Paths of Power: Assessing the Role of Cahokia-Style Beakers

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PATHS OF POWER: ASSESSING THE ROLE OF CAHOKIA-STYLE BEAKERS

by

Melinda Alaine Martin

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Abstract

Mississippian ceramic beakers (ca. A.D. 1050-1400), are often associated with Cahokia. However, few comprehensive analyses of the spatial and temporal variations of these beakers outside of the Cahokia region has taken place. Recent absorbed organic residue analyses associates beakers with a purifying liquid known as black drink. Since this association, new evidence has emerged casting doubt on the accuracy of the results. In this thesis, I suggest beakers were utilized at more locales in the Central Mississippi Valley than was previously thought and that symbolically charged beakers, with regional variants, were established by religious sodalities throughout the Cahokia region and Central Mississippi Valley to establish non-kinship relationships among polities. I further suggest the beaker and black drink connection be re-evaluated and that the utilization of beakers focused on the power of sustenance to the body and soul to travel the Path of Souls.
# Table of Contents

List of Abbreviations \hspace{1cm} viii.

List of Figures \hspace{1cm} ix.

I. Chapter 1 Introduction \hspace{1cm} 1
   a. Purpose of Research \hspace{1cm} 1
   b. Research Questions \hspace{1cm} 3
   c. Hypotheses \hspace{1cm} 4
   d. Thesis Outline \hspace{1cm} 6

II. Chapter 2 Background and Literature Review \hspace{1cm} 9
   a. Beaker Styles and Geographic Locations \hspace{1cm} 10
   b. Literature Review \hspace{1cm} 15

III. Chapter 3 Iconographic Methodology \hspace{1cm} 18

IV. Chapter 4 Paths of Power: An Iconographic Analysis of the Double Legged Q Beaker Motif \hspace{1cm} 24
   a. Double-legged Q Motif \hspace{1cm} 26
   b. Path of Souls \hspace{1cm} 35
   c. Sacred Fire Spiral \hspace{1cm} 38

V. Chapter 5 Flights of the Soul: An Iconographic Analysis of Geometric Beaker Motifs \hspace{1cm} 40
   a. Vandeventer Beaker \hspace{1cm} 41
   b. Altered States of Consciousness \hspace{1cm} 43
   c. Pareidolia \hspace{1cm} 46
   d. Ester Berry Beaker \hspace{1cm} 48

VI. Chapter 6 Magic, Myths, and Monsters: An Iconographic Analysis of Avian and Serpent Beaker Motifs \hspace{1cm} 54
   a. Owl Beakers \hspace{1cm} 54
   b. Crested Bird Motif Beaker \hspace{1cm} 63
   c. Intertwined Serpent Motif Beaker \hspace{1cm} 72
VII. Chapter 7 Strength and Spoons: An Iconographic Analysis of Fist Effigy Beaker Handles
   a. Geographic Locations 76
   b. Mussel Shell Spoons 84

VIII. Chapter 8 Balancing the Cosmos: Ethnohistoric Accounts of Black Drink 89
   a. Burial Data 91
   b. Purity 99
   c. Social Contexts 101

IX. Chapter 9 Mistaken Identity: Beakers and their Association with Black Drink 106
   a. Cahokia Residue Sampling 108
   b. Contaminates 111
   c. Cherry Valley Residue Sampling 116

X. Chapter 10 Conclusion 120
   a. Methodology for Iconography 120
   b. Signs of Sodalities 121
   c. Microcosms 123
   d. Black Drink 124
   e. Ethnohistoric Accounts 125
   f. “Vacant” Beaker Regions 125
   g. Future Research 128
   h. Concluding Thoughts 129
List of Abbreviations

AAS  Arkansas Archaeological Survey
CIV  Central Illinois Valley
CSAJ  Central States Archaeological Journal
CMV  Central Mississippi Valley
CV  Collinsville
DM  Dickson Mounds Museum
ESTL  East St. Louis
GC  Gilcrease Institute of American History and Art
GS  Gibson Site
IRV  Illinois River Valley
ISAS  Illinois State Archaeological Survey-Champaign Illinois
ISM  Illinois State Museum
MAS  Missouri Archaeological Survey
SIU  Southern Illinois University
U of M  University of Memphis
WIU  Western Illinois University
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exhibit of a woman holding a beaker</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Google Earth Image depicting the Cahokia and Chery Valley Beaker Regions</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Vandeventer site beaker displaying the double-legged Q design</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>Google Earth image of the geographical counties containing the double-</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>legged Q design</td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>First stylistic element of the double legged Q design “ladder”</td>
<td>30</td>
</tr>
<tr>
<td>5b</td>
<td>Second stylistic element, circle encompassing the slanted hatched lines</td>
<td>30</td>
</tr>
<tr>
<td>6a</td>
<td>Third stylistic element, the slanted hatched lines</td>
<td>30</td>
</tr>
<tr>
<td>6b</td>
<td>Fourth and Fifth stylistic elements</td>
<td>30</td>
</tr>
<tr>
<td>7a</td>
<td>Sixth and seventh stylistic element</td>
<td>31</td>
</tr>
<tr>
<td>7b</td>
<td>Eighth stylistic element</td>
<td>31</td>
</tr>
<tr>
<td>8a</td>
<td>Illustrating a quadripartite motif…from the Crable site</td>
<td>31</td>
</tr>
<tr>
<td>8b</td>
<td>Illustrating a quadripartite motif…from the Cahokia site</td>
<td>31</td>
</tr>
<tr>
<td>9a</td>
<td>Illustrating a quadripartite motif…from the Vandeventer site</td>
<td>32</td>
</tr>
<tr>
<td>9b</td>
<td>Illustrating a quadripartite motif…from the Cahokia site</td>
<td>32</td>
</tr>
<tr>
<td>10</td>
<td>Intertwined snakes displaying a similar design to the double-legged Q motif</td>
<td>33</td>
</tr>
<tr>
<td>11</td>
<td>A sun element from a crested bird Cox Mound style shell gorget</td>
<td>34</td>
</tr>
<tr>
<td>12</td>
<td>The different cosmological concepts of the double-legged Q design</td>
<td>37</td>
</tr>
<tr>
<td>13</td>
<td>Vandeventer site beaker displaying a geometric motif</td>
<td>42</td>
</tr>
<tr>
<td>14a</td>
<td>Concentric circle element</td>
<td>43</td>
</tr>
<tr>
<td>14b</td>
<td>Sinuous wavy lines element</td>
<td>43</td>
</tr>
<tr>
<td>14c</td>
<td>Nested half circles element</td>
<td>43</td>
</tr>
</tbody>
</table>
List of figures continued

Figure 15. Ester Berry site beaker illustrating a spiral pattern 50
Figure 16. Ester Berry site beaker showing zigzag lines 51
Figure 17. Ester Berry site beaker illustrating tabs with avian features 52
Figure 18. Google Earth image depicting the counties containing owl effigy beakers 56
Figure 19a,b. “Owl”/avian beaker Brown County, Illinois 57
Figure 20. Reclining owl beaker 58
Figure 21. Owl beaker from East Saint Louis 59
Figure 22. An owl perched in a tree 61
Figure 23. Crested bird beaker image (Bird number 1) 64
Figure 24. Crested bird beaker image (Bird number 2) 65
Figure 25. Crested bird beaker image (Bird number 3) 66
Figure 26. Woodpecker on a tree 68
Figure 27. Cox Mound style gorget 70
Figure 28. Cagle Lake intertwined serpent’s motif beaker 73
Figure 29. Google Earth image showing the counties where fist effigy beaker handles occur 78
Figure 30. Fist effigy beaker from the Horseshoe Lake site 80
Figure 31. Jar from Smith Mounds with hand like handles 81
Figure 32. Jar from Angel Mounds with hand like handles 82
Figure 33. Replica of a Cahokia-style beaker 108
Figure 34. Absorbed organic residue analysis results Crown et al. 2012 Table 2 109
Figure 35. Absorbed organic residue analysis results Washburn et al. 2014 Table 3 114
Chapter 1

Introduction

Purpose of Research

Beakers are unique ceramic vessels, made popular in archaeological literature by their association with the Mississippian ritual center, Cahokia, and have also gained notoriety based on evidence that some vessels may contain residue markers for caffeine and cacao, which are considered ritual beverages (Crown et. al. 2012; Washburn et al. 2014). Due to this association, the role of these vessels has been attributed to ritual paraphernalia used to consume the purifying tea, known as black drink. This connection has been taken as fact, and recently surfaced in archaeological literature associating Cahokia with the use of black drink. Ethnohistoric and ethnographic accounts are referenced to establish the use of black drink in historic indigenous groups and its association to inland Mississippians. However, ethnohistoric accounts do not support the association of black drink with beakers, leading to a reliance on the identification of black drink biomarkers in absorbed organic residue testing. Unfortunately, current sampling methods are not without obstacles, and can be unintentionally influenced by airborne contaminants. This leaves the inability to conclusively state that black drink and beakers are connected. Iconographic analyses presented in this thesis suggests that beakers may not be associated with black drink, but are a central component to understanding the Mississippian worldview. Figure 1 illustrates this importance in an exhibit at the Jones Archaeological Museum in the Moundville Archaeological Park, Moundville, Alabama, which depicts a woman holding a beaker and appearing to present it to an elite.
One beaker design examined, in this thesis, has been identified as representing elements focusing on the rays of the sun and the four sacred directions (Pauketat 1998). The iconographic motifs, such as the previously mentioned, and their regional variants can be utilized to
demonstrate the temporal and spatial span of ideas, as well as cross-culture interaction, to understand the varying regional ideologies.

The association between beakers and black drink, based on absorbed organic residue studies, causes archaeologist to limit their perusal of knowledge concerning these vessels. If the identification of beakers at Mississippian sites automatically associates that site with black drink rituals, then the other functions, or possibly a different function, of these vessels is not investigated. Beakers, during their lifespan, may have held varying contents, especially during differing spatial and temporal contexts. Without future research into vessel form and function, an incorrect conclusion may be drawn from current available data.

In this thesis I suggest, based on previous absorbed organic residue analysis studies, that there is not sufficient evidence to support an association between black drink and beakers. I further suggest that the iconography of these vessels demonstrates their importance to the Path of Souls and the strength needed to journey along this path.

