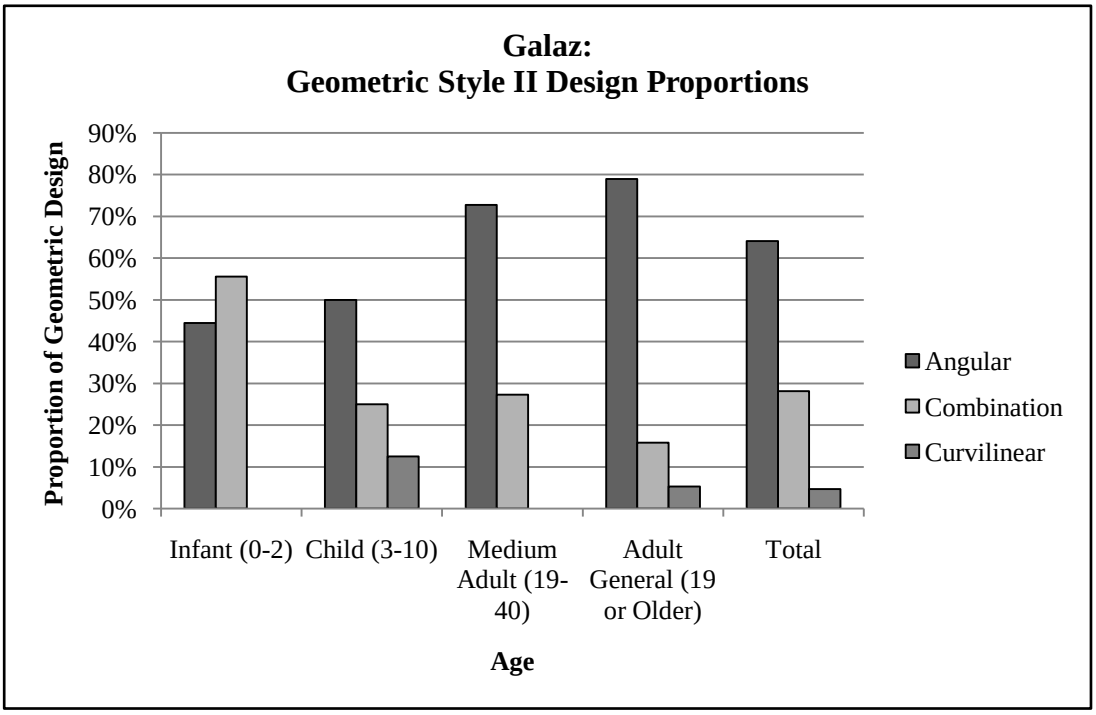

Figure 15. Galaz Style II Geometric Design Correlation with Age.

Discussion

While Curvilinear Design was the most common geometric design to be buried with individuals during the Style I period, the focus has now shifted to Angular Design association with burials. This could represent a shift in the design associated with burials; however, the results most likely represent the growing popularity of the use of Angular over Curvilinear Design in its general utilization on black-on-white bowls in the Style II period at the Galaz site. As this Angular Design was most frequently depicted during this time period, the Style II burials still reflect a tendency to bury the majority of age groups with the most popular design category as was reflected during the Style I period. However, unlike the Style I period, the Infant (0-2) age group is more frequently associated with one of the least depicted designs while all other age groups are associated with the most popular design. While this could represent the differential

treatment of Infant (0-2) burials, other age groups are also associated with Combination Design and thus no substantial conclusion can be made with the given data. Similarly the association of Curvilinear Design among Child (3-10) and Adult General (19 or Older) age groups show a great gap in between the representation of these age groups. Thus, nothing is certain except for the great representation of the most popular general geometric design during the Mimbres Style II design association with burials at the Galaz Site.

Similar to the Style I analysis at the Galaz site, the Style II chi-square test comparing general geometric design and age (comparing four age groups) at the Galaz site showed a significance level of 21%. Thus it can be concluded that there is a 79% probability that the observed patterns reflect a statistical significant relationship between general geometric design and age.

Swartz Ruin Style II Design

The Style II vessels at the Swartz Ruin site comprised of vessels both of figurative and geometric design. However, the geometric design class is the only design class analyzed in reference to this temporal style, as the figurative design class represented by only five bowls, or 16% of the entire Style II burial assemblage at the site. Geometric, on the other hand, dominated the burial assemblage for this time period at the site at a staggering 84% representation across the site. However, this is not well represented among all age groups in terms of general geometric design, but this is due to the majority of burials being interred with geometric design bowls.

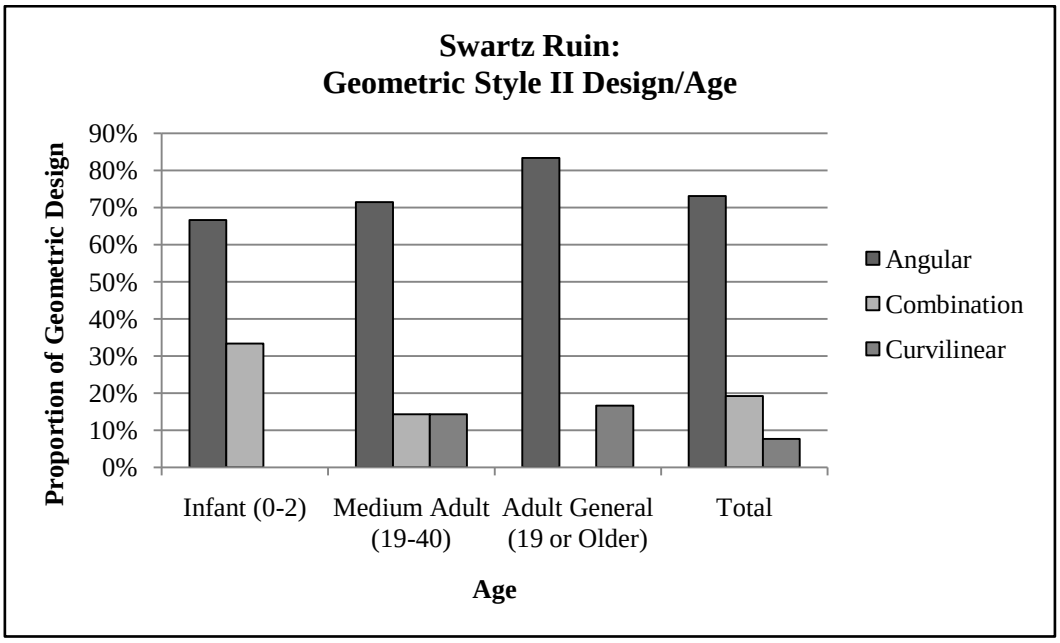

Figure 16. Swartz Ruin Style II Geometric Design Correlation with Age.

In regard to age groups which were sufficiently represented within this assemblage, only Infant (0-2), Medium Adult (19-40), and Adult General (19 or Older) individuals contained sufficient data for the proportional analysis (Figure 16). Upon a glance at the results of the analysis, it can be seen that the Angular Design category dominates the total Style II geometric burial assemblage in regard to burials throughout the site Swartz Ruin site as it did at the Galaz site. However, unlike the assemblage at the Galaz site, the Angular design is the majority for all age groups at proportions over 65%. Curvilinear is very minimally represented among buried individuals at the site, while Combination design is a little over 10% more than the proportion of Curvilinear design.

Discussion

The results from the Style II general geometric design assemblage at Swartz Ruin yield similar results as the assemblage from the Galaz site. Both sites reveal that the Angular Design, or the most popular design of the time, was more frequently buried with individuals buried with

black-on-white bowls. Similar to the Galaz site, other general geometric design categories were also being buried with individuals at the Swartz Ruin site, with Curvilinear Design begin the most infrequent. However, unlike the Galaz site, the Curvilinear Design depiction at the Swartz Ruin site is only associated with Medium Adult (19-40) and Adult General (19 or Older) age groups, providing the possibility that this design category at the Swartz Ruin site would only be buried with older individuals. However, this is not for certain in that the Curvilinear Design category represents such a small proportion of burials at the site.

Overall, these results seemingly point to the utilization of the most popular general geometric design category, Angular Design, within their mortuary practice. However, other design categories are also associated with burials which does not point to a certain geometric design being utilized for burials, nor a specific geometric design association with a particular age group. Thus, no definitive hypothesis can be made from the data and results utilized in this analysis as they seemingly point to a random selection of geometric vessels associated with burials during the Style II period.

While this seems to be the case, these interpretations are strengthened with a chi-square test comparing general geometric design versus age (comparing three age groups). This statistics test revealed a 48% significance level, indicating that there is only fair probability (52%) that the results are anything other than the reflection of simple random variation.

Style III Design Results

Unlike Style I and Style II, figurative and geometric design were sufficiently represented among all analyzed sites in regard to the association with burials as figurative design gained popularity. As explained above, the question of the relationship between age of buried individuals and design was addressed along two different terms of the meaning of design: design class and

general figurative and general geometric design categories. Both of these terms were examined in terms of their correlation with age groups through the use of proportions as utilized for the previous analyses.

Galaz Style III Geometric vs. Figurative Design Results

Style III black-on-white ceramics at the Galaz site were represented by both the figurative and geometric design classes, with the geometric design class representing the majority of the 449 vessels during the Classic Mimbres period (A.D. 1000 – 1150). Also among the identified black-on-white vessels at the Galaz site were those black-on-white bowls which were considered to be of an uncertain design class. While these vessels hold merit in their own right, they were not used within the scope of this analysis, except to determine the true proportions at which figurative and geometric design were represented throughout the site.

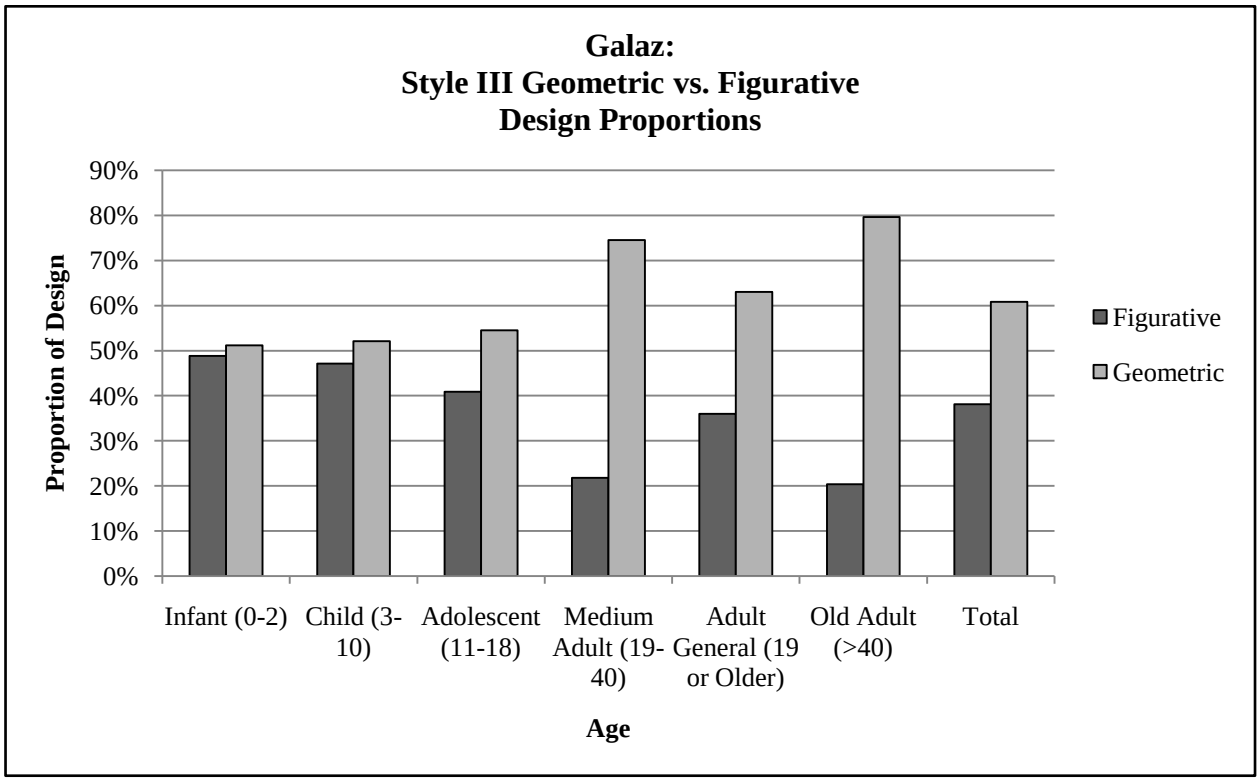

Figure 17. Galaz Style III Design Class Correlation with Age.