Research Questions

This research focuses on iconographic guidelines, established by Vernon Knight (2013), to examine the individual stylistic elements and their overall motifs on Mississippian beakers. This analysis will allow for a better understanding of Mississippian ideologies and worldviews concerning the Above World, Middle World, and Underwater World along with the role these worlds play in maintaining the balance of Mississippian lives. Ethnohistoric and ethnographic accounts will also be evaluated in order to distinguish if any connection to beakers and black drink can be established, and if it is feasible that this nonnative plant could have been transplanted or traded into the inland areas of the Mississippians. Finally, the literature on
absorbed organic residue analysis relating to black drink biomarkers in not only beakers, but also other Mississippian ceramics, is critically analyzed to determine if the current identification of these markers is accurate or if the discovery of these biomarkers is due to outside influence that currently cannot be assessed.

**Hypotheses**

Numerous hypotheses are generated to understand the role beakers played in Mississippian world views. Each iconographic design possesses hypotheses related to individual stylistic elements, as well as inferred meanings of the overall motif. These hypotheses form an idea of meanings behind the differing beaker iconography. Archeological contexts of the beakers are utilized to form hypotheses based on their association with burials, domestic settings, or ritual structures. The context demonstrates their function in specific settings or the ability to transverse all of these settings. Burial interment age and sex, as well as artifacts associated with beaker burials, is used to form hypotheses about the age and sex of those who used these beakers and why they used them. Hypotheses are proposed about the spatial patterning of beakers and if religious sodalities can be identified based on this patterning. Hypotheses are also formed as to why beakers are located in certain regions, but not in others.

Three research questions are established for each of the six beaker motifs:

Research Question 1: Can the meaning of the beaker design be inferred?

Research Question 2: Can the role of this motif in Mississippian ideologies be discerned?

Research Question 3: Can the spatial analysis of this motif identify religious sodalities?
Ethnohistoric accounts will be examined to form a hypothesis about the relationship between beakers and black drink. Four research questions will be established regarding black drink ethnohistoric and ethnographic accounts.

Research Question 4: Do ethnohistoric accounts show a relationship between black drink and beakers?

Research Question 5: Is there enough ethnohistoric evidence to suggest inland Mississippians utilized black drink?

Research Question 6: Does ethnohistoric evidence suggest black drink was used in social and ritual contexts?

Research Question 7: Does ethnohistoric accounts demonstrate a particular age or sex required to participate in consuming black drink?

Positive biomarkers for black drink have been identified in absorbed organic residue sampling of beakers in the American Bottom and Central Illinois Valley (Crown et al. 2012; Washburn 2014). Three additional research questions are established regarding the accuracy of testing for black drink in Mississippian beakers.

Research Question 8: Is there sufficient evidence to suggest positive black drink biomarkers in beakers?

Research Question 9: Can airborne contamination be accounted for in positive black drink tests?

Research Question 10: Can testing methods, other than residue sampling, provide evidence for vessel contents?
Thesis Outline

Chapter 2 discusses the methods used to conduct the iconographic study of six beaker motifs; the double-legged Q design, geometric motifs, owls, crested birds, serpents, and fist effigy handles. Each motif will be examined based on their sample size in an assembled corpus, individual stylistic elements, association with natural prototypes, archaeological contexts, a configurational analysis of the elements, ethnohistoric and ethnographic accounts, and hypotheses regarding the inferred meanings of the motif and its importance to Mississippian world views.

Chapter 3 presents background information on beakers as well as a literature review. The “vacant” area of beaker sites is discussed as well as the Cahokia and Cherry Valley regional beaker areas. The identification of sporadic beaker sites in Indiana, Kentucky, and Tennessee are presented as well as the lack of Cahokia beaker styles in Arkansas.

The literature review covers previous archaeological literature on specific sites or counties containing beakers, literature containing archaeological context data, absorbed organic residue studies, ethnohistoric and ethnographic accounts, and inferred meanings into stylistic elements.

Chapter 4 focuses on an iconographic analysis of the double-legged Q design. The geographical locations of this motif are evaluated in order to determine if sodalities as well as local variants of designs are present. Previous literature discusses the context of this motif, as well as suggested interpretations and possible meanings. Individual stylistic elements are reviewed for comparison with other genres of artifacts. Ethnohistoric accounts are examined in
order to determine myths related to the various elements. Finally, a hypothesis suggesting inferred meanings and the role of the vessel as a map are presented.

Chapter 5 is also an iconographic analysis of a beaker motif. This chapter looks at geometric stylistic elements and their association with altered states of consciousness. This chapter focuses heavily on literature related to the human psyche and how this influences our interpretation of the world around us. Ethnohistoric accounts depict visual stimuli experienced by shaman during altered states of consciousness. Hypotheses are generated to suggest the meaning of geometric motifs as well as why these motifs would be portrayed on beakers and how they can help archaeologists to better understand entoptic trances.

Chapter 6 is an iconographic analysis of owl beakers as well as a crested bird and intertwined serpent beaker. In this chapter, the importance of creatures in Mississippian ideology are discussed. Ethnohistoric accounts are also studied to better understand the correlations between these creatures and Mississippian religion. Hypotheses are presented to argue the meaning behind the motifs and their association with the Path of Souls.

Chapter 7 is the final iconographic analysis, studying human fist effigy beaker handles. The geographic location of these effigies are presented in order to evaluate possible sodalities and their reach into the Central Mississippi Valley. Ethnohistoric accounts are reviewed to understand the importance of trophy taking in historic indigenous tribes. Burial data is utilized to investigate a possible relationship between beakers and mussel shell spoons. Finally, I pose a hypothesis focusing on the meaning of these effigies and their correlation to strength, trances, and death.
Chapter 8 looks at ethnohistoric and ethnographic accounts associated with black drink. This chapter examines these accounts in order to present hypotheses based on whether beakers were used as black drink containers, and if inland Mississippians had access to large quantities of the black drink plant, *Ilex vomitoria*. Other hypotheses are generated based on whether the use of black drink was confined to only one sex, or if black drink had a social and a ritual association. Burial data is relied on to investigate whether beakers were interred with specific ages and sexes, and if so how this relates to the ethnohistoric accounts.

Chapter 9 analyzes previous literature concerning absorbed organic residue sampling of Mississippian artifacts. Two studies associated with the identification of black drink biomarkers in beakers are examined to form a hypotheses regarding the accuracy of this correlation. Other studies are reviewed to better understand the role airborne contaminates may play in positive residue results. A study focusing on interior carbonized patterns of Powell and Ramey Incised jars is evaluated in order to determine its potential for identifying ancient contents in vessels based on their cooking methods. In this chapter, I also discuss my current studies regarding the absorbed organic residue analysis of beakers from the Cherry Valley site in eastern Arkansas.

Chapter 10, the conclusion, re-examines the identification of sodalities in the American Bottom, Central Illinois Valley, and Central Mississippi Valley based on beaker iconography. The role of beakers as microcosms are presented, along with the role ethnohistoric accounts play in identifying an association between black drink and beakers. Finally, a hypothesis is proposed on the importance of strength through nutrimental sustenance and the association this has with beakers and their iconography.
Chapter 2

Background & Literature Review

Beakers are identified from Terminal Woodland to Middle Mississippian (ca. A.D. 900-1400) sites. While these vessels are recovered at sites in Alabama, Mississippi, and Wisconsin, the area of focus for this study is the American Bottom, the Central Illinois Valley and the Central Mississippi Valley. Beakers, which are mostly associated with burials, have been located in the remnants of household and ceremonial structures, ritual areas such as Woodhenge at Cahokia, and in refuse pits (Pauketat 1998; Perino 1967). Archaeologists in the American Bottom place these vessels in the category of fineware due to their association with a fine paste, thin walls, and surface treatments in the form of slipping and burnishing (Pauketat 1998; Wilson 1999). However, this category is exclusive and does not comprise all Mississippian beakers. Wilson (1999) defines fineware vessels as the following types: “Carter Engraved, French Fork Incised, Crockett Curvilinear Incised, and Holly Fine Engraved.” (Wilson 1999: 98). His grouping of fineware vessels excludes those with, “Ramey Incised, Mound Place Incised, Walls Engraved, Kersey Incised, and Yankeetown Incised” (Wilson 1999:99). Since Mound Place Incised is the most popular incised design on beakers, I place Mound Placed Incised beakers from the American Bottom and Central Illinois Valley as fineware. Another conundrum is the characterization of beakers as cylindrical bowls, straight sided bowls, or cylindrical jars. Some of the artifacts described using these terms are in fact beakers, while others are not. The strict
definition and application of what a beaker constitutes will help to alleviate some of this discrepancy. Finally, the term beaker-bowl has been used to describe straight walled bowls and can be difficult to differentiate from beakers as well as bowls. Wilson (1999) lumps beakers and straight walled bowls into the same heading title, explaining that it can be difficult to distinguish between the two, due to resemblances in upper rim shapes. Wilson suggests these straight walled bowls may evolve into beakers. Perino (1967:45), termed this vessel class a beaker-bowl, defining them as exhibiting concave or recurving sides excluding handles. Perino suggests these vessels could be morphing from one artifact type into another. Beaker bowls have been identified at Mississippian sites such as Moundville, but termed as cylindrical bowls or constricted bowls, making them difficult to identify in databases.

**Beaker Styles and Geographic Locations**

Three styles of Mississippian beakers are identified in the American Bottom and Central Illinois Valley: Tippets, Spoon River, and “barrel shape” (Conrad 1972; Griffin 1949; and Harn 1971). I suggest a fourth category of beaker styles should be added to this list focusing on the Cherry Valley beaker style, which are void of decorations except occasional Mound Place or Ranch Incising; they sometimes possess small animal head adorno rims as effigies. The Cherry Valley beakers have, “round or flat bottoms and convex, recurved, or concave sides.” (Perino 1967:59). Cherry Valley beaker types, generally do not fit into the fineware category as well as the other beaker styles. The walls are generally thicker than other styles of beakers and the shell tempering is not as fine as the vessels that Wilson (1999) describes as fineware. These vessels are easily distinguishable from other styles based on a black encrustation or discoloration found on the vessels, possibly from manganese dioxide within the soil (Perino 1967:9). The Spoon River style beaker is, “a spool shaped form with constricted sides” (Harn 1971:21). This regional
style is located along the Spoon River in west central Illinois. Strong stylistic similarities exist between the Spoon River and Cahokia-style “Tippets” beaker, which typically has straight sides (Griffin 1949:57). A final beaker style is described by Larry Conrad (1972:111) as, “characterized by a general barrel-shape without angles.”

While beakers, are normally associated with Cahokia and Illinois, they were not associated with the Central Mississippi Valley until the discovery of several varieties of beakers during excavations by Perino (1967) at the Cherry Valley site. Beakers were identified, by the Smithsonian in the 1880s from a site near Bay, Arkansas, but in smaller amounts than the Cherry Valley site (Morse and Morse 1990). Morse and Morse (1990) lists twelve known beaker sites in northeastern Arkansas associated with the Cherry Valley Phase beaker horizon: Ballard (3PO115), Banks Mound 3 (3CT16), Bay Mounds (3CG29), Cherry Valley (3CS40), Floodway (3PO46), Hazel (3PO6), McClellan (3PO32), a site listed as Middle (3CG102), Parkin (3CS29), Rose Mound (3CS27), Turnbow (3CS61), and Vernon Paul (3CS25). Through my current thesis research, I am able to add seven more sites to this list: Coad, Gipson (3LW509), Knappenberger (3MS53), Molder, Nickol, the Old Fort Site (3CS39), and Smith Mounds.

The majority of these sites contain more than one beaker, with Cherry Valley encompassing 42 beakers based on the excavations of Mound 1 (n=9), Mound 2 (n=16), and Mound 3(n=17) (Perino 1967: 14,23,24). The large amount of beakers from the Cherry Valley site led Morse to coin the term Beaker Horizon, relating to markers from the Cherry Valley Phase.

With approximately nineteen beaker sites identified in eastern Arkansas, the region is as comparative as a beaker center as the Cahokia region of the American Bottom and Central Illinois Valley, which contains a little over thirty known beaker sites. In the Mississippi Valley
these two areas dominate as primary beaker regions. The amount of beaker sites between these two areas is sparse, with little known information as to why. Beaker sites are identified in one county in southwest Kentucky, two counties in southwest Indiana, five in southeast Missouri, and one in west Tennessee. These small occurrences of beaker sites show more stylistic characteristics with the Cahokian-style beakers than the Cherry Valley style, suggesting the Cherry Valley influence was not as strong as that from the Cahokia region. Figure 2 below shows the concentration of Cherry Valley and Cahokia style beakers. McNutt (1996: 230-231) suggests that Cahokia colonization seems to be blocked in the south, “presumably by established Mississippian groups in western Kentucky, southeast Missouri and possibly west-central Tennessee (Obion?).” The beaker sample size in Kentucky is too small to determine any influence by Cahokian ideologies or sodalities. However, the Obion site and southeast Missouri both show contact with the Cahokia region through the identification of fist effigy beakers, which do not occur in Arkansas, and currently are not known in Kentucky. Eastern Missouri also shows Cahokian influence through the identification of the double-legged Q design (discussed in Chapter 4), at the Long Mounds site (23JE16) in Jefferson county Missouri.
Kentucky. Two beakers are identified in Kentucky, with only one designated to a site, the Campbell site. Both beakers originate from Fulton County and are plain, showing no evidence of incising. It is unknown if these vessels only occur at the Campbell site, or if there are other beaker sites in Fulton County.
Indiana. Two beaker sites are located in Indiana: the Angel site in Vanderburgh County and the Bone Bank site in Posey County. The Angel site collection contains four sherds and eighteen handles. Sherri Hilgeman (2000), illustrates two of these handles as arm and fist effigies. One possible beaker sherd also depicts Mound Place Incised around the rim. The Bone Bank site contains one example of a fist effigy and one plain beaker.

Missouri. Missouri contains five beaker sites, one from the Hanna site (23NM68) in New Madrid County, one from the Crosno site (23MI1) and also Towosahgy (23MI2) in Mississippi County, the Common Field site (23STG100) in St. Genevieve County, an intertwined serpent beaker from Cagle Lake (23PM13), (also known as Kersey, Kersey II, or Permission Grove), in Pemiscot County and two beakers from the Long Mounds site (23JE15 and 23JE16) in Jefferson County, one of which is the double-legged Q design from the Cahokia area. Towosahgy (23MI2) is the only known site containing a fist effigy. With Missouri containing the largest amount of beaker sites outside of Arkansas and Illinois, it seems to be a good candidate for more unknown beaker sites to surface in the future, possibly making this area another beaker regional center, which may contain predominately Cahokia-style beakers due to the current beaker styles representing that influence.

Tennessee. The only recorded beaker site in western Tennessee is the Obion site, also referred to as the Work Farm site, in Henry County. Eight beakers represented by handles and rim sherds are identified at the site with one handle being a human fist effigy. No examples of Mound Place Incised occur on the beakers at the Obion site. However, a number of handles, “similar to those on the Cherry Valley beakers,” (Garland 1992:110), are identified in the collection. The possibility of three other beaker sites exists in western Tennessee, one being the Gray Farm Site (40SW1) in Stewart County (personal communication, Kevin Smith, 2019),
Mound Bottom in Cheatham County (personal communication, Bill Lawrence and Kevin Smith, 2019), and the Snake Creek (40HR203) site in Hardin County (personal communication, David H. Dye, 2018). The late Charles McNutt (1996:236) mentions that there is, “perhaps a beaker”, in the ceramic listing for the Reelfoot Basin, suggesting further archeological research in this area may identify additional beaker sites.

Literature Review

Beakers are identified at various Mississippian sites throughout the American Bottom, and Central Illinois Valley, with mentions of them in journals such as Central States Archaeological Journals and Illinois Archaeology. Site specific reports such as Pauketat (1998) provides a list of beakers found at Cahokia’s Tract 15a as well as temper, orifice diameters, weight, feature numbers, and decoration. Perino (1967) details excavations at the Cherry Valley site in 1958, along with reports of artifacts previously collected from the site. Perino associates the excavated artifacts with a ceremonial center and suggests more beaker forms occur here than Cahokia. Esarey et al. (1981) provides detailed listings of beaker archaeological contexts from the Orendorf site. The beakers mentioned in this report demonstrate beakers occurring in structures, which may be associated with rituals based on their location near the plaza. The artifacts found in context with the beakers are provided, as well as a summary of the activities that may have occurred in the structures. Publications such as Garland (1992) and Hilgeman (2000) provide evidence of beakers in their overviews of the Obion site (Garland 1992) and the Angel site (Hilgeman 2000). Burial data was accessed through Harn (1980) Susan Spencer (2014) and Michael Strezewski (2003), this data provided detailed accounts of sex and age of individuals interred with beakers as well as associated artifacts. The data was invaluable in illustrating patterning associated with artifacts interred with beakers, along with ages and sexes.
associated with beaker use. Morse and Morse (1990), provided a list of known beaker sites in eastern Arkansas. Accompanying their report with my own research, through museum and private collections, increased the number of known beaker sites in that region. Morse and Morse also established a beaker horizon, which played a role in the definition of beaker regions established for the current study.

Dave Aftandilian (2007); David Dye (2004, 2018); George Lankford (2004); Pauketat (2013); Kent Reilly (2004); and Megan Bryden-Wasoba (2016); influenced the interpretations of beaker motifs and the meanings of these motifs to Mississippian cosmology. Philip Phillips and James Brown (1978) facilitated many identifications of individual stylistic elements and how these elements maintained meaning independently and as a motif telling a story. Madelaine Azar (2018); Christina Friberg (2017), and Jessica Miller’s (2015) studies provided valuable information on Ramey Incised jars, the association they may have with black drink consumption, and their identification as microcosms. Their research influenced the interpretation of the double-legged Q beaker motif as a microcosm in the current study.

Ethnohistoric and ethnographic accounts focusing on the use of black drink, by indigenous historic groups, are evaluated to determine if an association can be made between Mississippian beakers from the American Bottom, Central Illinois Valley, and the Central Mississippi Valley with black drink. Charles Fairbanks (1979), details historic accounts of the importance of black drink to the Creek/Muskogee, in relation to ritual and social contexts. William Merrill (1979), is similar in scope to Fairbanks, investigating the use of black drink among indigenous historic tribes in North America. Jerald Milanich (1979), demonstrates the use of shell cups in the consumption of black drink and references the discovery of shell cups in Mississippian archaeological context.
Previous absorbed organic residue analysis studies are examined to understand the relationship between beakers and black drink. Crown et al. (2012) examined eight beaker samples from four sites in the Cahokia region. Four samples showed positive results for biomarkers of either caffeine or theobromine, which are two of the biomarkers for black drink. Washburn et al. (2014) looked at a larger beaker sample along with other artifacts such as bottles, jars, and bowls. The Washburn and colleagues samples were obtained from the American Bottom and the Central Illinois Valley. Washburn also identifies black drink biomarkers, but stresses that positive results may be from airborne contaminates. Adam King et al. (2017a, 2018) also recognized that airborne contaminates can cause positive results. By sampling various areas in museums both King et al. (2017a, 2018) and Washburn et al. (2014) identified the presence of caffeine through airborne contaminates, suggesting they can be present in vessels stored in these facilities.
Chapter 3

Iconographic Methodology

In this thesis, I utilize iconographic method guidelines presented by Knight (2013). This methodology is employed in order to focus on an iconographic study of motifs located on the beakers. The analysis evaluates stylistic elements, archaeological context, ethnohistoric and ethnographic accounts, and configurational analyses to form hypotheses of inferred meanings. Throughout the analysis, I identify clusters of similar imagery to distinguish shared ideologies associated with religious sodalities. I follow the methods utilized by Dye (2018) in his study of water spirits in the Central Mississippi Valley and King et al. (2017b) in evaluating rattlesnake gorgets in eastern Tennessee to examine the socio-political representations.

The first guideline Knight proposes, is to obtain the largest corpus available on a particular genre of artifacts. Knight underscores the importance of maintaining, “trustworthy results” meaning, that some photographs and drawings of imagery could be unintentionally misleading. A two dimensional representation, especially of only one perspective, could leave out important details on other areas of the vessel. It is important to view, document, and photograph artifacts in your corpus, as much as possible, even though it can be daunting and time consuming.
The collections of photographs amassed for this study, as well as the time spent viewing the beakers, and documenting them, has been invaluable for assessing an iconography of Mississippian beakers. The assemblage was established through the contribution of private collectors, as well as several museum collections, educational institutions, and archaeological literature. While beakers have been examined and interpreted for specific archaeological sites, the vessels have not been examined on a large spatial and temporal scale. The large assemblage allows for an examination of vessel function within Mississippian societies and the distribution of collective ideologies. In order to conduct the analyses, over two hundred and fifty whole and partial beakers, as well as handles and rim sherds were collected for examination. A long term goal is that the assemblage of these vessels from numerous states and private collections will facilitate future studies of the socio-political importance of beakers.

Knight’s second guideline focuses on employing a stylistic analysis, in which the formal elements of images are examined to establish inferences. Knight (2013) notes that the study of these elements may assist iconographers in reconstructing cultural models. His form of stylistic analysis focuses on patterning of specific imagery on beakers, as well as the representation of these specific elements on other media, suggesting shared cosmological models.