At the site of Galaz, the Geometric design class represents the majority of black-on-white vessels buried with individuals at that particular site, comprising a little over 60% of the assemblage (Figure 17). Figurative design, on the other hand, represents just under 40% of the bowls interred with individuals at the Galaz site, revealing its increase in popularity with buried individuals. While the figurative design class is becoming increasingly popular for mortuary practices at the Galaz site, the geometric design class still is more frequently represented among all of the age groups, with at least a little over 50% representation. The Infant (0-2) and Child (3-10) age groups present interesting data in terms of figurative and geometric design proportions. Although the black-on-white bowl assemblages of these two age groups still maintain a little over 50% majority, figurative design vessels represent nearly that amount for these two age groups. In fact, proportions of figurative and geometric vessels are nearly equally associated with individuals under the age of nineteen, while all adult age groups still maintain a high proportion of geometric over figurative design classes.

Discussion

From the results, it can be concluded that although the figurative design class had gained popularity throughout the Mimbres area in its utilization on black-on-white bowls and its usage among burials, Geometric design still represents the majority of mortuary associated bowls at the Galaz site. While this reveals a great trend among burials, it also reflects the possibility of the continuation of the utilization of geometric design on black-on-white bowls. As for the age analysis, this reveals that there was no tendency for one age group or another to be represented more frequently with the figurative design class. However, the tendency of geometric design being represented most frequently, definitively represents a statistically significant relationship between design class and age. The chi-square test of design class versus age (comparing six age

groups) reveals a 100% confidence level, meaning that the results are not simply the reflection of random variation in regard to this assemblage.

Galaz Style III General Geometric Design Results

The Style III Geometric design class at the site of Galaz comprised of 273 vessels recovered among buried individuals. From the analysis of the 273 geometric bowls (Figure 18), the vast majority of burials were associated with Angular depictions, which continues the trend from the Style II period. This design category is not the design most frequently represented among individuals at the site of Galaz, it is the most frequent design represented among all age groups at over 50% of the assemblage for each age group.

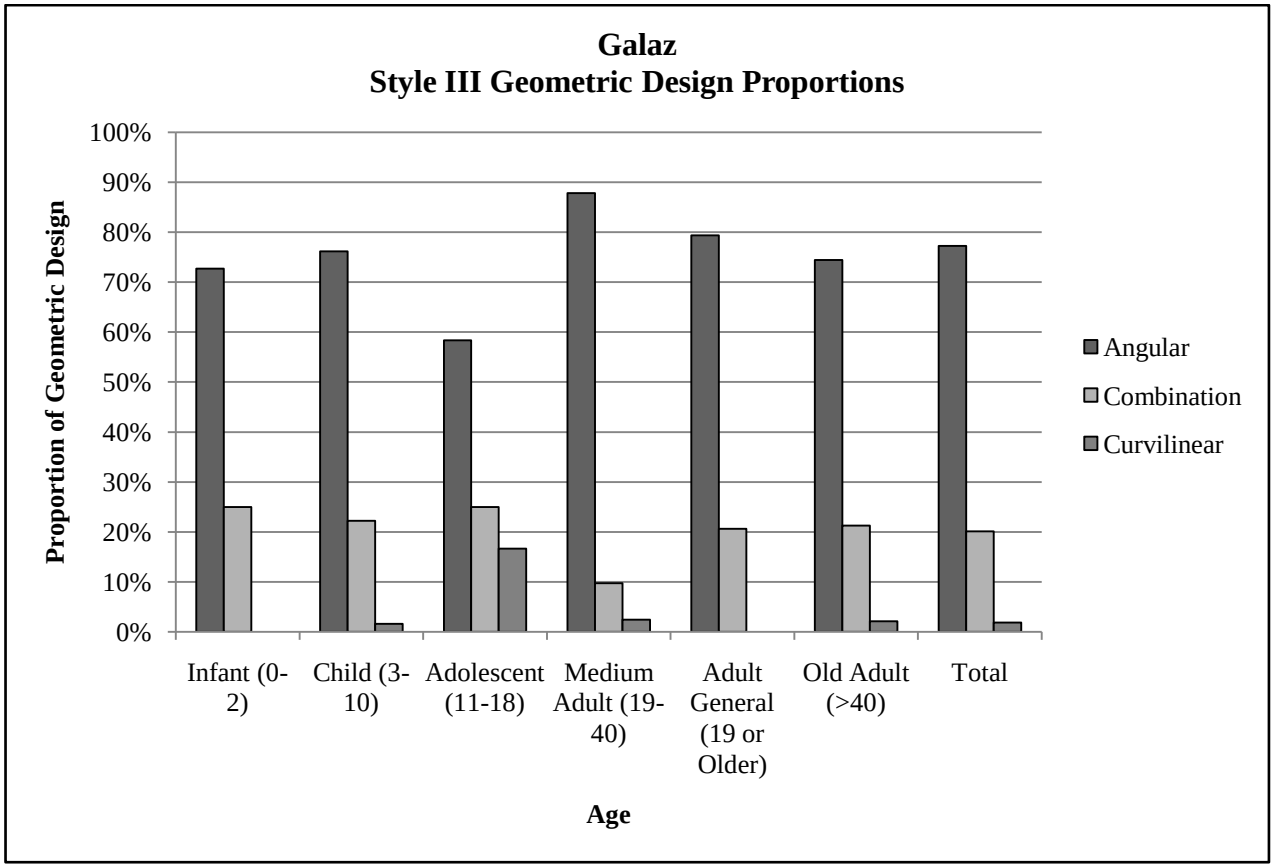

Figure 18. Galaz Style III Geometric Design Correlation with Age.

From the analysis (Figure 18) it was revealed that Curvilinear Design continued to decline in popularity of specimens that were associated with mortuary practice. Curvilinear Design is associated most frequently with the Adolescent (11-18) age group, and is only represented by over 10% of the Adolescent (11-18) assemblage. Infant (0-2) and Adult General (19 or Older) individuals are the only age groups not associated with any vessels of curvilinear design. Combination Design, is equally represented by all age groups except for Medium Adult (19-40) burials.

Discussion

From the results of the Geometric Style III assemblage, it can be theorized that burials are still being associated with the most popular geometric design of the time period as it had been during the time of the previous temporal styles. From the results it shows that since the Style II period, Angular design has increased in its popularity with association among burials, and possibly in its utilization on bowls. There also seems to be a decreased association of Curvilinear Design with burials. This could represent the continuing decline in the Curvilinear Design's utilization in general but could reflect its decrease in popularity more with its association with burials. As mentioned above, Adolescent (11-18) burials show a strong correlation with Curvilinear Design more so than any of the age groups. While this seems to reflect some kind of pattern, Curvilinear Design comprises of only five bowls from the burial assemblage, two of which are represented among the twelve Adolescent (11-18) burials. The only certainty lies with the association of the most popular design among burials.

From the chi-square test of general geometric design and age (comparing the six age groups), it was shown that there was a 98% chance that the observed differences reflected a real

pattern. Through the use of this statistical test, a significance level of 2% was calculated, indicating something other than random variation.

Galaz Style III General Figurative Design Results

The figurative design assemblage for Style III Mimbres black-on-white ceramics at Galaz is represented by 171 vessels, which comprise of all seven figurative design categories which were represented at all sites addressed in this research: Bird, Fish, Human, Insectoid, Mammal, Multiple Class, and Reptile. These design categories present an interesting pattern at the Galaz site when looking at the proportion of design representation per age group (Figure 19). All age groups at the Galaz site were associated with a sufficient amount of ceramics to determine how the groups differed in terms of figurative design buried with the individuals of the group, except for the Subadult (<19) category which, as mentioned above, was not utilized in the classification of age of buried individuals at the Galaz site.

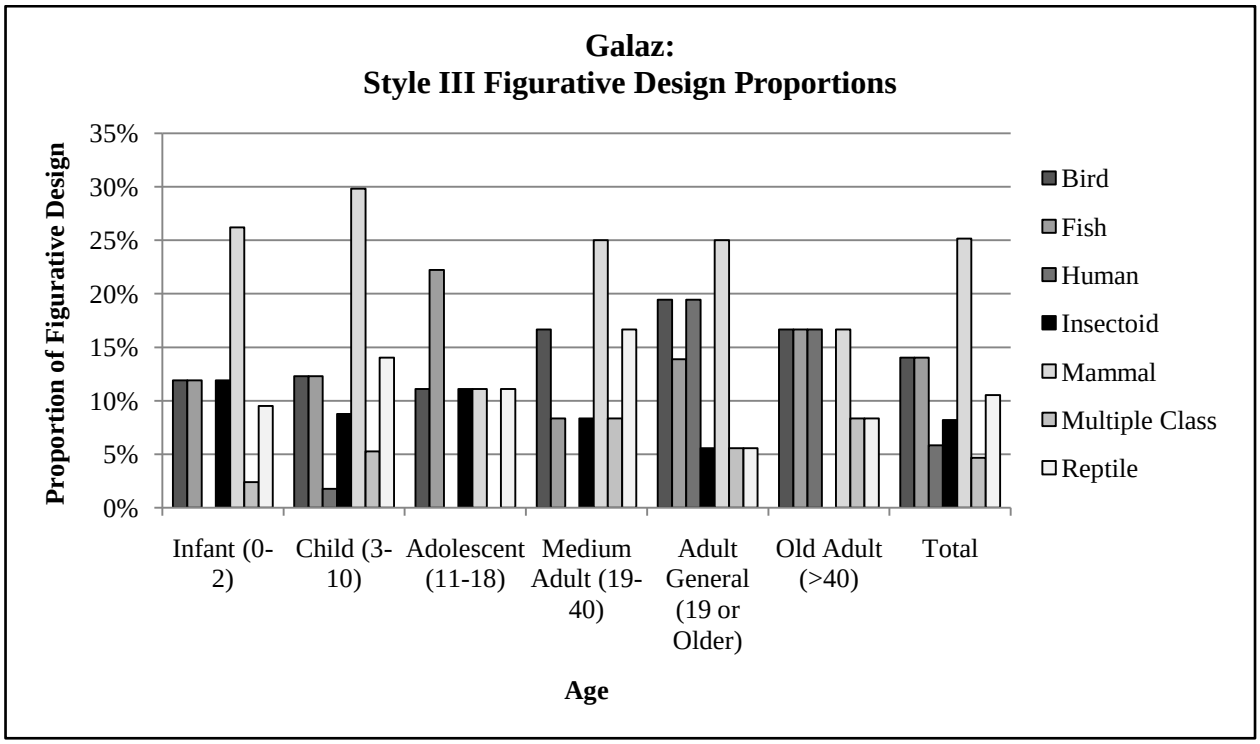

Figure 19. Galaz Style III Figurative Design Correlation with Age.

At first glance of the results for the proportional analysis of the Style III figurative design class for Galaz (Figure 19), it can be seen that the Mammal depiction is the one most frequently found among buried individuals at the site and among the different age groups, except for the Adolescent (11-18) age group and the Old Adult (>40) age group. The Adolescent (11-18) age group represents the biggest anomaly at the Galaz site for Stage III figurative burials. While all other age groups are more frequently buried with Mammal depictions adolescents individuals are more frequently buried with a Fish. This group, unlike the other age groups also consists of no representation at all of Multiple Class design. All other designs represented in that age group are equally represented among the burials. As for the Old Adult (>40) age group, all figurative design categories, except for Insectoid are represented. The Bird, Fish, Human, and Mammal designs are also revealed to be the most frequently included in old adult burials in equal proportions, while the Multiple Class and Reptile designs are also found with frequent

proportions among old adults. Interestingly enough, the Human design category is only represented among the Child (3-10), Adult General (19 or Older), and Old Adult (>40) age groups. While the Human design is represented among children, it is only within a very small proportion. As such, it can probably be deduced that Adult General (19 or Older) and Old Adult (>40) age groups are usually buried with that design category.

Discussion

While there seems to be a general tendency to bury individuals with Mammal Design associated with burials and the majority of age groups, there does not seem to be a tendency to bury any specific age group with a certain age group. However, Adolescent (11-18) burials are more frequently associated with the Fish Design than any other general figurative design. While this seems to reflect some kind of pattern. Adolescents represent only nine burials at the site, two of which are associated with the Fish depiction. Also, there are other general figurative designs that are associated with Adolescent (11-18) burials. Not only are adolescents associated with different designs, all other age groups are also associated to some extent with the Fish Design.

Similarly, Old Adult (>40) burials are not associated by a majority of Mammal Design but they are not associated with a great proportion of any general figurative design. Rather four figurative general design categories are equally associated with four different designs equally. While this seems to be an indication of some kind of patter, what it means cannot be determined here. It could, perhaps, represent the elders of a particular clan as all designs associated with Old Adult (>40) burials are associated with one or two individuals. However, this is not for certain.

The results of the general figurative design assemblage among burials at the Galaz site reveal that the differences among the burials may or may not be significant. A chi-square test

examining the seven general figurative design categories and age (six age groups) showed a significance level of 53%, indicating that it was most likely (47%) that there was not a statistically significant relationship between age and general figurative design during the Style III period at the Galaz site.