The third guideline concerns the archaeological field data and the contexts in which beakers have been discovered. Knowing if a beaker was located in a ceremonial structure, a residential structure, a refuse pit, or a grave provides a better contextual understanding for assessing the function of not only the vessel, but also the beaker’s motifs and themes. Natural associations with local fauna and animal folklore are also explored to identify possible prototypes behind representational motifs such as serpents, owls, and woodpeckers. Archaeological contexts are utilized to examine the association of beakers with other interred
artifacts to establish patterning. The data will also be examined to look at the age and sex of individuals interred with beakers. Geographical locations of beaker motifs also play a role in establishing iconographic patterning to identify religious sodalities. These datasets as a whole, contribute to identifying the role the vessels played in rituals.

The fourth guideline focuses on the employment of configurational analysis to interpret the subject matter. Knight states that in order to distinguish configurational analysis it is best to start with an object that represents the most complex subject matter. By identifying elements of the most compounded imagery the connotations of the fundamental units may be established. Configurational analysis is employed in the iconographic study of beakers to establish elements and overall cosmological themes.

The fifth guideline, concerns ethnohistoric and ethnographic analogies to infer meaning from beaker vessels. Ethnohistoric accounts are associated with configurational analyses in order for the iconographer to derive emic perspectives that otherwise would be unavailable. While perspectives of particular motifs and themes may become dissimilar throughout time, some forms of semblance may remain through cultural transmission. Historical homology is employed to ensure that the ethnographic material being referenced relates to Mississippian cultural traditions in an acceptable chronological distance. Knight argues that the use of ethnographic sources is, “invested already in every part of our vocabulary” (Knight 2013:132). The way we view the past is presented to us through the ethnographic concepts we apply to humans and their behavior.

Knight (2013) references two approaches for the use of ethnographic accounts; general comparative analogy and historical homology.
General comparative analogy utilizes a cross-cultural approach to examine a broad range of ethnographic accounts from unrelated cultures. An example of this would be to associate Mississippian owl effigies with witches based on accounts from various regions and ethnic groups in the Americas as well as the eastern hemisphere. The current research study does not apply general comparative analogy, and focuses on historical homology instead.

Historical homology applies to ethnographic accounts from similar cultures. Historical continuity of the same culture lines is used to infer similarities between a culture’s behaviors and beliefs. According to Knight (2013:136) these societies, “need not be in a direct ancestor-descendant relationship of peoples, but more generally they must be linked by a line of cultural transmission of some kind.” Knight (2013) presents four dimensions in which to evaluate the relevance of ethnographic literature with the subject under study: proximity in time, breadth of the comparative base, goodness of fit, and generative quality. Ethnographic accounts are employed in the iconographic analysis of six beaker motifs in the study; however, the main focus of ethnographic literature occurs in the latter portion of the thesis. Ethnographic accounts of black drink usage in indigenous historic groups is used to evaluate whether a relationship between black drink and beakers could have existed some centuries earlier at Mississippian polities in the American Bottom, Central Illinois Valley, and the Central Mississippi Valley. The applied association will be discussed using the previously mentioned four dimensions.

The proximity in time between ethnographic accounts in use for the research (the source) and the Mississippians in question (the subject), spans between circa two hundred and three hundred years. Knight (2013) argues that if the gap in the proximity in time is small, such as relating a prehistoric to a historic time period in a region, confidence of historical continuity is strong. However, if the proximity in time has a gap, such as the centuries in between the source
and subject of the iconographic focus, the risk of, “changes in the social institutions that generate representational imagery” becomes greater (Knight 2013:136). This could suggest that the gap between the source and subject for black drink association could be too great and the institutions associated with historical black drink consumption may be not be linked to Pre-Columbian use. However, I would argue that even though a gap in the proximity in time between the two occur, a cultural continuity may still exist since acculturation from outside influences at this time was near its origin.

The breadth of the comparative base suggests that the broader the area of shared cultural traits the more likely they were derived from a shared antiquity (Knight 2013). I disagree with this claim, again based on ethnographic accounts of black drink. The source in use for the comparative analysis occurs in a particular region of the Southeast where the plant (*Ilex vomitoria*) used in the preparation of black drink, is native. Current archaeological data does not suggest that this plant was available to Mississippians residing inland, such as the areas involved in this research. Even though there is a broad area of shared ideologies concerning the use of black drink in the region, detailed in the ethnohistoric accounts (Fairbanks 1979; Merrill 1979), this may not show antiquity due to the limited availability of the plant’s natural habitat. Therefore, breadth in certain geographical areas may prove antiquity, if characteristics such as regional area, available food sources, climate, or landscape are similar, but cannot always be inferred on past locales.

In goodness of fit, Knight (2013) discusses similarities between source and subject and how shared similarities along with the establishment of interrelationships, can provide evidence of historical continuity. One of the uses of ethnographic accounts in this research is to identify the use of black drink and beakers. However, beakers are not mentioned in ethnohistoric
accounts as being associated with black drink consumption. Until black drink is connected to ceramic vessels in ethnographic accounts, or a shift in ideologies is established, there will not be a “goodness of fit”, between the source and subject.

Finally, Knight (2013) discusses the importance of a generative quality in sources. A generative quality is established when cultural connections occur in unexpected means. Knight argues that these cultural connections would not occur if there were flawed comparisons.

The method of utilizing a source to infer shared ideologies onto a subject is presented in the iconographic analyses as well as the ethnohistoric accounts chapter. During these inferences, the previously mentioned methods for applying ethnographic accounts to Mississippian culture behavior are used to ensure that the application of these resources follows the guidelines associated with the iconographic methodology.

The final guideline utilized in the research combines the use of identifying stylistic elements, archaeological field data, configurational analysis, and ethnographic data to form hypotheses that describe the subject matter. Multiple hypotheses are presented to better understand the significance of the iconographic motifs found on beakers.
Chapter 4

Paths of the Past: An Iconographic Analysis of the Double-Legged Q Beaker Motif

Double-Legged Q Motif

Archaeologists may infer meaning through the implementation of a methodological approach outlined by Knight (2013), which focuses on a large corpus, stylistic elements, ethnohistoric and ethnographic accounts, archaeological context, and configurational analysis. Knight argues that through, “methodological discipline and robust inference” archaeologists may assess connotations of shared symbolic cosmologies and ideologies (Knight 2013:18). He contends that without following these methodological procedures and inferring strongly proposed explanations, iconographers will not be taken seriously. In this chapter (and the following three chapters) I employ Knight’s methodological guidelines for iconographic analysis to assess and infer explanations of Cahokia-style beaker elements, motifs, and themes. The iconographic design under examination in this chapter is the double-legged Q design found in the American Bottom and the Central Illinois River Valley.

The first methodological guideline expresses the importance of assembling an appropriate corpus, within a particular genre, in order to have a sufficiently large sample size to evaluate and establish patterning. The double-legged Q design generally occurs on beakers in the American Bottom region in Illinois and the Central Illinois Valley. This beaker design has yet to be identified in other beaker regions such as eastern Arkansas, western Kentucky, or southwestern Indiana. There is evidence of a variety of the double-legged Q designs in the Ozark Highland
region of Missouri from the Long Mounds site (23JE16) (Chapman 1980:229). The concentration of this design reflects its importance to a particular region and either the rejection of this design from other regions, or their inability to possess access to this design.

Figure 3. Beaker from the Vandeventer Site (11BR9) in Illinois depicting the double-legged Q design. (Western Illinois Archaeological Research Center. Courtesy of David H. Dye, photographer)
Double-legged Q Design

The first beaker motif reviewed is what Pauketat describes as, “a quarter-circle or sun circle motif” (Pauketat 1998:217), and what I am calling a double-legged Q design, based on its similarities to the modern English alphabet Q. As previously mentioned, this design occurs within the state of Illinois, with the largest percentage occurring in the American Bottom at Cahokia. The most famous beaker, the Woodhenge Beaker, displaying this design originates from Cahokia, and was excavated from a house structure built over a previous woodhenge. The beaker is associated directly with the woodhenge locale, referenced as the Post-Circle Monument (Hall and Wintry 1980). Pauketat (1998) places the beaker in the Late Moorehead phase (A.D. 1250-1300).

In evaluating over two hundred and fifty whole and partial beakers, along with confirmed beaker sherds, my corpus identifies this design as being restricted to the American Bottom (Cahokia) and the Central Illinois Valley: Cahokia (11MS2), Crable (11F249), Ester Berry (11F13), Horseshoe Lake (no known site number), Lockard (no known site number), Olin (11MS133), Orendorf (11F1284), and Vandeventer (11BR9). The one possible exception is a beaker from the Long Mounds site (23JE16) in the Ozark Highland region of Missouri. The double-legged Q designed beakers from these sites come from mixed archaeological contexts with most of the Crable and Vandeventer beakers originating from burials and the ones from Orendorf as well as the woodhenge beaker associated with structures. Variants of the double-legged Q design are also noted from the Berry and Crable sites.
Table 1. Locations of the double-legged Q beaker motifs.

<table>
<thead>
<tr>
<th>County and State</th>
<th>Site Name</th>
<th>Context Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jefferson Co., Mo</td>
<td>Long Mounds</td>
<td>Only context is that, “No burials were found in the mounds.” Suggesting this beaker was not with an interment.</td>
</tr>
<tr>
<td></td>
<td>(23JE16)</td>
<td></td>
</tr>
<tr>
<td>Fulton Co., Il</td>
<td>Crable</td>
<td>Most of the beakers from Crable were found in burials. There is no burial data associated with the double-legged Q design beakers from Crable, to my current knowledge.</td>
</tr>
<tr>
<td></td>
<td>(11F229)</td>
<td></td>
</tr>
<tr>
<td>Brown Co., Il</td>
<td>Vandeventer</td>
<td>Most of the beakers from Vandeventer were found in burials. There is no burial data associated with the double-legged Q design from Vandeventer, to my current knowledge.</td>
</tr>
<tr>
<td></td>
<td>(11BR9)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(11F1284)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(11F1284)</td>
<td></td>
</tr>
<tr>
<td>Madison Co., Il</td>
<td>Cahokia</td>
<td>The woodhenge beaker was recovered from a structure.</td>
</tr>
<tr>
<td></td>
<td>(11MS2)</td>
<td></td>
</tr>
</tbody>
</table>
I divide the double-legged Q design into eight stylistic elements, which vary slightly from beaker to beaker, but overall portray the same motif. Starting from the outside edges of the design, a band of horizontal lines may be identified as flanking the central motif. These horizontal lines, which I refer to as “ladders”, occur near the vessel’s handle and lug area. Most
vessels contain four ladders, two flanking one central motif on one side of the beaker and then
two flanking an identical central motif on the opposing side. The legs of the Q, generally extend
through the motif’s flanking ladders and meet up with the ladders on the other side of the vessel.
The beginnings of these legs occur within an enclosed circle of slanted hatched lines, which
surround the central part of the Q. These slanted lines are enclosed in a circle, possibly depicting
the cosmic edge of the world. Within the body of the Q are a single or double division, which
creates barriers in an otherwise fluid design. Inside the body of the Q, a circle encloses a cross,
creating a quadripartite design.

Finally, in this particular theme, the cross is dividing nested squares into four
sections. The elements that vary with this theme are the direction and curvature of the lines in the
quadripartite design, as well as the amount of divisions occurring within the body of the Q.
Figure 5a. Left, first stylistic element of double legged Q design, “ladder”. Figure 5b. Right, second stylistic element, circle encompassing the slanted hatched lines. (Drawing by Melinda A. Martin)

Figure 6a. Left, third stylistic element the slanted hatched lines. Figure 6b. Right, fourth and fifth stylistic element, the divisions or obstacles, and the pathway (double-legged Q). (Drawing by Melinda A. Martin)
Figure 7a. Left, sixth and seventh stylistic element the circle and the cross. Figure 7b. Right, eighth stylistic element nested squares to form a quadripartite design. (Drawing by Melinda A. Martin)

Figure 8a. Left, illustrating a quadripartite motif on the double-legged Q design from a Crable Site beaker. Figure 8b. Right, illustrating a quadripartite motif on the double-legged Q design from a Cahokia beaker. (Drawing by Melinda A. Martin)
The repetition of the central circle, depicted in quadripartite form, draws attention to the importance of the four divided areas and their value to the overall design “narrative.” The majority of the double-legged Q designs contains a cross, which is surrounded by a circle, the “nucleus” of the design. The single line, cross in circle motif, has been identified on other media such as Cox shell gorgets, pottery vessels displaying various motifs, and cave art, and is not specified to the double-legged Q motif. The use of nested diamonds, half circles, and squares are also not unique to this particular design. Their use seems to be an expression of the quadripartite concept. In contrast, the body and legs of the Q, along with its divisions, do appear to be unique to this design. Similar shapes occur with intertwined snakes: however, crosshatching frequently occurs within the vacant area of those examples and not on the beakers. The uniqueness of the double-legged Q motif comes from the vacant area along with the divisions, which illustrate a fluid motion until interrupted by a dividing line or division.
The next element, termed here “slanted hatched” lines, are re-occurring elements on Mississippian artifacts, especially shell gorgets and shell cups. These lines draw the eye towards the center of the design and thus give the design a circular or rotating structure.

The final element is the bands of horizontal lines, or ladders. These are similar to an axis mundi, which are usually single poles with “spiral stripes and dotted circles” (Lankford 2004:210). These ladders could be variants of the classical axis mundi. Lankford (2004:215) relates the axis to, “an elevator shaft” that can be used to, “offer access to each of the levels of the cosmos.”

Ethnohistoric accounts state that the cross in circle motif symbolizes the four logs in the sacred fire (Fairbanks 1979). The quadripartite sections may also represent the four cardinal

Figure 10. Intertwined Snakes displaying a similar design to the double-legged Q. (Phillips and Brown 1978, plate 26. Drawing by Melinda A. Martin)
directions. Pauketat (1998) describes the circle and cross design on the woodhenge beaker as evoking the Cahokian’s perspective of the world and its associated four directions.

The Q design also may be interpreted as a pathway. Mississippians paid close attention to the solstices and equinoxes as well as the Milky Way, which Lankford (2004) associates with the Path of Souls. Pauketat (1998) suggests the hatched lines on the woodhenge design are sun rays. However, the element under consideration does not show signs of being rays, but rather they are symmetrical slanted hatched lines. Figure 11 illustrates a sun motif from the center of a crested bird shell gorget referenced in Lankford (2004: 208).

![Figure 11. A sun element from a crested bird Cox Mound style shell gorget. (Lankford 2004:209. Redrawn by Melinda A. Martin)](image)

The motifs on these vessels illustrate individual elements representing the Above World, Middle World, and the Beneath World and combined they form a microcosm, or “images of total
cosmic structure made very small” (Lankford 2004: 208). The imagery represented by this motif also contains an element that appears to represent the four logs of the sacred fire in the form of a cross, normally surrounded by a quadripartite design (i.e., the four cardinal directions), possibly portraying the four winds. The specific placement of the cosmic structural principles on the vessel work independently and in collaboration in order to produce meaning for the artisans and intended audience. The meaning that the motif represented to early Mississippians may elude us, but clues can be assembled by addressing the individual symbols and their intentional placement on a vessel that is presumed to bring about purification and power from within the user.

The Q design seems to depict a path or voided area, instead of representing a familiar aspect of the cosmos. Wasoba-Bryden (2016:191) in describing the Woodhenge beaker, suggests the “tail” or leg of the Q design could be, “the path of the sun at winter solstice sunrise.” While, the beaker was located in a house postdating the woodhenge, the occupants would have been familiar with the prior history upon which the house was located, along with its ritual importance. In this sense, the beaker may have been an heirloomed object employed during the purification rituals associated with the active use of the woodhenge.

Path of Souls

Lankford (2004) also discusses tests required of a soul in order for the soul to reach its supposed destination or to be reincarnated. This test may be illustrated as a fork along the Path of Souls. He states, the “Milky Way splits and one path leads to an open gap before the main path can be rejoined” and that the other path continues on (Lankford 2004:243). Figure 12 depicts a drawing of the double-legged Q design on a beaker from the Lockard site, with interpretations of elements included. The circular voided area contains what seems like a path entering and encompassing the nested boxes in a quadripartite design. I suggest the first leg of the Q is the
path leading from the Middle World of humans onto the Path of Souls. However, the Path of Souls contains two paths, one path leading back into the Middle World, while a second path leads to the other side of the vessel and to an unseen destination. The circle of the Path of Souls loops around until it ends upon contact with itself. This division between the path one is on, and the re-entrance to that path one came from, could represent a test as outlined by Lankford. If the test is passed, you have the option of reincarnation and returning to the Middle World, or the choice to follow the path again to the second leg of the Q and your destination.

The motif divisions also may represent the shaman in a death-like trance, seeking re-admittance into their body in the Middle World or admittance into the realm of the ancestors. Vanpool (2003), notes that shamans symbolically die in order to travel to the other worlds. After this “death”, they “then defy death, successfully resurrecting themselves when they return” Vanpool (2003:699). According to Lankford (2011:212), there is a mythical narrative in the Eastern Woodlands and the Plains region which, “tells of men who visit the realm of the dead and return with the knowledge.” The men walk west and encounter an obstacle in the form of a river or chasm. The myth goes on to state that the men encounter, “one or more figures who judge the quality of the soul and determine which fork of the path should be taken” (Lankford 2011:212). The western path could be illustrated in the Q design with the design entering from east to west and moving in a counter clockwise manner. Another element on the vessels, important to the overall cosmological theme is the “ladders”. I suggest these “ladders” represent the axis mundi connecting the three worlds and representing the necessity of this connection in order for a soul to have passage along the Path of Souls and to be able to return from the Above or Under Water Worlds after the trance journey or reincarnation (Lankford 2011: 212). The Pomo, of California, believed the Milky Way was, “the home of the spirit” (Varner 2010: 63)
and to get there, “they will ascend by a ladder”. “The souls of the wicked will fall off the ladder in the ascent and descend into negative and nondescript limbo” (Powers 1976:161).

Figure 12. The different cosmological concepts of the double-legged Q design. (Original drawing from the collection of the Illinois State Museum-Dickson Mounds. Reinterpretation by Melinda A. Martin. Redrawn by Melinda A. Martin)

Another hypothesis surrounding this design can be found in Dye (2018), in which he discusses how these iconographic designs serve a purpose besides ornately enhancing the vessel. Dye argues that these themes are used as active instruments to, “attract, conjure, or snare life or spiritual forces” (Dye 2018:8). He uses the term, “capturing cosmic vital forces” to illustrate the power these vessels could have yielded in the hands of those possessing religious knowledge.
While I agree that the images on these vessels served an active function and could obtain power though the imagery depicted on them, I would argue that the double-legged Q design acted more as a map for the deceased on their journey to the afterlife, a shaman seeking a route to the afterlife and a way back once their task had been completed, or possibly a way to record the path of the sun during winter solstice (Lankford 2004; Wasoba-Bryden 2016).

_Sacred Fire Spiral_

One final hypothesis to evaluate focuses on lightning whelks, or _Busycon sinistrum_. Whelks have been identified, in ethnohistoric accounts, as the vessel utilized in the consumption of black drink (Fairbanks 1979; Merrill 1979; Milanich 1979). One interesting characteristic of lightning whelks is the spiral, which occurs on the apex of the shell. This spiral was intentionally recreated in the sacred fire used in ceremonies. According to Kozuch (2013:39) “The fire was built purposefully in a linear spiral, which was lit from the outside to travel clockwise towards the center.” An account, from William Bartram, details the Creek spiral fires and their progression.

“Next he orders bundles of dry canes to be brought in, these are previously split and broken in pieces to about the length of two feet, and then placed obliquely crossways upon one another on the floor, forming a spiral circle round about the great centre pillar, rising to a foot or eighteen inches in height from the ground; and this circle spreading as it proceeds, round and round, often repeated from right to left, every revolution increases (sic) its diameter, and at lengths extends to the distance of ten or twelve feet from the centre, more or less, according to the length of time the assembly or meeting is to continue. By the time these preparations are accomplished, it is night, and the assembly have taken their seats in order. The exterior extremity or outer end of the spiral circle
take fire and immediately rises into a bright flame, which gradually and slowly creeps around the centre pillar, with the course of the sun, feeding the dry canes, and affords a cheerful, gently and sufficient light until the circle is consumed and the council breaks up.” (Bartram 1928:357-358; Kozuch 2013:39-40).

The double-legged Q design could be an illustration of this sacred fire, suggesting that the vessel on which they are portrayed were utilized in ceremonies associated with black drink.