Swartz Ruin Style III Figurative vs. Geometric Design Results

The Swartz Ruin Style III design assemblage accounted for 436 of the vessels recovered from burial assemblages at the site. Although design categories contained more than just figurative and geometric design for the black-on-white bowls, the other categories do not present with sufficient data, nor do they represent any particular design categories. Thus, only figurative and geometric design were included within the analysis of the Style III black-and-white bowls at Swartz Ruin (Figure 20).

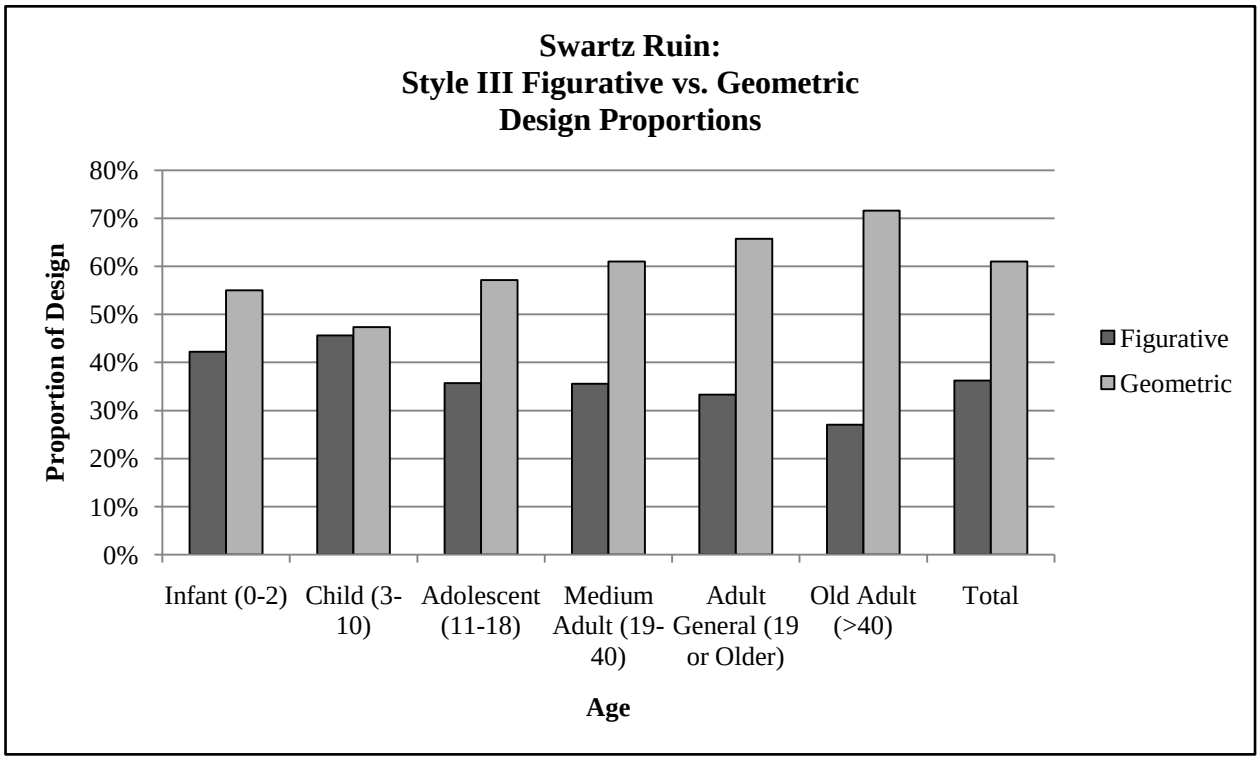

Figure 20. Swartz Ruin Style III Design Correlation with Age.

As can be seen from the results (Figure 20), geometric design is still the greatest design class represented among burials during the Style III production of black-on-white ceramics. However, although, geometric design represents the majority of vessels among all age groups, it does not represent the majority in the same proportions within all the age groups. The Child (3-10) age group, for example, is fairly similar in its association with figurative and geometric design. While all other age groups show a significantly greater tendency toward geometric design, children are represented with nearly equal association with figurative and geometric design bowls. Infants also seem to show a greater tendency for somewhat equal representation of both design categories.

Discussion

The results of the two design classes among burials at Swartz Ruin still reflect the general popularity in the utilization of the geometric design class with burials. From this it can reflect this pattern not only for the Swartz Ruin site, but also the pattern for at least two sites in the Mimbres cultural area. This reflects a continuing trend among Mimbres burials to be associated with geometric design bowls. However, the graph also shows that Infant (0-2) and Child (3-10) burials are more frequently buried with figurative design than any other age group, while Old Adult (>40) burials are least likely to be associated with figurative design. However, this could just be a representation of burials in general and does not substantiate the association of figurative design being represented by one particular age group.

According to the chi-square results of the Style III design class and age (six age groups)at the Swartz Ruin site, there is a strong probability (88%) of a statistically significant relationship between age and design class at the Swartz Ruin site, much like it had been at the Galaz site.

The chi-square test showed a significance level of 12%, indicating that the results are most probably something other than random variation.

Swartz Ruin Style III General Geometric Design Results

Style III burials associated with geometric design are represented by 266 vessels. The proportional analysis of Style III burials geometric black-on-white bowls at the Swartz Ruin site are most greatly represented by the Angular Design category (Figure 21), with very minimal association with Curvilinear Design as was also true for the Style II period. In fact, the Style III Curvilinear design has extremely decreased in its representation among burials at the site. Although minimally represented among the age groups, Curvilinear Design is present among all age groups with the exception of Adolescent (11-18) burials in similar proportions. The other two general geometric design categories are also similarly represented among age groups, with Angular Design dominating over all age groups.

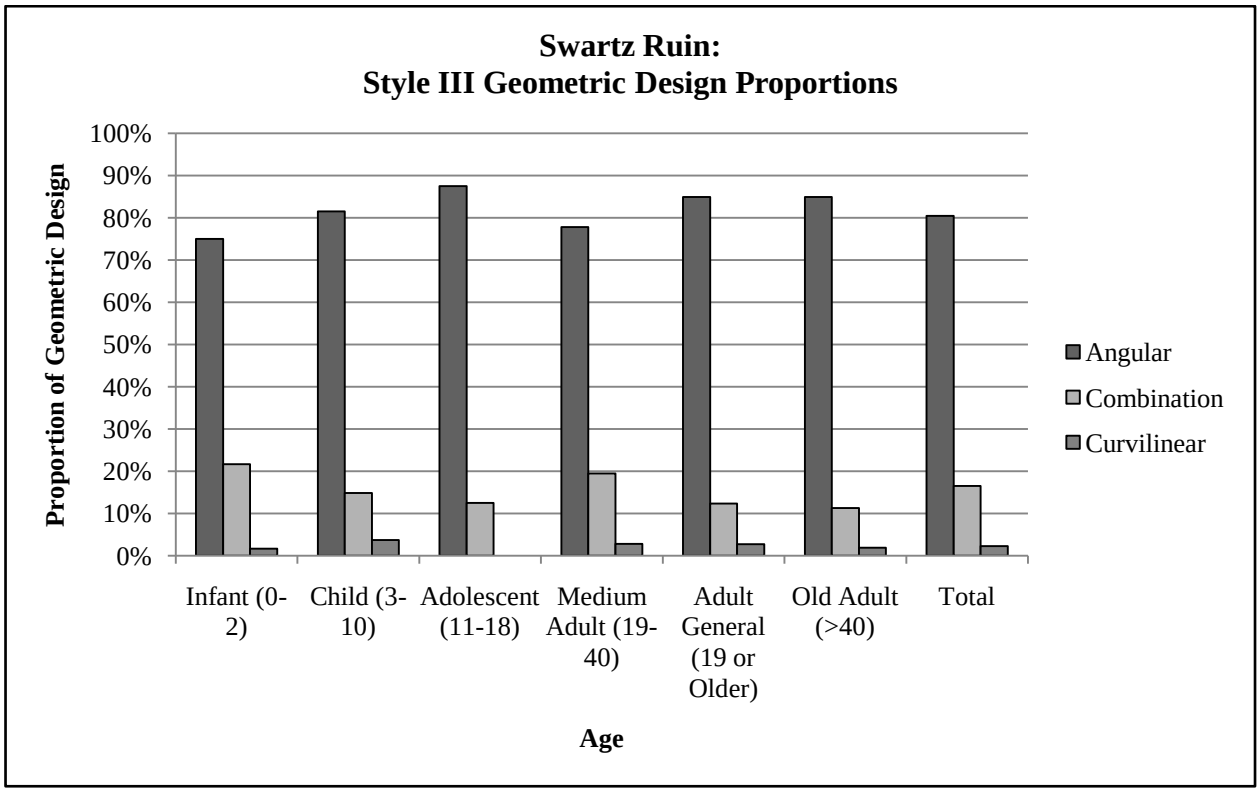

Figure 21. Swartz Ruin Style III General Geometric Design Correlation with Age.

Discussion

The continued representation of Angular Design being increasingly represented during the Style III period at the Swartz Ruin site matches the continuation from the Style II period at the Swartz Ruin site and similar results as the Galaz site. The differences between the two temporal styles at the Swartz Ruin site is revealed in the representation of Curvilinear Design among burials at the site. It is apparent that the Curvilinear Design has continued to decrease in popularity in its association with burials. However, this could be an indication in general of the decrease of the popularity for the utilization of Curvilinear design on black-on-white bowls. Also, Infant (0-2) burials are associated with a very small percentage of Style III curvilinear design where in the Style II period they were not associated at all. This difference could reveal that there is no particular age group which is treated differently than any other. All in all, the

similarity in results at the Galaz and Swartz Ruin sites show a trend for the most popular design associated with burials and that no particular age group was treated differently than any other.

The differences among the bowls associated with the different age groups for Style III burials at the Galaz site reflect results which simply reflect what would be expected from random variation. A chi-square test comparing the general figurative design categories versus age (comparing six age groups) found a 94% significance level, suggesting that there is only a 6% chance that the observed differences of these results reflect a real pattern in the association of general geometric design and age.

Swartz Ruin Style III General Figurative Design Results

The Style III figurative black-on-white bowl assemblage was represented by 158 bowls associated with burials. For the Style III general figurative design analysis at Swartz Ruin all seven of the design categories referenced in the other sites were utilized (Figure 23). When studying the proportional differences among the general figurative design assemblage throughout the site (Figure 22), it is very apparent that the Mammal depiction is the most highly represented figurative depiction at the site as it was at the Galaz site. However, unlike the Galaz site, the Mammal Design is not the majority among all age groups. In regard to the Mammal depiction, it is shown to represent the vast majority of Infant (0-2) and Medium Adult (19-40) age groups. Fish, interestingly enough, represents the depiction most frequently recovered among Child (3-10) and Adolescent (11-18) burials. This depiction is also not represented among all age groups at the site, with the Infant (0-2) group not being associated with that particular design. Old Adult (>40) burials are more frequently associated with the Insectoid general figurative design.

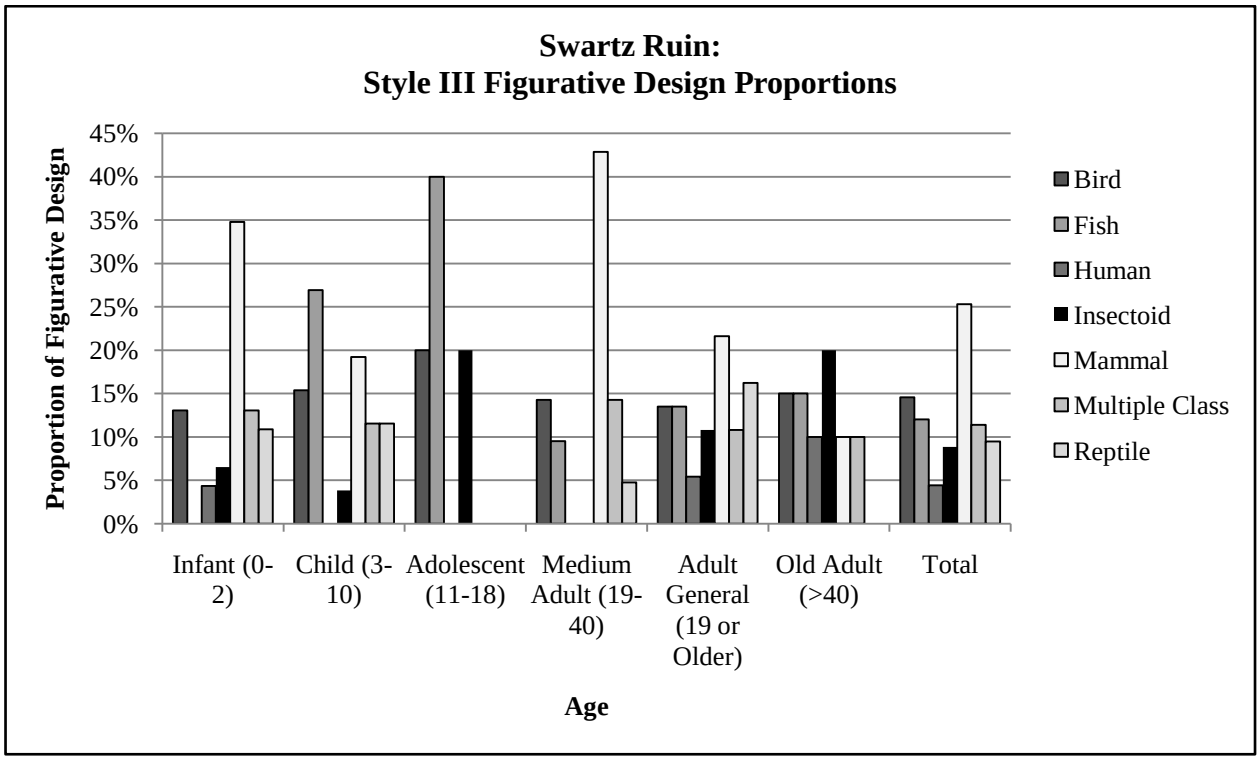

Figure 22. Swartz Ruin Style III General Figurative Design Correlation with Age.