The double-legged Q design occurring in concentrated regions within the Illinois Valley and the American Bottom suggest these vessels were involved in rituals supported by those locales, but rejected or unattainable by other Mississippian polities. If black drink is associated with these vessels, some variant was occurring during the ceremony that is not seen on other beakers. While one may be eager to associate the woodhenge beaker with a calendar focusing on the cosmos, this same connection is not available for the other sites containing double-legged Q design beakers since a woodhenge has not been identified. Also, while the Cahokian woodhenge beaker was located in association with a woodhenge, the Mitchell site (11MS30), which also contained a woodhenge, has not produced beakers with this same design. The absence of this design could result from a short window in the production and usage of this vessel, or its relationship to a religious sodality. The ceremony associated with the vessel could have been replaced in the area of origin, causing its distribution or reproduction to quickly cease. Further archeological research could identify more sites containing these designs. I suggest this particular design is associated with the Milky Way, or the Path of Souls and is a map showing how to navigate the journey as well as how to overcome the tests or obstacles to reach the final destination.
Chapter 5

Flights of the Soul: An Iconographic Analysis of Geometric Beaker Motifs

Geometric motifs are one of the most popular designs in Mississippian iconography, often found on numerous media: ceramics, copper, rock art, shell gorgets, and textiles. Although the most frequently represented, they can be difficult to assign meaning, due to their lack of natural world referents. However, studies have focused on the neurobiology of hallucinations and transcultural influences (Boksa 2009), suggesting geometric motifs emerge from a natural prototype in the human psyche. Inferring meaning to geometric designs by attempting to understand an individual’s previous experiences and consciousness through one’s own experiences can lead to misinterpretations.

Identifying the assemblage of beakers portraying geometric designs faces challenges when determining what represents a geometric shape, without a known prototype, or what is considered a discernable shape. The method I chose to utilize in my categorization of geometric motifs focuses on three qualities: there is no obvious natural prototype, the patterning is random, and whether the elements are presented on other beakers. If there were no obvious prototype, such as a tangible natural element, the elements were considered random, and if the elements did not appear on other beakers, then the vessel was placed in the geometric design category.
**Vandeventer Beaker**

Figure 13 consists of three unique elements: concentric circles, nested half ovals, and sinuous wavy lines. The designs on this beaker does not occur on any other beaker in my corpus. The concentric circles are represented as “undotted” and plain; Phillips and Brown (1978) suggest they are decorative elements, even though they qualify as a motif, reference David Pleelps (1970:98), who considers these concentric circles as water symbols. The sinuous wavy lines and the nested half ovals give the vessel a cosmological or otherworldly aura. The archaeological context for this beaker is the Vandeventer site (11BR9) in Brown County, Illinois. The overall designs portray a fluidity similar to elements associated with the Beneath World. Another interpretation of the overall design is that of the cosmos, which also displays flowing lines and concentric circles.
Figure 13. A beaker depicting geometric shapes from the Vandeventer Site (11BR9). (From the collection of the Illinois State Museum-Dickson Mounds. Courtesy of David H. Dye, photographer)
Altered States of Consciousness

Recent research has explored how New World shamans interpret (Altered States of Consciousness) ASC experiences while using psychoactive agents (Vanpool 2009). The response to ASC is determined by the acting agent, but may include, “visual and auditory hallucinations, the feeling of flight or swimming, and extreme emotional experiences including the fear and perhaps the sense of dying” (Vanpool 2009:180). Entoptic images are well known with ASC and can even be experienced by the blind. These images are usually depicted as, “dots, grids, lattices, honeycombs, checkerboards, arcs, cobwebs, tunnels, stars, and spirals” (Vanpool 2009:180).

Geometric shapes versus decipherable forms may result from the creator undergoing an entoptic experience resulting from visual effects or a hallucination (Vanpool 2009). While these
geometric shapes could be the result of visual disturbances during altered states of consciousness, they have implied cultural meanings to cosmological events and beings, instead of a compilation of items viewed during these trips to the spiritual realms. If Mississippian iconographic images result from altered states of consciousness why do we see some similarities in geometric elements among locales? Marlene Dobkins de Rios (2002) offers a solution to this question by referencing Anthony F.C. Wallace’s research, who compared the results of North-American indigenous people and Caucasian Americans ingesting peyote. The study indicates that groups sharing beliefs, expectancies, and common values, respond to peyote in culturally appropriate and meaningful ways. If social values are dissimilar, then different responses would be expected. For example, if one expects to see an Under Water panther during their state of altered consciousness, because it is what is assumed of them or what they assume for themselves, then their interpretation of their hallucination will be that of an Under Water panther. Such cultural norms transverse spatial and temporal dimensions until a new force brings about changes or transformation for a new norm.

Shaman enter these altered states of consciousness in order to travel in between the worlds to seek information or power from deities. These trances can be induced by consuming psychotropic substances such as, “datura, tobacco, mushrooms, peyote, and mescal bean” (Huckell 2006:156). Another method for encouraging trances is through acoustic stimulation such as the repetitive beat of a drum or chanting which impacts the central nervous system (Jilek 1982). This method of entering a trance could influence others in association, as seen in an account from Aldous Huxley (1952: 369), “No man, however highly civilized, can listen for very long to African drumming, or Indian chanting…and retain intact his critical and self-conscious personality.” Trances could also be brought on by pain, especially pain in association with other
stimuli such as: “hyperventilation, hypoxemia, dehydration, hypoglycemia, sleep deprivation, and exposure to extreme temperatures” (Jilek 1982: 327). Finally, trances could be entered by suggestion of people who wielded power and persuasion over the citizens. This method of collective suggestion could also influence what the visions of the trance formed into. Once, these portals to enter a trance was open, the spirit of the person left their body, sometimes transforming into an animal. If the trance invoked feelings of flight, the individual may believe they have transformed into a bird, if sensations of swimming were felt, the individual could trust that they have become an underwater creature. The power of collective suggestion could also influence the “transformation” stage, leading to differing visual stimuli such as spirals, zig-zags, and wavy lines. These shapes are then transferred to a media such as ceramics and rock art, in which archaeologists attempt to infer meaning.

Rock art research predominately focuses on the identification of geometric shapes and their implied meanings. However, are we biasing these inferences based on our ethnocentric applications to the material we are viewing? Bednarik (2016) seems to think so, referencing our inability to understand the cognitive world that was being experienced at the time these motifs were created. Bednarik argues that in order to receive an emic view of the meanings behind these symbols, the viewer would need to understand the previous experiences of the creator through the creators own consciousness, something that archaeologists are unable to do (Bednarik 2016). Instead researchers are establishing meaning based on their own personal past experiences and sensory stimuli, overriding the original meaning and laying a new perspective over one that is no longer accessible. Ben Watson (2013) views these experiences from a different point of view, suggesting that images, while interpreted through our own personal experiences, are universal and invoke similar responses based on the human visual cortex. According to Watson, different
visual images stimulate human behavior in various ways such as expressing fear, excitement, or anger (Watson:2013). Bednarik (2016:179) argues that the superposition of our own personal experiences are unique and can cause hindrances interpreting geometric designs of the past, and “as human beings in the context of our societies here and now; we have no way of understanding the conceptual world of people thousands of years ago.” This statement suggests that while certain visual cues may universally cause particular reactions, these are based on individual cultures and not from evolutionary traits of human behavior. Therefore, while we share common reactions with our ancestors, this does not mean that we will have the same response to designs created under different social contexts.

_Pareidolia_

Pareidolia is when our eyes detect patterns, “where no representation actually exists” (Bednarik 2016:168) and may encourage the misinterpretation of iconographic designs. If you have ever watched a news story in which someone has seen the face of Jesus in a piece of toast, they have been subjected to pareidolia where their past personal experiences and beliefs are being dredged up through the reservoir of sensory information in our brains and in an effort to make sense of random patterns in the toast. We can take comfort in the fact that seeing random faces in our breakfast material does not mean our brains are flawed. Instead this patterning detection does not have a negative effect on most mammals, unless you are human and call the local news station to report the patterning. According to Bednarik (2016:169), “the cost of seeing a false pattern as real is significantly less than the cost of not detecting a real pattern, hence natural selection will favor patternicity.”

Bednarik (2016:169-170) gives a somewhat comical account of a gentleman spending large amounts of his personal money to save boulders containing petroglyphs from destruction.
These boulders were removed from the endangered area to his summer home, in order to be interpreted and preserved. When rock art specialists were called in to determine the significance of the findings, they were unable to locate the petroglyphs, leading to the discovery that the boulders had been altered by taphonomic damage. The patterning of this damage, and that sneaky evolutionary visual patterning of pareidolia, led to the identification of mask-like figures, which did not exist. Pareidolia can be exacerbated through, “psychological anxiety, latent coercion, and auto suggestion…. prompting alleviation through concurrence.” (Bednarik 2016: 172). While ceramics are different than rock art in the acknowledgement that the motifs located on them are intentional, and not results from natural alterations, the recognition of an anthropomorphic face or an identifiable animal can be influenced by pareidolia and lead to biased interpretations that once they become public, seem to ingrain themselves into factual and sometimes unchangeable meanings. This study was careful to consider possible ethnocentric biases in the examination and inferred interpretations of the iconography associated with the geometric beakers and their possible ritual association.

The Vandeveiter (11BR9) beaker could have comprised a different function than the majority of beakers, or could have been associated with a local variant of a religious sodality that portrayed different aspects of the powers with the contents inside beakers. For example, if beakers normally held black drink and were used in purification ceremonies, perhaps this particular sodality focused on the consumption of a different type of medicine associated with the need of the body to recover after an ecstatic state, once it had been depleted of life sustaining nutrients. If fasting has occurred for days, the intake of a soup or stew would seem magical, with its ability to promote healing inside the body. I suggest the geometric motifs on the beaker
portray the importance of the trance state and its association with floating, flying, or swimming as suggested by the wavy lines, concentric circles, and semi circles.

*Ester Berry Beaker*

Another example that fits into the geometric category, and stands out from the other beakers in my corpus, is the spiral design and zig zag lines on a beaker from the Ester Berry site (11F13) in Fulton County, Illinois. The spiral design is similar to the double-legged Q design in its diagonal hatched lines; however, the example in Figure 15 does not include any elements of the sacred four directions, the legs of the Q, or “ladders”. The argument could be made that this design in itself is not geometrical since it could have a natural prototype in the sacred spiral fire or as a cosmological map depicting the Milky Way or solstices (see Chapter 4). However, the opposite side of the vessel contains a pattern of zig zag lines (see Figure 16), which do not have a natural prototype unless we associate them with lightning. Ben Watson (2013), in discussing human behavior, argues that geometric designs can be used to attract attention and act as a mechanism to detail caution and to heightened the sense of awareness. He states zigzag patterns can invoke memories of teeth or dorsal scales and that, “The visual properties of such parts of animals are innately recognized as dangerous and evoke emotional arousal in humans, including fearsome reactions and aversive behavior” (Watson 2013:215). He goes on to associate zigzag lines as being “harsh” where wavy lines are associated with affiliative characteristics. Vanpool (2003:711) also sees a connection between zigzag lines and serpents by stating, “The serpent bank is also only rarely found as continuous zigzag bands on pots decorated with geometric designs.”