Discussion

Similar to the Galaz site, the Swartz Ruin site shows a tendency for burials to be more frequently buried with Mammal Design. From this it can be gathered that this depiction was the most frequently buried with individuals at two sites in the Mimbres heartland. However, the most likely possibility is that Mammal was the most frequent design painted on the bowls due to the diet of the Mimbres people centering on mammals. However, unlike the Galaz site, Child (3-10) and Adolescent (11-18) burials are more frequently associated with the Fish depiction. As explained above, fish were not usually a big part of the diet (Lekson 2006). While this could be a pattern suggesting that younger individuals were buried with Fish Design, Infant (0-2) burials are still associated with the most frequent design found at the site.

Another difference between the Galaz and Swartz Ruin sites is the great association of Old Adult (>40) burials being associated with the Insectoid Design. While the at the Galaz site old adults were associated with almost equally among the designs that they were associated with, the Swartz Ruin results seemingly show a difference among the design association with Old Adult (>40) burials. However, Insectoid bowls are associated with only three of the twenty bowl assemblage of the Old Adult (>40) age group. As such, the results from the data utilized in this research still show that no age group is associated with any particular figurative design category.

The variation among the different age groups among the Style III general figurative design assemblage at the Swartz Ruin site reflects that the results are not what is to be expected from random variation. A chi-square test examining the relationship between degree of wear and age (comparing six age groups) showed a significance level of 15%, indicating that there is an 85% chance that the observed differences between general figurative design and age at the Swartz Ruin site reflect a real pattern.

NAN Ranch Figurative vs. Geometric Design Results

The Style III burial assemblage at the NAN Ranch site is represented by 101 vessels. As mentioned above, the NAN Ranch is represented by all temporal styles of Mimbres black-on-white bowls. However, it is only sufficiently represented among the Style III classes of geometric and figurative design. The site of NAN Ranch was also discovered to have two additional design classes to the figurative and geometric classes: Blank and Uncertain. While these were utilized in the totals for the figurative vs. geometric comparison, they were not utilized within the overall comparison of general design as they were not of a specific design category within each class, nor were they well represented at the site.

For the analysis of proportions of design class associated with each age group (Figure 23), the Subadult (>19) age group was not well represented, and, therefore, not analyzed. However, when analyzing the representation of figurative versus geometric design, geometric design dominates the vessels buried with individuals at the NAN Ranch site and the design class dominates those vessels associated with all age groups. From this domination of geometric vessels at the NAN Ranch site, one interesting factor is that infants are associated with over 70% of geometric vessels, with only less than 20% of the assemblage consisting of figurative vessels. This is interesting in the fact that at the Galaz and Swartz Ruin sites, geometric and figurative design were closely represented among Infant (0-2) burials. This is similar in the representation of Child (3-10) burials at the three sites. Where the NAN Ranch children substantially less figurative than geometric design, the two design classes were nearly equally represented at the Galaz and Swartz Ruin sites. The other age groups analyzed at the NAN Ranch, maintained proportional similarities to the Galaz and Swartz Ruin sites.

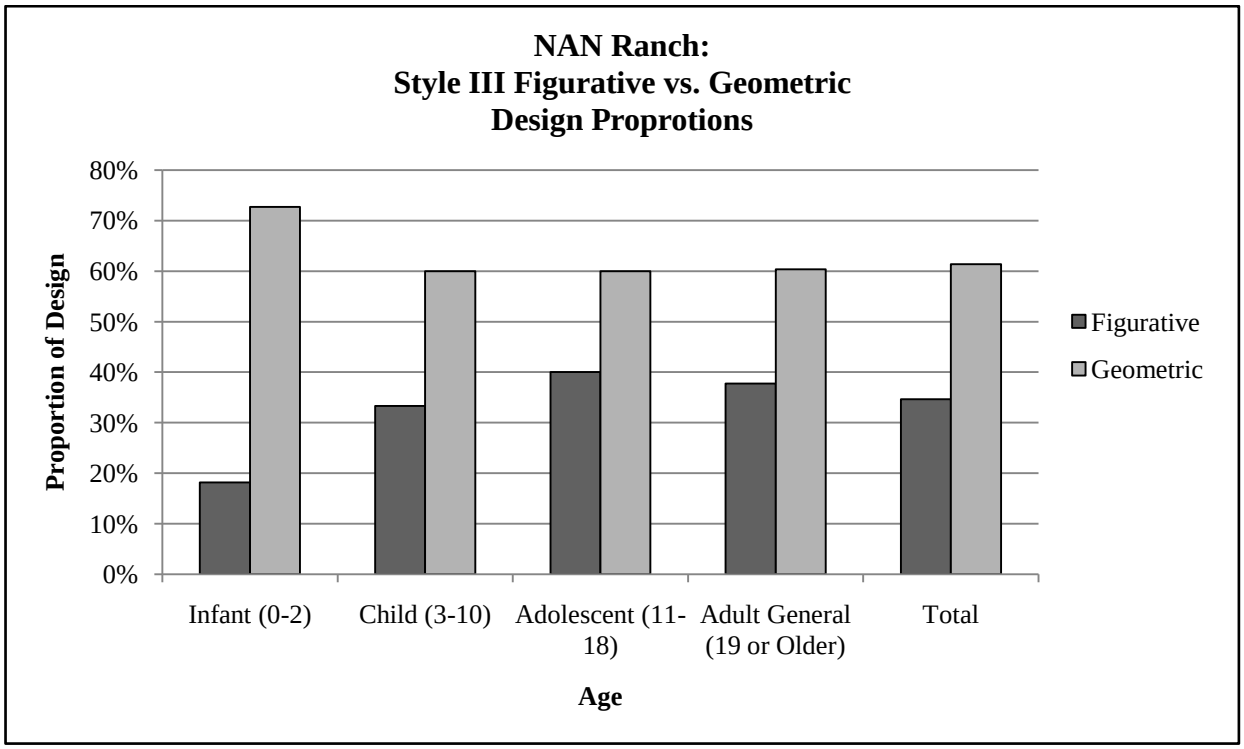

Figure 23.. NAN Ranch Style III Design Correlation with Age.

Discussion

From the analysis of Style III figurative and geometric design at the NAN Ranch site, the tendency was to bury individuals with the most popular design of the time, geometric. This shows that for at least three sites in the Mimbres heartland, the tendency was to utilize the most popular design with burials. However, unlike the Galaz and Swartz Ruin sites, the NAN Ranch results show that Infant (0-2) and Child (3-10) burials were not equally associated with the two design classes. This could possibly represent the differential treatment of some infants and children at the Galaz and Swartz Ruin sites where there was no differential treatment among them at the NAN Ranch site. However, as Infant (0-2) and Child (3-10) burials are associated with both design classes, this cannot be a certainty.

The Style III design class assemblage among the different age groups at the NAN Ranch site unlike at the previous two sites, reflects that the observed relationship between age and design class at NAN Ranch most likely is nothing other than random variation. A chi-square test of design class and age (comparing four age groups) showed a significance level of 69%, indicating that there was only a 31% chance that there was a statistically significant relationship between design class and age at the NAN Ranch site.

NAN Ranch Style III General Geometric Design Results

The Style III geometric burial assemblage at the NAN Ranch site comprised of sixty-two individual vessels, which were represented wholly by the Angular, Combination, and Curvilinear design categories which were represented at all the other sites. When looking at how the geometric design categories were represented among burials at the site of NAN Ranch (Figure 24), it was shown that over 80% of the burials were associated with Angular Design. This design was also the majority among the comparable age groups with sufficient representation, as it was at the Galaz and Swartz Ruin sites. These age groups included Infant (0-2), Child (3-10), and Adult General (19 or Older). The other two design categories are represented almost equally in the Style III burial assemblage at the NAN Ranch site. Curvilinear Design is slightly more frequently represented at this site than it had been at the Galaz and NAN Ranch sites while the Combination design is less associated with burials than it had been in the analysis of the previous two sites.

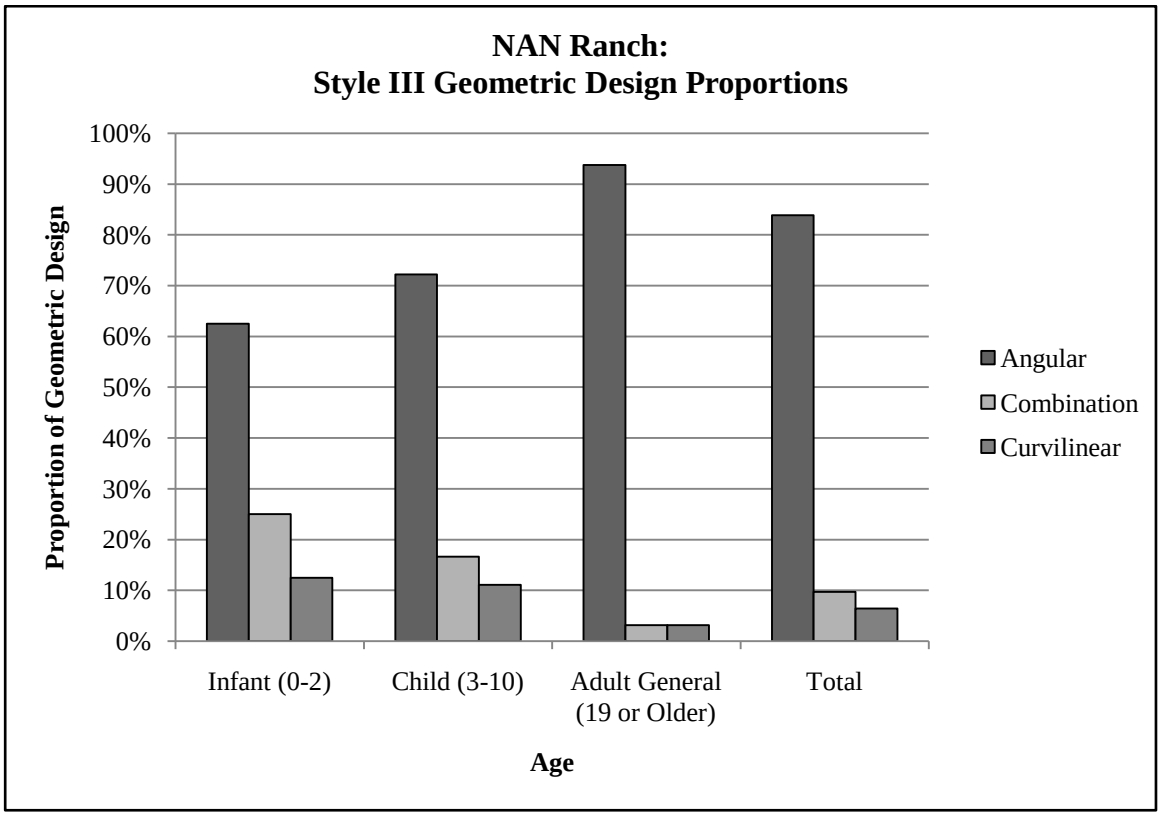

Figure 24. NAN Ranch Style III General Geometric Design Correlation with Age.

Discussion

From the analysis of the Style III geometric burial assemblage at the NAN Ranch site, it shows that there is still a tendency to bury individuals with the most popular general geometric design at the time, Angular design. However, there is a difference in the representation at the sites as far as Combination and Curvilinear Design are concerned. At the NAN Ranch site, Curvilinear design is found a bit more frequently among burials than it had been at the Galaz and Swartz Ruin sites. Combination Design is slightly less associated with burials at the NAN Ranch than at the Galaz and NAN Ranch sites. This could be a reflection of individuals at the NAN Ranch site or it could simply reflect the general black-and-white bowl assemblage at the NAN Ranch site, which is beyond the scope of this research. What these results do show is that there

is no differential treatment among individuals at the NAN Ranch site, or among at least three Mimbres sites.

The differences in the representation of general geometric design among age groups represents, according to the chi-square test, an 86% chance that these results reflect something beyond the normal variation. The chi-square test of general geometric design versus age (comparing three age groups) showed a significance level of 14%, indicating that there is a strong probability that the observed differences reflect a real pattern in the association of general geometric design with age.

NAN Ranch Style III General Figurative Design Results

Style III Figurative design at NAN Ranch comprised of thirty-five vessels. For the Style III figurative design proportional analysis at the NAN Ranch site (Figure 25), the Child (3-10) and Adult General (19 or Older) were the only age groups which were represented by more than five vessels, and, thus, could be used to compare the frequency of the different figurative designs among those two age groups. All but the Multiple Class Design category of the design categories used previously for the Galaz and NAN Ranch sites were present at the NAN Ranch site, but not in equal proportions. Similar to the Galaz and Swartz Ruin sites, Mammal Design category dominated the figurative design assemblage at NAN Ranch and was proportionally the most frequent design category represented among buried children. Among Adult General (19 or Older) burials at the NAN Ranch site, the Bird Design was the most frequent design category associated with Fish, Insectoid, and Mammal depictions being within 5% of figurative design associated bowls at the NAN Ranch site.

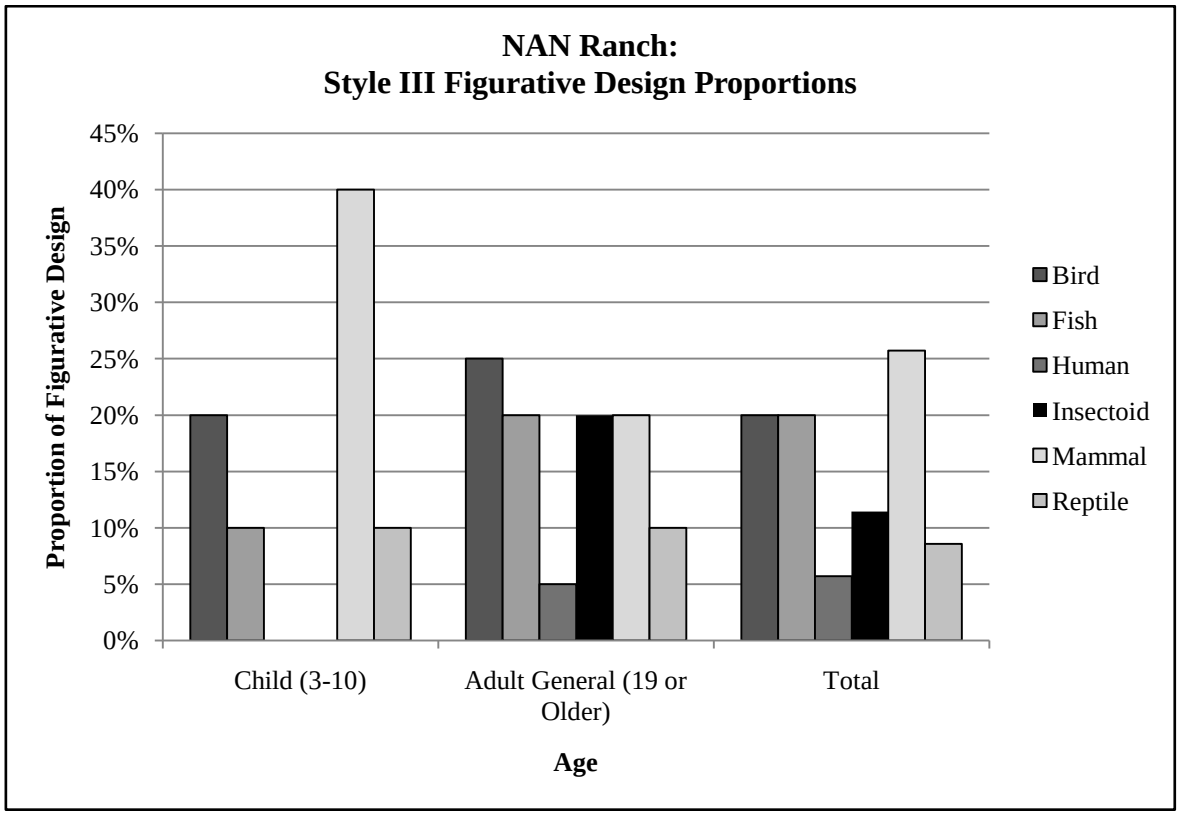

Figure 25. NAN Ranch Style III Figurative Design Correlation with Age.

Discussion

From the analysis of the Style III burial assemblage at the NAN Ranch, it can be concluded that the most popular design associated with burials was the Mammal Design, as it had been at the previous two sites analyzed. However, different from the Galaz and Swartz Ruin sites, the Adult General (19 or Older) burials were associated more frequently with Bird Design bowls over Mammal Design bowls. However, the Bird Design is only the majority by one vessel over the Fish, Insectoid, and Mammal Designs. As such, there is no singular design that can be associated as being the one most frequently associated with Adult General (19 or Older) burials at the NAN Ranch site. Children, on the other hand, are greatly represented by Mammal Design bowls. However, Child (3-10) burials are only associated with ten of the figurative vessels at the Galaz site, four of which are associated with the Mammal Design. Thus, while there appears to

be a tendency to bury children with Mammal Design bowls, the data does not make it a certainty. Thus it is concluded that, similar to the Galaz and Swartz Ruin sites, no figurative design is substantially represented among any age group.

In order to discover the full impact of these observations, a chi-square test was conducted in order to determine how statistically significant the relationship was between age and general figurative design. The chi-square test of the Style III general figurative design assemblage and age (Child (3-10) versus Adult General (19 or Older)) at the NAN Ranch site show a 43% significance level, indicating that there is only a 57% chance that the observed differences reflect a real pattern in the association of wear with age. While this chance is fairly high, there is still that 43% chance that the results are anything other than random variation.

Cameron Creek Style III Figurative vs. Geometric Design

In regard to the representation of design class among burials at the Cameron Creek site (Figure 26), it was revealed that the geometric design class was the best represented at the Cameron Creek site during the Classic Mimbres phase. However, the chart also shows that certain age groups were more associated with one design over another. The Infant (0-2) and Child (3-10) age groups are represented with a little over 60% figurative design, while the Adult General (19 or Older) and Indeterminate age groups are more frequently associated with geometric design, at over 60%. This is different from the previous three sites in that all age groups at the other sites all were more frequently associated with geometric design. From this it can be gathered that infants and children at Cameron Creek are more likely to be associated with figurative design bowls, while adults are more likely to be associated with geometric design. What this means in terms of the geometric design class dominating over the Indeterminate age group is unknown and beyond the scope of this investigation.

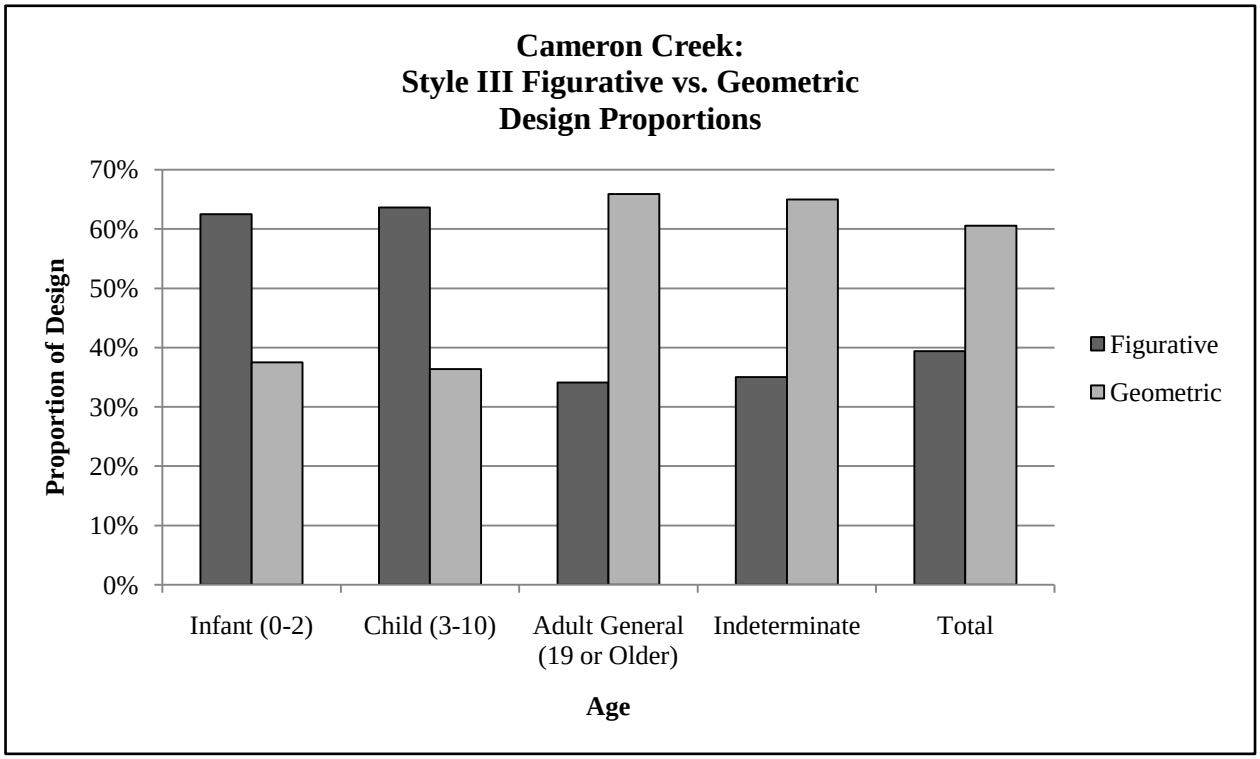

Figure 26. Cameron Creek Style III Design Correlation with Age.

Discussion

The results of the investigation reveal different trends than what was found at the other two sites. As mentioned above, the Cameron Creek site although still located in the heartland is not located along the Mimbres River but on Cameron Creek to the west of the Mimbres River (Brody 2004; LeBlanc 1983). As it is not along the main river it could be assumed that younger individuals outside of the main valley were treated differently from older individual; meaning younger individuals were usually buried with figurative design and older individuals with geometric design. However, as younger and older individuals were buried with both geometric and figurative black-on-white bowls, the pattern of differences outside of the Mimbres valley cannot be said for certain. These circumstances are also not certain in that there are so many

buried individuals at the Cameron Creek site who fall into the Indeterminate age group. What is certain is that, similar to the Galaz, Swartz Ruin, and NAN Ranch sites, burials at Cameron Creek are most frequently buried with black-on-white bowls with geometric design.

While these results show some interesting patterns which infer interesting interpretations, the chi-square test examining the relationship between Style III design class and age (four age groups) showed a significance level of 15%. These results indicate that there is a high probability (85%) that the observed differences reflect a real pattern in the association of design class with age. These results are similar to the Galaz and Swartz Ruin sites as they also indicated a high probability of a statistically significant relationship.

Cameron Creek Style III General Geometric Design Results

The geometric design class represented the majority of depictions on Mimbres black-on-white bowls among buried individuals at the Cameron Creek site with sixty-three burial associated bowls. However, it is difficult to determine how frequently each design category is associated with each age group except Adult General (19 or Older) and Indeterminate, as the other age groups were only represented by less than four geometric black-on-white bowls (Figure 27). Although, in reference to all buried individuals at the Cameron Creek site, Angular Design was by far the most frequently buried with individuals. Curvilinear design had very minimal representation at Cameron Creek, with no vessels being associated with either adults or indeterminates. Among these two age groups, however, Adult General (19 or Older) were associated with a proportion of 90% angular geometric design, while Indeterminate was associated with nearly 80%.