Aftandilian (2007:99) interprets the design on this beaker as a coiled snake, “likely a rattlesnake”, titling it “Berry site snake beaker spiral” (2007:99) on one side, and the other side
of the beaker as “Berry site snake beaker squiggles” (Aftandilian 2007:100). In the brochure
*Recovering a Heritage*, from the Western Illinois University Art Gallery (1991), this vessel and a
similar one from Ester Berry, is titled *Red Beakers with Engraved Serpent and Water Elements
and Bird Tabs*. This would suggest that the vessel is portraying the balancing of the cosmos with
a deity from the Above World, represented in the bird tabs effigy (see Figure 17), and the Below
World, represented by either the zigzag lines or the spiral. However, I propose a different
hypothesis to the meaning of these two geometric designs and their accompaniment with an
avian creature. As previously mentioned, during shamanic trances, the spirit or soul of the
individual leaves their body to travel into other worlds. During this journey they can have the
sense of flying or swimming and see entoptic images such as spirals along with flashes of
movement (Vanpool 2003, 2009). This may explain the spiral on the vessel and the zigzag lines
on the opposite side. However, why would an avian figure be depicted on a vessel associated
with a shamanic trance journey? One hypothesis could be that the bird is representing the feeling
of flight during this journey. I suggest that the avian elements on the vessel are actually depicting
a tutelary spirit that is, “frequently in the form of birds” and “are sent with the shamans to guide
and aid them during their flights” (Vanpool 2003:699). Shamans can sometimes see their tutelary
guides in trances as, “flashes of movement that are commonly interpreted as birds” (Vanpool
Figure 15. Ester Berry site (11F13) beaker illustrating a spiral pattern. (Western Illinois Archaeological Research Center. Courtesy of David H. Dye, photographer)
Figure 16. Ester Berry site (11F13) beaker showing zig zag lines. (Western Illinois Archaeological Research Center. Courtesy of David H. Dye, photographer)
Both the Vandeventer site (11BR9) and Ester Berry site (11F13) beaker express a possible association in shamanic journeys and altered states of consciousness. These vessels fall into a small category of beakers that exhibit designs not shared by other beakers. While the spiral design on the Ester Berry beaker has been identified on other beakers and is similar to the double-legged Q design, its association with zigzag lines on the opposite side of the vessel is the only known example in my corpus and suggests that a different story, or section of a story, was being emphasized on these two vessels. This was not the same variety of the story as the double
legged-Q design, even though some similarities still exist. A second beaker from Ester Berry depicts the same spiral design, without the zigzag lines, and without the bird tabs, but accompanied by randomly placed “ladders”. Possibly illustrating another part of the charter myth, a different stage in a ritual, or a piece of the journey during a trip to the other worlds.

While the identification of these designs is important for understanding trances and their roles in religion, the interpreter of these meanings can unintentionally bias the results and other’s conclusions. Without being aware, archaeologists can impose ethnocentric ideas into the experiences of past individuals and identify patterning where it does not exist. These ecstatic trances were individual experiences, unique to the entity undergoing them and unlike any other person’s trance. To believe that we can tap into the individual’s previous experiences and consciousness centuries later is irresponsible. However, by following guidelines for the interpretation of iconographic designs, becoming familiar with ethnohistoric and ethnographic accounts, as well as associated archaeological contexts, and recognizing our tendency to view others experiences through our own constructs, we can propose educated inferences.
Chapter 6

Magic, Myths, and Monsters: An Iconographic Analysis of Avian and Serpent Beaker Motifs

Owl Beakers

Owls are unique birds in their natural form as well as their mythical one. They are nocturnal predators, which would have made them an anomalous animal to Mississippians. They are able to rotate their heads in a manner unlike other animals and they are fierce hunters. The influence these animals had on Mississippian belief systems is evident in their frequent display as effigies. According to Aftandilian (2007) owls are depicted on Mississippian effigy artifacts, in Illinois, at a higher percentage than other animals. Owl effigies in the form of hooded bottles, pendants, pipes, and rim riders are known throughout much of the Mississippian world. Owls have also found their way onto beakers in the form of effigies, perhaps symbolizing a connection between their mythical nature and the function of beaker vessels.

Owls are the most common animal effigy on beakers, with my corpus containing three. If we include the over two hundred and fifty beakers assembled in the corpus, the three owl effigy beakers would seem like an insignificant number. However, effigies on beakers are rare. Four effigy beakers are described from the Cherry Valley site. One is noted as a “Red-slipped rim-
effigy bowl” and one Neeley’s Ferry Plain bowl with unidentified rim-effigy”. (Perino 1967:46). Another is a “beaker bowl with a deer rim-effigy head and a concave handle with dam” (Perino 1967:48). The final one is, “A rim-effigy beaker bowl with a bird-effigy head on the rim.” (Perino 1967:49). These four vessels could be identified as beaker-bowls due to their, “concave or recurving sides common to the beaker form” (Perino 1967:45). One other beaker effigy originates from the Schild site and is a, “Beaker with a rudimentary effigy head on rim” (Perino 1971: 90). Most of these effigy adorno heads listed are not distinguishable as originating from natural referents.

The three owl effigy beakers all originated from sites in Illinois: with one from the J.P. Kerr site in Brown County, Illinois; the second from the Schild site in Green County, Illinois; and the third from East Saint Louis in St. Clair County, Illinois.
The three owl beakers are each distinctive in their mode of presentation. The first owl beaker (Figure 19 a and b) from Brown County, Illinois displays a bird referenced as an owl, attached to the rim and side of the vessel. One important factor to note is that the owl is directly across from the lug on the opposite side of the beaker as if replacing the other lug that commonly occurs. The owl is represented by a straight beak, a head, its back, the upper portion of its breast, its tail which is up instead of down, and two wings, one on each side of the body. The characteristics not presented, which can be just as important as those represented, are the legs, talons, ear tufts, a hooked beak, or the large eyes associated with owls. Since the characteristics

Figure 18. Google Earth image depicting the counties containing owl effigy beakers.
associated with owls are not illustrated on this vessel, the assignment of the term owl is used loosely and could result in its movement to a different effigy category at a later date. While this effigy represents a form of avian creature, it is unclear if the original intent was to portray an owl.

The second owl beaker, Figure 20, is classified by Aftandilian (2007) as a beaker. I have not seen this artifact, but I would classify it as a beaker bowl based on the photographs, as the walls slant outward instead or possessing the classic, straight-sided walls characteristic of most beakers. The Schild site beaker is rare in form due to the large, tabbed tail, effigy head, and its lack of a handle and a rim lug, though it is difficult to pinpoint particular stylistic characteristics.
based on the photographs. The owl is reclining with its head and underside of the tail facing upward. The legs, talons, and wings are not portrayed. It is unclear if any facial features are present. Aftandilian (2007:388) states that the effigy does possess “ear” tufts.

Figure 20. Reclining Owl Beaker Schild site, Greene Co, IL. (Reclining owl effigy beaker GM 5425.6840 Gilcrease Museum, Tulsa, Oklahoma. Courtesy of Robert V. Sharp, photographer)

The third beaker, Figure 21, is a partial beaker, and displays a frontal view of an owl’s head along with two lines incised parallel to the head, wrapping around the beaker just below the lip as a rim element. The figure displays two “ear” tufts: two large round eyes, and a prominent beak.
The beakers from the J.P Kerr site and the Schild site were recovered from burials. According to Aftandilian (2007:388), the reclining owl beaker was excavated from “Knoll B with Burial 198, a 1-12-year-old child.” Susan Spencer (2014:603) describes the archaeological context associated with the beaker as originating from infant burial SB198, “Beaker with owl effigy head, fifteen-disc shell beads, one large tubular shell bead, four triangular projectile points.”

The archaeological context associated with the East Saint Louis owl beaker is unknown. However, the majority of beakers from ESTL originate from structures or pit features (Pauketat 1998). This suggests that the partial owl effigy did not originate from a burial and may have been associated with a structure.
Plain beakers also may have an association with owls. At the Kincaid site (11MX2-11, 11PO2-10) in southern Illinois, a miniature hooded bottle with “ear” tufts were located inside two beakers from Mound PP2 (personal Communication, Dr. Tamira Brennan, 2018).

Particular elements of the owl design can stand independently. For example, most “owl” hooded bottles contain only “ear” tufts but are still identified as representing the owl design. Another example is particular facial characteristics of the owl such as its hooked beak or large eyes. Owls are easily identifiable by their unique features, which are often portrayed singularly without any accompanying motifs.
Owls are mysterious animals that are allied with the underworld and witchcraft due to their association with darkness, death, ghosts, illness, solitude, and calls that can resemble shrieking (Varner 2010). Different indigenous groups imbue differing and often specific characteristics to owls, with such notions tending to emphasize negative or positive powers. For example, (Chandler et al 2016) mentions how the Arikara believed owls were healers who can assist medicine men in their healing. Owls can also be the materialization of ghosts and can cause a sickness in those who hear its screech. Varner (2010) and Chandler et al. (2016) describe numerous stories of owls assisting people who have been injured or grown ill. Owls were considered to be warriors by the Hidasta, and Mandan who perceived Burrowing and Snowy
Owls as having the power to provide bravery and success in warfare (Chandler et al. 2016). Indigenous groups were aware of the owl’s hunting prowess and would have wanted to possess those same powers against their enemy.

The Mandan, Arikara, and Hidatsa also believed owls possessed the ability to perform spells and were witches (Chandler et al. 2016). If an owl was seen at night, it was a bad omen from a spirit that had vengeful intentions (Varner 2010). According to an account from the Chiricahua Apache, “the bad ones go right into the owl, at death, at once” (Opler 1941:230).

Ethnohistoric accounts also mention owls as being messengers or acting as guides. Aftandilian (2007) argues that owl bottles, bowls, and beakers, may have assisted children in their journey to the afterlife, or along the Pathway of Souls. He bases his argument on archaeological evidence concerning the large number of owl vessels interred with sub adults. Birds, including owls, were also considered guides for shamans who upon entering into trances could then communicate with ancestors, culture heroes, and deities.

With owls being associated with various qualities, it is difficult to narrow the meaning behind owls modeled as effigies on beakers. However, with the suggestion that beakers are associated with black drink (Crown et al 2012; Washburn et al. 2014), some inferences may be proposed. For example, the portrayal of owls as beaker effigies may demonstrate the close relationship between owls and their medicinal power. Black drink rituals may have occurred before war ceremonies to purify the body, which include requesting assistance for success and bravery in battle (Dye 2004:196). Finally, shamans may have used beakers infused with “owl power” through the applied effigies to assist on the journey to communicate and request assistance from ancestors and deities. In this sense owls could provide guidance for the shaman’s spirit along the pathway of souls and then back to the body.
**Crested Bird Motif Beaker**

The crested bird motif is the only such design in the beaker corpus. The one beaker exhibiting crested bird motifs has an unknown provenience, but is identified as originating from Brown County, Illinois. The natural prototype of this design is a crested bird, probably a woodpecker, but it could also represent a belted kingfisher.