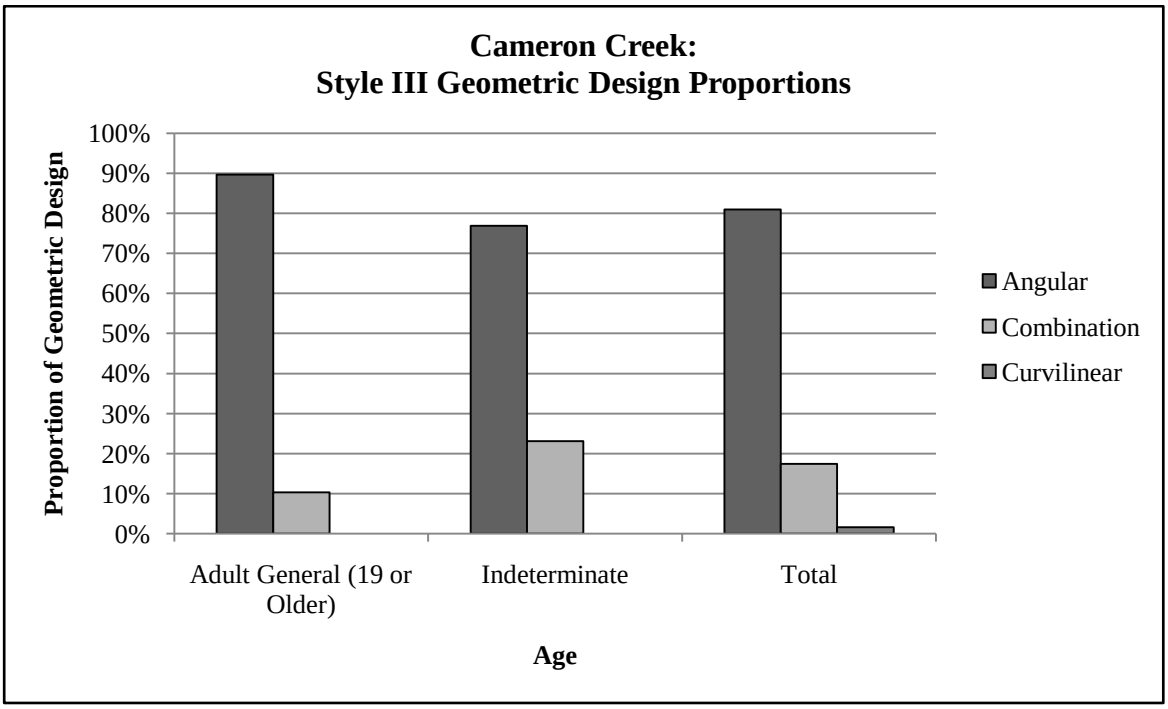

Figure 27. Cameron Creek Style III General Geometric Design Correlation with Age.

Discussion

Although the Style III general geometric design results from the Cameron Creek site cannot be used for the differential treatment of age groups, the results do show that there is still a tendency to bury individuals with the most frequently made geometric design. The burials at the Cameron Creek site also show an even lesser association of burials with the Curvilinear design. In general, the results reveal a consistency throughout the Mimbres heartland to bury individuals with the most frequent design. However, as there are other general geometric designs associated with burials the greatest hypothesis which can be derived from this is that geometric designs were randomly selected for burial, of which Angular Design happened to be the most frequent design made at the time.

These results, while showing some interesting finds, are very significant in terms of being different from what would be expected to find from random variation. A chi-square test

comparing general geometric design versus age (four age groups) showed a significance level of 0%, indicating that there is a 100% chance that the observed differences reflect a real pattern in the association of wear with age.

Cameron Creek Style III General Figurative Design Results

As seen above, the figurative design class at Cameron Creek is the least represented design class with forty-one burial associated bowls. However, it comprises the majority of Infant (0-2) and Child (3-10) burials. The first step in the process was to determine which of the general figurative designs that were represented at all the sites were best represented at Cameron Creek. Meaning, which of the figurative design categories were represented at all sites, and which of those categories were represented by more than five vessels at each particular site. These general figurative design categories included all seven categories: Bird, Fish, Human, Insectoid, Mammal, Multiple Class, and Reptile.

When examining the chart (Figure 28), it can be determined that Mammal Design was the best represented design category among buried individuals at the Cameron Creek site. Although most frequently represented among buried individuals, the Mammal Design category is not the majority among any age group, although it ties for majority with the Bird depiction among Indeterminate burials. The Fish Design is the next most frequent figurative design category associated with burials at Cameron Creek. However, the Fish depiction was only the majority among the Adult General (19 or Older) burials, while being equally represented with the other design categories among the Child (3-10) age group and not at all among infants. It should be noted that the Infant (0-2) age group is only represented by four figurative categories: Bird, Insectoid, Mammal, and Reptile. The Bird depiction represents the majority of figurative bowls among the Infant (0-2) age group, while the Insectoid, Mammal, and Reptile categories are

equally represented among that particular group. Another pattern among burials at the Cameron Creek site is that the general figurative design categories interred with children are equally represented. The Adult General (19 or Older) and Indeterminate age groups are represented by all design categories at the Cameron Creek site.

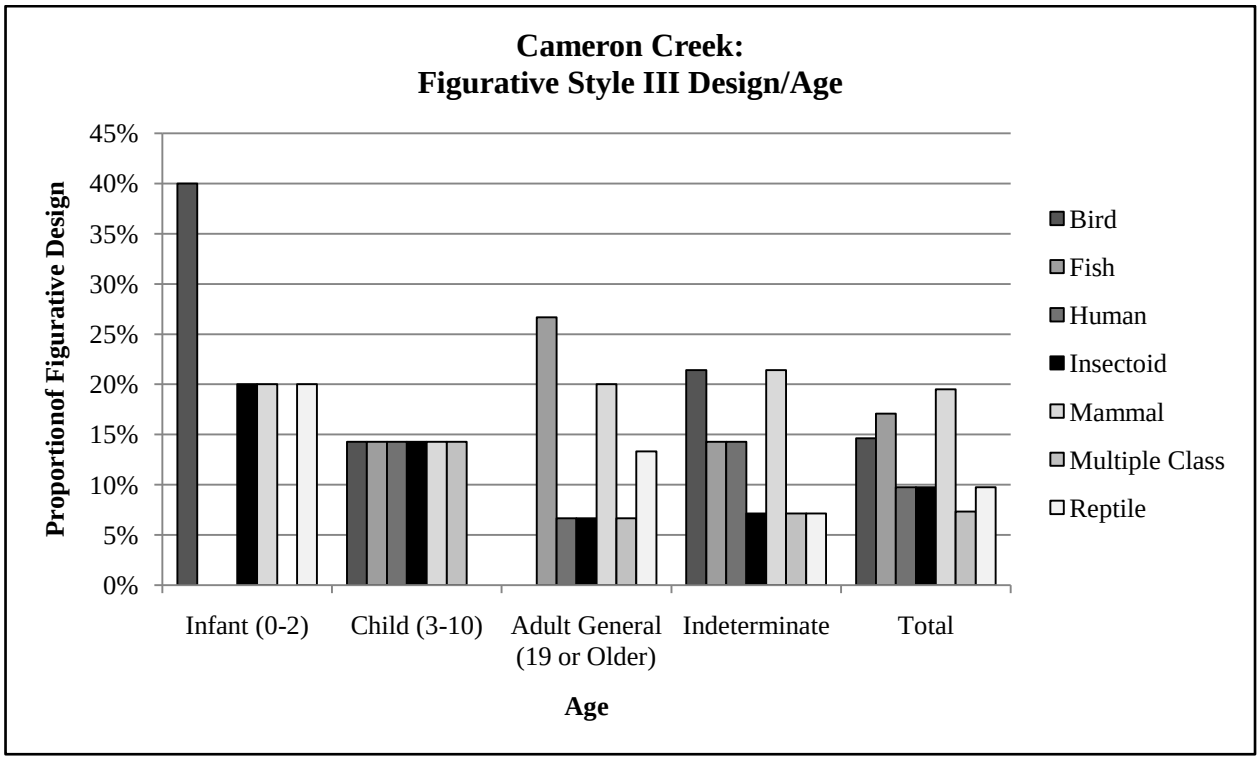

Figure 28. Cameron Creek Style III General Figurative Design Correlation with Age.

Discussion

The figurative design assemblage at the Cameron Creek represented the most interesting patterns in terms of design during the course of this research. Although the Mammal Design is associated with the most burials at the Cameron Creek site, it was not the majority associated with an age group, except perhaps the tie with the Indeterminate age group. However, as the Indeterminate age group represents no particular age, no true conclusions can be made from this

particular pattern. However, the burials that were classified within a specific age group also yielded some interesting patterns.

Infant (0-2) burials were most frequently associated with Bird Design bowls. While it could be concluded that Infant (0-2) burials were most frequently associated with this particular general figurative design, only five vessels the entire figurative design assemblage were associated with Infant (0-2) burials. Thus it can be concluded that these findings do not have any significant meaning in regard to the high proportion at which Bird Design was associated with Infant (0-2) burials. In contrast, Adult General (19 or Older) burials were more frequently associated with the Fish Design. While it could be determined that Fish is the design most frequently associated with Adult General (19 or Older) burials, other designs are associated with Adult General (19 or Older) burials. From these patterns, it can be determined that no one general figurative design category is associated with any particular age groups.

This theory is strengthened by the fact that the all general figurative design categories are equally represented among Child (3-10) burials. If there was one particular figurative design associated with a particular age group, Child (3-10) burials would be associated with a greater proportion of one particular general figurative design. From the general figurative design associated vessels with burials at the Cameron Creek site and at the other three sites investigated, it can be determined that bowl design was chosen at random in regard to age group.

These results are strengthened through a chi-square test examining general figurative design and age (considering four age groups). This statistical test showed a 86% confidence level, suggesting that there is only a 14% chance that the observed differences reflect a real pattern in the association of wear with age.

CONCLUSION

Mimbres black-on-white ceramics constitute the signature of Mimbres culture. Created from A.D. 750 – 1150, this ceramic tradition became unique through its intricate figurative and geometric designs, and also with the utilization of these vessels in the mortuary practices of the Mimbres people. Although these vessels are not solely found within burial contexts, a good portion of burials are interred with at least one Mimbres black-on-white ceramic vessel. This tradition began sometime in the Late Pithouse period (A.D. 750 – 1000) and continued for the rest of the cultural tradition. The most interesting factors attributable to these vessels and their inclusion in burials are the designs expressed on these bowls and the fact that the vessels were not solely used as mortuary items, as they usually exhibit use-wear.

The purpose of this research was to establish if there were relationships between the black-on-white ceramic attributes of wear and design and the ages of the individuals with whom they were buried. This was done through proportional analyses of four sites which contained sufficient data on the three temporal styles of Mimbres black-on-white bowls and their inclusion in burials. However, not all sites presented with sufficient data for all temporal styles, thus for most only Style III vessels were utilized in analysis and cross-site comparison. It was the hope that these comparisons would yield some kind of pattern either in an intra- or inter-site context. The analysis also included chi-square examinations to determine the significance of the patterns which were found at the sites.

While the results of the analyses yielded different patterns for each site, the analyses also revealed patterns for the Mimbres culture in general. It is apparent that the majority of individuals were usually interred with Mimbres bowls that showed very little use-wear. This pattern was consistent for all age groups. However, most age groups also had individuals which were buried with vessels which had a lot of wear. For certain, it can be hypothesized that most

vessels were chosen based upon those which were in the best condition. However, it cannot be said for certain if the vessels were personal vessels for individuals as some young and old individuals are buried with both light and heavy wear.

In reference to design correlation with age, it can be said that geometric over figurative design is the design most frequently found among burials. This is probably due to the popularity of the geometric design prior to A.D. 1000. The most frequent design found at most sites in terms of Style III geometric black-on-white vessels are Angular Design. This is significant in the continuity of representation between the sites and it is also significant that, as seen from the Galaz site analysis, Curvilinear Design had been the most frequent geometric design interred with the dead prior. As figurative design came into abundance during the Classic Mimbres period (A.D. 1000 – 1150), this was the only period for which analyses of figurative design was conducted for all four sites. In a cultural context, it is apparent that all sites represent a great majority of ceramics with Mammal design, with different emphases at the different sites for other design categories. For example, the Swartz Ruin site has its second most common design being Bird, while the Cameron Creek site has a second greater frequency in terms of Fish depictions. However, no definitive conclusion could be made about the inclusion of a specific design with any particular age group. Thus, the most likely conclusion from this is that design was chosen at random in regard to age group, with the most popular design for each design class representing the majority among burials.

In conclusion, attributes of Mimbres black-on-white bowls reveal certain patterns among burials across the Mimbres region. As there is no pattern associated with any particular age group, temporally or throughout the entire Mimbres region during the Style III period, the patterns apply to only the general Mimbres burial assemblage. In general, Mimbres burials are

associated with Light-Wear bowls with the most popular designs being the most frequently associated with any given burial. Therefore, the Mimbres people buried their dead with the best bowls from their own home assemblage, choosing a design at what, from this research, seems to be a random pattern.

Future Research

While this research shows that the Mimbres chose the best bowls, possibly from their own home assemblage, there are still burials which are associated with vessels containing a great deal of wear. Through further research it would be interesting to discover how those burials with heavier wear bowls were associated with one another; whether or not some families utilized their own personal bowls or heirlooms, or whether some families may have been poorer than other families in regard to their vessels. How mortuary bowls with no wear were placed throughout the site would also be interesting to investigate. Through research of no wear vessels and their placement among burials, it could possibly be established which individuals had bowls specifically made for their burial. If the no wear vessels are placed near one another, then it could be established that some families held higher status than others.

Another possible line of research would be to look how design is chosen based upon the frequency at which it is represented among the general assemblage. This investigation would need to look at the entire black-on-white bowl assemblage at sites to determine the frequency at which designs were found in general at one particular site or within the region. From here, the proportion at which the bowls were chosen from the general assemblage can be determined. Placement of burials would also need to be investigated in order to determine, if the most frequently made bowls could have possibly been associated within similar burial contexts. From

an investigation of the placement of the burials with the design, it could be determined if the less frequent design placement indicated higher status.

Many lines of research can be drawn from this investigation. As this research still has no definitive answer to the association of black-on-white bowls with burials, a particular pattern still could be established. Whether future investigations focus on the attributes of wear and design, or focus on other attributes some kind of pattern may emerge. No one will ever know definitively why the Mimbres began this practice nor what it means, but somehow an objective truth can be reached from the association of black-on-white bowls with burials.

APPENDIX A

Table 1. Galaz Style I Wear Numerical Data (Modified from MimPIDD 2009).

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
None	1	0	0	0	3	1	0	5
Light	6	3	1	1	3	1	0	15
Light/ Moderate	0	0	0	0	0	0	1	1
Moderate	0	0	0	0	1	0	0	1
Heavy	0	0	0	0	1	0	0	1
Total	7	3	1	1	8	2	1	23

Table 2. Galaz Style I Wear Proportions.

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
None	14%	0%	0%	0%	38%	50%	0%	22%
Light	86%	100%	100%	100%	38%	50%	0%	65%
Light/ Moderate	0%	0%	0%	0%	0%	0%	100%	4%
Moderate	0%	0%	0%	0%	13%	0%	0%	4%
Heavy	0%	0%	0%	0%	13%	0%	0%	4%
N	7	3	1	1	8	2	1	23

Table 3. Galaz Style II Wear Numerical Data (Modified from MimPIDD 2009)

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
None	0	1	0	0	2	0	0	3
Light	2	15	4	5	9	2	1	38
Light/ Moderate	4	0	0	1	0	0	1	6
Moderate	4	0	1	3	5	1	0	14
Heavy/ Moderate	0	1	0	1	2	0	0	4
Heavy	0	0	0	2	3	0	0	5
Total	10	17	5	12	21	3	2	70

Table 4. Galaz Style II Wear Proportions.

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
None	0%	6%	0%	0%	10%	0%	0%	4%
Light	20%	88%	80%	42%	43%	67%	50%	54%
Light/ Moderate	40%	0%	0%	8%	0%	0%	50%	9%
Moderate	40%	0%	20%	25%	24%	33%	0%	20%
Heavy/ Moderate	0%	6%	0%	8%	10%	0%	0%	6%
Heavy	0%	0%	0%	17%	14%	0%	0%	7%
N	10	17	5	12	21	3	2	70

Table 5. Swartz Ruin Style II Wear Numerical Data (Modified from MimPIDD 2009)

WEAR	AGE						
Degree	**Infant (0-2)**	**Child (3-10)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
None	2	0	0	0	0	0	2
Light	3	2	5	6	3	1	20
Moderate	1	1	1	1	1	2	7
Heavy	0	1	1	0	0	0	2
Total	6	4	7	7	4	3	31

Table 6. Swartz Ruin Style II Wear Proportions.

WEAR	AGE						
Degree	**Infant (0-2)**	**Child (3-10)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
None	33%	0%	0%	0%	0%	0%	6%
Light	50%	50%	71%	86%	75%	33%	65%
Moderate	17%	25%	14%	14%	25%	67%	23%
Heavy	0%	25%	14%	0%	0%	0%	6%
N	6	4	7	7	4	3	31

Table 7. Galaz Style III Wear Numerical Data (Modified from MimPIDD 2009).

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
None	3	8	1	4	5	3	0	24
Light	55	76	14	30	58	32	2	267
Light/ Moderate	10	14	3	6	14	6	1	54
Moderate	14	18	3	13	18	14	1	81
Heavy/ Moderate	3	0	0	0	1	0	1	5
Heavy	0	5	1	1	4	3	1	15
Indeterminate	1	0	0	1	0	1	0	3
Total	86	121	22	55	100	59	6	449

Table 8. Galaz Style III Proportions.

WEAR	AGE							
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
None	3%	7%	5%	7%	5%	5%	0%	5%
Light	64%	63%	64%	55%	58%	54%	33%	59%
Light/ Moderate	12%	12%	14%	11%	14%	10%	17%	12%
Moderate	16%	15%	14%	24%	18%	24%	17%	18%
Heavy/ Moderate	3%	0%	0%	0%	1%	0%	17%	1%
Heavy	0%	4%	5%	2%	4%	5%	17%	3%
Indeterminate	1%	0%	0%	2%	0%	2%	0%	1%
N	86	121	22	55	100	59	6	449

Table 9. Swartz Ruin Style III Wear Numerical Data (Modified from MimPIDD 2009).

WEAR	AGE								
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
None	18	6	1	0	8	7	7	1	48
Light	61	37	10	2	33	75	47	7	272
Light/ Moderate	6	4	0	0	5	6	3	0	24
Moderate	14	5	2	0	3	13	11	1	49
Heavy/ Moderate	2	1	0	0	1	2	0	0	6
Heavy	5	2	1	0	6	2	5	1	22
Indeterminate	6	2	1	0	3	6	1	0	19
Total	112	57	15	2	59	111	74	10	440

Table 10. Swartz Ruin Style III Proportions.

WEAR	AGE								
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
None	16%	11%	7%	0%	14%	6%	9%	10%	11%
Light	54%	65%	67%	100%	56%	68%	64%	70%	62%
Light/ Moderate	5%	7%	0%	0%	8%	5%	4%	0%	5%
Moderate	13%	9%	13%	0%	5%	12%	15%	10%	11%
Heavy/ Moderate	2%	2%	0%	0%	2%	2%	0%	0%	1%
Heavy	4%	4%	7%	0%	10%	2%	7%	10%	5%
Indeterminate	5%	4%	7%	0%	5%	5%	1%	0%	4%
N	112	57	15	2	59	111	74	10	440

Table 11. NAN Ranch Style III Wear Numerical Data (Modified from MimPIDD 2009)

WEAR	AGE					
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Adult General (19 or Older)**	**Total**
None	0	4	1	0	0	5
Light	4	14	2	1	29	50
Light/Moderate	1	0	0	1	1	3
Moderate	5	8	1	0	15	29
Heavy	1	4	1	0	6	12
Indeterminate	0	0	0	0	2	2
Total	11	30	5	2	53	101

Table 12. NAN Ranch Style III Wear Proportions.

WEAR	AGE					
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Adult General (19 or Older)**	**Total Burials**
None	0%	13%	20%	0%	0%	5%
Light	36%	47%	40%	50%	55%	50%
Light/ Moderate	9%	0%	0%	50%	2%	3%
Moderate	45%	27%	20%	0%	28%	29%
Heavy	9%	13%	20%	0%	11%	12%
Indeterminate	0%	0%	0%	0%	4%	2%
N	11	30	5	2	53	101

Table 13. Cameron Creek Style III Wear Numerical Data (Modified from MimPIDD 2009).

WEAR	AGE					
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Adult General (19 or Older)**	**Indeterminate**	**Total**
None	2	1	0	5	4	12
Light	1	3	0	24	13	41
Light/Moderate	2	1	0	1	1	5
Moderate	1	4	0	5	11	21
Heavy/Moderate	0	0	0	0	1	1
Heavy	1	0	0	1	6	8
Indeterminate	1	2	1	8	4	16
Total	8	11	1	44	40	104

Table 14. Cameron Creek Style III Wear Proportions.

WEAR	AGE					
Degree	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Adult General (19 or Older)**	**Indeterminate**	**Total Burials**
None	25%	9%	0%	11%	10%	12%
Light	13%	27%	0%	55%	33%	39%
Light/Moderate	25%	9%	0%	2%	3%	5%
Moderate	13%	36%	0%	11%	28%	20%
Heavy/Moderate	0%	0%	0%	0%	3%	1%
Heavy	13%	0%	0%	2%	15%	8%
Indeterminate	13%	18%	100%	18%	10%	15%
N	8	11	1	44	40	104

APPENDIX B

Table 15. Galaz Style I Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total
Geometric	7	3	1	1	8	2	1	23

Table 16. Galaz Style I General Geometric Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE							
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total
Angular	1	2	0	0	4	0	0	7
Combination	2	1	1	0	1	0	0	5
Curvilinear	4	0	0	1	3	2	1	11
Total	7	3	1	1	8	2	1	23

Table 17. Galaz Style I General Geometric Proportions.

DESIGN	AGE							
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total Burials
Angular	14%	67%	0%	0%	50%	0%	0%	30%
Combination	29%	33%	100%	0%	13%	0%	0%	22%
Curvilinear	57%	0%	0%	100%	38%	100%	100%	48%
N	7	3	1	1	8	2	1	23

Table 18.

Table 18. Galaz Style II Figurative vs. Geometric Design Numerical Data
(Modified from MimPIDD 2009).

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total
Figurative	1	1	1	1	2	0	0	6
Geometric	9	16	4	11	19	3	2	64
Total	10	17	5	12	21	3	2	70

Table 19. Galaz Style II Figurative vs. Geometric Design Proportions.

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total Burials
Figurative	10%	6%	20%	8%	10%	0%	0%	9%
Geometric	90%	94%	80%	92%	90%	100%	100%	91%
N	10	17	5	12	21	3	2	70

Table 20. Galaz Style II General Geometric Design Numerical Data
(Modified from MimPIDD 2009).

DESIGN	AGE							
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total
Angular	4	8	3	8	15	1	2	41
Checkerboard	0	1	0	0	0	0	0	1
Combination	5	4	1	3	3	2	0	18
Curvilinear	0	2	0	0	1	0	0	3
Indeterminate	0	1	0	0	0	0	0	1
Total	9	16	4	11	19	3	2	64

Table 21. Galaz Style II General Geometric Design Proportions.

DESIGN	AGE							
Geometric General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Angular	44%	50%	75%	73%	79%	33%	100%	64%
Checkerboard	0%	6%	0%	0%	0%	0%	0%	2%
Combination	56%	25%	25%	27%	16%	67%	0%	28%
Curvilinear	0%	13%	0%	0%	5%	0%	0%	5%
Indeterminate	0%	6%	0%	0%	0%	0%	0%	2%
N	9	16	4	11	19	3	2	64

Table 22. Swartz Ruin Style II Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	**Infant (0-2)**	**Child (3-10)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Figurative	0	2	0	1	1	1	5
Geometric	6	2	7	6	3	2	26
Total	6	4	7	7	4	3	31

Table 23. Swartz Ruin Style II Figurative vs. Geometric Design Proportions.

Design Class	**Infant (0-2)**	**Child (3-10)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Figurative	0%	50%	0%	14%	25%	33%	16%
Geometric	100%	50%	100%	86%	75%	67%	84%
N	6	4	7	7	4	3	31

Table 24. Swartz Ruin Style II General Geometric Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE						
Geometric General	**Infant (0-2)**	**Child (3-10)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Angular	4	1	5	5	3	1	19
Combination	2	1	1	0	0	1	5
Curvilinear	0	0	1	1	0	0	2
Total	6	2	7	6	3	2	26

Table 25. Swartz Ruin Style II General Geometric Design Proportions.

DESIGN	AGE							
Geometric General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Angular	44%	50%	75%	73%	79%	33%	100%	64%
Checkerboard	0%	6%	0%	0%	0%	0%	0%	2%
Combination	56%	25%	25%	27%	16%	67%	0%	28%
Curvilinear	0%	13%	0%	0%	5%	0%	0%	5%
Indeterminate	0%	6%	0%	0%	0%	0%	0%	2%
N	9	16	4	11	19	3	2	64

Table 26. Galaz Style III Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Figurative	42	57	9	12	36	12	3	171
Geometric	44	63	12	41	63	47	3	273
Uncertain	0	1	1	2	1	0	0	5
Total	86	121	22	55	100	59	6	449

Table 27. Galaz Style III Figurative vs. Geometric Design Proportions.

Design Class	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Figurative	49%	47%	41%	22%	36%	20%	50%	38%
Geometric	51%	52%	55%	75%	63%	80%	50%	61%
Uncertain	0%	1%	5%	4%	1%	0%	0%	1%
N	86	121	22	55	100	59	6	449

Table 28. Galaz Style III General Geometric Design Numerical Data
(Modified from MimPIDD 2009).

DESIGN	AGE							
Geometric General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Angular	32	48	7	36	50	35	3	211
Checkerboard	0	0	0	0	0	1	0	1
Combination	11	14	3	4	13	10	0	55
Curvilinear	0	1	2	1	0	1	0	5
N/A	1	0	0	0	0	0	0	1
Total	44	63	12	41	63	47	3	273

Table 29. Galaz Style III General Geometric Design Proportions.

DESIGN	AGE							
Geometric General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Angular	73%	76%	58%	88%	79%	74%	100%	77%
Checkerboard	0%	0%	0%	0%	0%	2%	0%	0%
Combination	25%	22%	25%	10%	21%	21%	0%	20%
Curvilinear	0%	2%	17%	2%	0%	2%	0%	2%
N/A	2%	0%	0%	0%	0%	0%	0%	0%
N	44	63	12	41	63	47	3	273

Table 30. Galaz Style III General Figurative Design Numerical Data
(Modified from MimPIDD 2009).

DESIGN	AGE							
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Amphibian	2	2	0	0	1	2	0	7
Bighorn	0	0	1	0	0	0	0	1
Bird	5	7	1	2	7	2	0	24
Bird/Human/ Multiple Class	1	0	1	0	0	0	0	2
Botanical/ Mammal	0	1	0	0	0	0	0	1
Composite	2	0	1	0	1	0	0	4
Composite/ Fish	0	0	0	1	0	0	0	1
Composite/ Human	2	0	0	0	0	0	0	2
Fish	5	7	2	1	5	2	2	24
Fish Indeterminate	0	1	0	0	0	0	0	1
Human	0	1	0	0	7	2	0	10
Indeterminate	1	4	0	1	0	0	1	7
Indeterminate/ Insectoid	2	0	0	0	0	0	0	2
Indeterminate/ Mammal	1	0	0	0	0	0	0	1
Insectoid	5	5	1	1	2	0	0	14
Mammal	11	17	1	3	9	2	0	43
Multiple Class	1	3	0	1	2	1	0	8
Object	0	1	0	0	0	0	0	1
Reptile	4	8	1	2	2	1	0	18
Total	42	57	9	12	36	12	3	171

Table 31. Galaz Style III General Figurative Design Proportions.

DESIGN	AGE							
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Amphibian	5%	4%	0%	0%	3%	17%	0%	4%
Bighorn	0%	0%	11%	0%	0%	0%	0%	1%
Bird	12%	12%	11%	17%	19%	17%	0%	14%
Bird/Human/ Multiple Class	2%	0%	11%	0%	0%	0%	0%	1%
Botanical/ Mammal	0%	2%	0%	0%	0%	0%	0%	1%
Composite	5%	0%	11%	0%	3%	0%	0%	2%
Composite/Fish	0%	0%	0%	8%	0%	0%	0%	1%
Composite/ Human	5%	0%	0%	0%	0%	0%	0%	1%
Fish	12%	12%	22%	8%	14%	17%	67%	14%
Fish Indeterminate	0%	2%	0%	0%	0%	0%	0%	1%
Human	0%	2%	0%	0%	19%	17%	0%	6%
Indeterminate	2%	7%	0%	8%	0%	0%	33%	4%
Indeterminate/ Insectoid	5%	0%	0%	0%	0%	0%	0%	1%
Indeterminate/ Mammal	2%	0%	0%	0%	0%	0%	0%	1%
Insectoid	12%	9%	11%	8%	6%	0%	0%	8%
Mammal	26%	30%	11%	25%	25%	17%	0%	25%
Multiple Class	2%	5%	0%	8%	6%	8%	0%	5%
Object	0%	2%	0%	0%	0%	0%	0%	1%
Reptile	10%	14%	11%	17%	6%	8%	0%	11%
N	42	57	9	12	36	12	3	171

Table 32. Swartz Ruin Style III Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Tot**
Blank	1	2	0	0	1	0	1	0	5
Figurative	46	26	5	0	21	37	20	3	158
Geometric	60	27	8	2	36	73	53	7	266
Uncertain	2	2	1	0	1	1	0	0	7
Total	109	57	14	2	59	111	74	10	436

Table 33. Swartz Ruin Style III Figurative vs. Geometric Design Proportions.

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total Burials
Blank	1%	4%	0%	0%	2%	0%	1%	0%	1%
Figurative	42%	46%	36%	0%	36%	33%	27%	30%	36%
Geometric	55%	47%	57%	100%	61%	66%	72%	70%	61%
Uncertain	2%	4%	7%	0%	2%	1%	0%	0%	2%
N	109	57	14	2	59	111	74	10	436

Table 34. Swartz Ruin Style III General Geometric Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE								
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total
Angular	45	22	7	1	28	62	45	4	214
Combination	13	4	1	1	7	9	6	3	44
Curvilinear	1	1	0	0	1	2	1	0	6
N/A	1	0	0	0	0	0	1	0	2
Total	60	27	8	2	36	73	53	7	266

Table 35. Swartz Ruin Style III General Geometric Design Proportions.

DESIGN	AGE								
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Medium Adult (19-40)	Adult General (19 or Older)	Old Adult (>40)	Indeterminate	Total Burials
Angular	75%	81%	88%	50%	78%	85%	85%	57%	80%
Combination	22%	15%	13%	50%	19%	12%	11%	43%	17%
Curvilinear	2%	4%	0%	0%	3%	3%	2%	0%	2%
N/A	2%	0%	0%	0%	0%	0%	2%	0%	1%
N	60	27	8	2	36	73	53	7	266

Table 36. Swartz Ruin Style III General Figurative Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE							
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total**
Amphibian	2	1	1	1	0	1	0	6
Amphibian/ Reptile	1	0	0	0	0	0	0	1
Bird	6	4	1	3	5	3	1	23
Bird/Composite	1	0	0	0	0	0	0	1
Bird/ Indeterminate	0	0	0	0	0	1	0	1
Composite	2	1	0	0	1	1	0	5
Composite/Human	0	1	0	0	1	0	0	2
Composite/ Indeterminate	0	0	0	1	0	1	0	2
Composite/ Insectoid	0	0	0	1	0	0	0	1
Fish	0	7	2	2	5	3	0	19
Human	2	0	0	0	2	2	1	7
Human/ Multiple Class	1	0	0	0	0	0	0	1
Indeterminate	0	0	0	0	1	0	0	1
Insectoid	3	1	1	0	4	4	1	14
Mammal	16	5	0	9	8	2	0	40
Multiple Class	6	3	0	3	4	2	0	18
N/A	1	0	0	0	0	0	0	1
Reptile	5	3	0	1	6	0	0	15
Total	46	26	5	21	37	20	3	158

Table 37. Swartz Ruin Style III General Figurative Design Proportions.

DESIGN	AGE							
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Medium Adult (19-40)**	**Adult General (19 or Older)**	**Old Adult (>40)**	**Indeterminate**	**Total Burials**
Amphibian	4%	4%	20%	5%	0%	5%	0%	4%
Amphibian/ Reptile	2%	0%	0%	0%	0%	0%	0%	1%
Bird	13%	15%	20%	14%	14%	15%	33%	15%
Bird/Composite	2%	0%	0%	0%	0%	0%	0%	1%
Bird/ Indeterminate	0%	0%	0%	0%	0%	5%	0%	1%
Composite	4%	4%	0%	0%	3%	5%	0%	3%
Composite/ Human	0%	4%	0%	0%	3%	0%	0%	1%
Composite/ Indeterminate	0%	0%	0%	5%	0%	5%	0%	1%
Composite/ Insectoid	0%	0%	0%	5%	0%	0%	0%	1%
Fish	0%	27%	40%	10%	14%	15%	0%	12%
Human	4%	0%	0%	0%	5%	10%	33%	4%
Human/ Multiple Class	2%	0%	0%	0%	0%	0%	0%	1%
Indeterminate	0%	0%	0%	0%	3%	0%	0%	1%
Insectoid	7%	4%	20%	0%	11%	20%	33%	9%
Mammal	35%	19%	0%	43%	22%	10%	0%	25%
Multiple Class	13%	12%	0%	14%	11%	10%	0%	11%
N/A	2%	0%	0%	0%	0%	0%	0%	1%
Reptile	11%	12%	0%	5%	16%	0%	0%	9%
N	46	26	5	21	37	20	3	158

Table 38. NAN Ranch Style III Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Adult General (19 or Older)	Total
Blank	1	2	0	0	0	3
Figurative	2	10	2	1	20	35
Geometric	8	18	3	1	32	62
Uncertain	0	0	0	0	1	1
Total	11	30	5	2	53	101

Table 39. NAN Ranch Style III Figurative vs. Geometric Design Proportions.

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Adult General (19 or Older)	Total Burials
Blank	9%	7%	0%	0%	0%	3%
Figurative	18%	33%	40%	50%	38%	35%
Geometric	73%	60%	60%	50%	60%	61%
Uncertain	0%	0%	0%	0%	2%	1%
N	11	30	5	2	53	101

Table 40. NAN Ranch Style III General Geometric Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE					
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Adult General (19 or Older)	Total
Angular	5	13	3	1	30	52
Combination	2	3	0	0	1	6
Curvilinear	1	2	0	0	1	4
Total	8	18	3	1	32	62

Table 41. NAN Ranch Style III General Geometric Design Proportions.

DESIGN	AGE					
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Subadult (<19)	Adult General (19 or Older)	Total Burials
Angular	63%	72%	100%	100%	94%	84%
Combination	25%	17%	0%	0%	3%	10%
Curvilinear	13%	11%	0%	0%	3%	6%
N	8	18	3	1	32	62

Table 42. NAN Ranch General Figurative Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE					
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Adult General (19 or Older)**	**Total**
Bird	0	2	0	0	5	7
Composite	0	1	0	0	0	1
Fish	0	1	2	0	4	7
Fish/Human	1	0	0	0	0	1
Human	1	0	0	0	1	2
Indeterminate	0	1	0	0	0	1
Insectoid	0	0	0	0	4	4
Mammal	0	4	0	1	4	9
Reptile	0	1	0	0	2	3
Total	2	10	2	1	20	35

Table 43. NAN Ranch General Figurative Design Proportions.

DESIGN	AGE					
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Subadult (<19)**	**Adult General (19 or Older)**	**Total Burials**
Bird	0%	20%	0%	0%	25%	20%
Composite	0%	10%	0%	0%	0%	3%
Fish	0%	10%	100%	0%	20%	20%
Fish/Human	50%	0%	0%	0%	0%	3%
Human	50%	0%	0%	0%	5%	6%
Indeterminate	0%	10%	0%	0%	0%	3%
Insectoid	0%	0%	0%	0%	20%	11%
Mammal	0%	40%	0%	100%	20%	26%
Reptile	0%	10%	0%	0%	10%	9%
N	2	10	2	1	20	35

Table 44. Cameron Creek Style III Figurative vs. Geometric Design Numerical Data (Modified from MimPIDD 2009).

Design Class	**Infant (0-2)**	**Child (3-10)**	**Adolescent (11-18)**	**Adult General (19 or Older)**	**Indeterminate**	**Total**
Figurative	5	7	0	15	14	41
Geometric	3	4	1	29	26	63
Total	8	11	1	44	40	104

Table 45. Cameron Creek Style III Figurative vs. Geometric Design Proportions.

Design Class	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Adult General (19 or Older)	Indeterminate	Total Burials
Figurative	63%	64%	0%	34%	35%	39%
Geometric	38%	36%	100%	66%	65%	61%
N	8	11	1	44	40	104

Table 46. Cameron Creek Style III General Geometric Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE					
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Adult General (19 or Older)	Indeterminate	Total
Angular	1	3	1	26	20	51
Combination	2	0	0	3	6	11
Curvilinear	0	1	0	0	0	1
Total	3	4	1	29	26	63

Table 47. Cameron Creek Style III General Geometric Design Proportions.

DESIGN	AGE					
Geometric General	Infant (0-2)	Child (3-10)	Adolescent (11-18)	Adult General (19 or Older)	Indeterminate	Total Burials
Angular	33%	75%	100%	90%	77%	81%
Combination	67%	0%	0%	10%	23%	17%
Curvilinear	0%	25%	0%	0%	0%	2%
N	3	4	1	29	26	63

Table 48. Cameron Creek Style III General Figurative Design Numerical Data (Modified from MimPIDD 2009).

DESIGN	AGE				
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adult General (19 or Older)**	**Indeterminate**	**Total**
Bird	2	1	0	3	6
Composite	0	0	2	1	3
Composite/Human	0	1	0	0	1
Fish	0	1	4	2	7
Human	0	1	1	2	4
Insectoid	1	1	1	1	4
Mammal	1	1	3	3	8
Multiple Class	0	1	1	1	3
Object	0	0	1	0	1
Reptile	1	0	2	1	4
Total	5	7	15	14	41

Table 49. Cameron Creek Style III General Figurative Design Proportions.

DESIGN	AGE				
Figurative General	**Infant (0-2)**	**Child (3-10)**	**Adult General (19 or Older)**	**Indeterminate**	**Total Burials**
Bird	40%	14%	0%	21%	15%
Composite	0%	0%	13%	7%	7%
Composite/Human	0%	14%	0%	0%	2%
Fish	0%	14%	27%	14%	17%
Human	0%	14%	7%	14%	10%
Insectoid	20%	14%	7%	7%	10%
Mammal	20%	14%	20%	21%	20%
Multiple Class	0%	14%	7%	7%	7%
Object	0%	0%	7%	0%	2%
Reptile	20%	0%	13%	7%	10%
N	5	7	15	14	41

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