The beaker portrays three individual avian creatures. Figure 23 illustrates a bird with a three feathered crest on its head, a circular eye, and an elongated beak. The neck area contains two or possibly one continuous line that wraps around the eye and down its neck and breast and up to its wings. The wing illustrates eight feathers, while the tail is marked by six feathers. A single cross and circle motif is centrally located on the bird’s body. Figure 24 depicts an avian creature with similar characteristics to Figure 23. It also possesses three feathers in its crest, a circular eye, and an elongated beak. The neck is different, illustrating the line that wraps around the eye and to the wing area, but also an additional line that emerges from the bottom of the eye and extends to the body. It contains seven feathers on its wing, and five tail feathers. It also has a single cross and circle motif on its torso. Figure 25 contains three feathers on its crest, a circular eye, and an elongated beak. It is similar to Figure 24 due to the extra line radiating from beneath the eye and towards the body. This portrayal does not demonstrate the cross in circle motif. The heads of these three avian creatures are in profile and face to the right.
Figure 23. Crested Bird beaker from Brown County, Illinois illustrating the first crested bird. (Private Collection. Courtesy of David H. Dye, photographer)
Figure 24. Crested Bird beaker from Brown County, Illinois illustrating the second crested bird. (Private Collection. Courtesy of David H. Dye, photographer)
The crested bird beaker and the avian/owl beaker (see Figure 19a and b) may originate from the Vandeventer or the Kerr site (personal communication Larry Conrad, 2018). The crested bird beaker as well as the avian/owl beaker, is mentioned in B.W. Stephens (1958:84) as originating from the Versailles Township in Brown County, Illinois. The beaker is also listed in Hathcock (1988:53) with the location identified as the Crable site in Fulton County, Illinois. The context is unknown, but based on Stephen’s article it was probably associated with a burial.

Figure 25. Crested Bird beaker from Brown County, Illinois illustrating the third crested bird. (Private Collection. Courtesy of David H. Dye, photographer)
The crested bird beaker is distinctive in that it portrays three avian creatures. The three feathers on its head identifies a crest, which places it in the particular avian category of crested birds and makes referencing a natural prototype simpler. The circle and cross motif suggests a relationship with the four directions or possibly the four winds. The bird’s wings are spread as if in flight and the legs and feet are not depicted, possibly because they are stored under the bird’s body. The culturally significant number three is represented in the three feathers in the crest as well as the number of crested birds portrayed on the vessel. Two of the creatures possess a circle in cross on their body, where the third does not, intentionally differing the theme for that design. The lines around and extending from the eye of the creature could represent the banded lines that occur on woodpeckers, (see Figure 26). Two of the crested bird designs seem similar, while the third is portrayed in a less sophisticated manner.
Figure 26. Woodpecker on a tree. (Courtesy of Steve Colbert, photographer)

Lankford (2011) relates a myth from Swanton’s Creek collections that associate woodpeckers with the Beneath World. The myth explains that the woodpecker received the
stripes on its tail from placing its tail halfway into the water. Lankford (2011) also proposes that in eastern Woodlands narratives, the crested bird is associated with weather powers.

Aftandilian (2007) focuses on two individual elements of the avian motif to argue that the creature depicted on the vessel is a snake or snake-like monster associated with the underworld. One element is the cross and circle depicted on the creature’s body, which he suggests relates this creature to spider gorgets. The cross in circle motif on the spider gorgets, and on the crested bird beaker may represent, “the shamanic axis mundi that spiritual practitioners used to travel between the worlds” (Aftandilian 2007:199). The cross in circle may act as a communication device between the different realms, relating it to an intangible axis mundi. However, numerous artifacts with various animal and anthromorphic creatures portray the cross in circle motif, inferring that this element by itself might not note a connection between the spider and the crested bird.

The Cox Mound style gorget depicted in Figure 27, illustrates similar cosmic structures as the crested bird beaker, which Aftandilian refers to as a snake monster. Lankford (2004) discusses the five elements of the Cox style gorget and identifies the crested birds as the four directions or Thunders. The second element on which Aftandilian focuses is identifying the creature as snake based on the sinuous lines radiating from the eye and flowing down the neck. The same lines radiate from the eye of the crested birds on the shell gorget in Figure 27. While the crested birds on this beaker do not display serpent-like characteristics, other crested birds such as those from Moundville, illustrate serpent characteristics, such as cross hatching and long snakelike tongues.
These various genres associate the crested bird with serpent-like characteristics and seem to be regional manifestations, which are not represented by this beaker. The three crested birds on the beaker all share similar characteristics, however two of the designs seem similar, while the third exhibits crudely designed elements. I offer two hypotheses to explain this difference. The first is that the crested bird beaker is an heirloom object. Either the two birds were originally decorating the vessel and then the third was added or the crude design occupied the vessel and was later joined by the two similarly illustrated birds. The second hypothesis is that the same individual created the designs, but at different points during an ASC experience.

Figure 27. Cox Mound style gorget. (Courtesy of David H. Dye, photographer)
The crested bird beaker is also mentioned as a winged serpent, or identified by Aftandilian as a plumed serpent monster, on which it could have been ridden during trance journeys (Aftandilian 2007). In response to Aftandilian’s suggestion that this creature is a winged or plumed serpent monster I refer to the winged serpent discussed in Lankford (2004). According to Lankford the winged serpent contains specific elements that relate it to the Beneath World. One element is the concept of the cross and circle motif, which is the center of the vessel’s imagery emphasizing its importance to the cosmological theme displayed on the beaker. The swastika image serves as a, “locative or shorthand sign for the beneath world.” (Lankford 2004:214). He goes on to state that the swastika can substitute for other images such as a cross in circle design suggesting the crested bird on the beaker illustrates a shorthand symbol, referencing its ties to the Beneath World or at least to the watery realm. Lankford (2011) further ties crested birds, specifically woodpeckers, to the watery realm by recounting a myth from Muskhogean speakers in which a woodpecker obtains the strips on its tail from it hanging down into the water at dawn.

We must then question the identity of the creature on the vessel. One hypothesis is that the creature is depicting a woodpecker, an animal associated with the watery realm due to it receiving its tail stripes from contact with the water, making it a creature able to communicate or open a line of communication between the Middle World, and the Beneath World, as well as the Upper World due to its wings as locatives. The crested bird figure fails to portray particular images of plumed serpents such as the elongated body of a snake, any cross hatched lines, or a projecting tongue. The creature clearly possesses a beak, a birdlike tail, and wings. The sinuous lines down its neck referenced by Aftandilian as serpent characteristics, could be the detailed
patterning on the heads and throats of woodpeckers, rather than and not associated with serpents (see Figure 26).

Similar lines depicted on cat serpent images detail the lines as emitting from the mouth and nose area and not the eyes (Lankford 2004:216). The only element associating this creature with the Beneath World is the cross in circle motif, which I suggest may symbolize the creature’s ability to act as a communication device with the Beneath World, however, this ability to communicate does not infer that the creature belongs to the Beneath World; but rather its ability to be transcendental, able to transverse the Above World and Beneath World, as a communicator with the Beneath World.

My final hypothesis argues that the cross in circle motif may represent a location along the Path of Souls and not a portal. This location is the Realm of the Dead or where the ancestors dwell. The crested birds may be guarding the entrance to this location and may be one of the obstacles that must be passed in order to reach this destination.

*Intertwined Serpent Motif Beaker*

The serpent beaker, from the Cagle Lake site (23PM13), (aka Kersey, Kersey II, Permission Grove) (Figure 21), is the only one in the corpus that portrays the cross hatching associated with serpents as well as the swastika cross in circle, which Lankford (2011) identifies as an element of the Beneath World. This beaker shares elemental characteristics with numerous cylindrical bowls or bowl beakers from the Moundville site, suggesting a possible interaction. The natural prototype for this design would relate to a form of serpent. The elements depicted at the end of their bodies suggest that the prototype for this design may be a rattlesnake.
The stylistic elements on this beaker from interior to exterior include a swastika cross in a circle surrounded by two entwined snakes. The snakes contain cross hatching on their bodies along with paired terraces, which according to Phillips and Brown (1978:156), “occurs as body markings on snakes in Braden B and C.” The bottom snake is circular and vacant with an elongated D motif occurring around the eye. The top snake also contains a circular voided eye, but has an enclosed circle surrounding it. Both snakes have a barred mouth and honing teeth. The bottom snake contains three teeth per upper and lower jaw, while the top snake contains four teeth per upper and lower jaw. The bottom snake portrays two tongues with one going upward and one downward. The top snake only contains one tongue, which projects straight out from its mouth. The two snakes possess a band at the end of their bodies, which leads into heart designs possibly representing rattles.

Figure 28. Cagle Lake (23PM13) site intertwined motif beaker. (Private Collection. Courtesy of David H. Dye, photographer)
The swastika cross in circle in the center of the serpents has been associated with the underwater world inferring that these creatures are connected to the Beneath World (Lankford 2011). The crosshatching on the bodies of the creatures has been observed on other media such as shell gorgets as characteristic of serpents. The stepped terrace design has also been suggested to occur on belts as, “body markings on snakes” (Phillips and Brown 1978:156). These elements in collaboration suggest that these creatures represent serpents of the Beneath World.

Folklore based on serpents dominates ethnographies and ethnohistoric narratives. The Great Serpent, a creature of the Beneath World possessed powers that could be obtained by cutting off one of the serpent’s horns or scales (Lankford 2011). Water spirit veneration is seen in the Mississippi Valley, possibly associated with an explanation for drownings, and the hope to prevent them. The Creek, Yuchi and the Hitchiti relate stories of people and even horses being dragged into the water and drowned by serpents (Lankford 2011).

The Cagle Lake (23PM13) beaker has an association with the Beneath World and the creatures that inhabit it. The serpents on the vessel seem to be guarding or illustrating a portal represented by a swastika cross in circle (Reilly 2004). The swastika cross has been identified on imagery associated with the Great Serpent, giving it ties to the underworld (Lankford 2011). The design may represent the desire to communicate with the Beneath World, possibly by entering the portal they are guarding.

Another possible hypothesis is that the serpents are creating a vortex in the water, not associated with a portal, but with an acute weather event such as a water spout. This would signify their ability and power in controlling weather events. The possesor of the vessel could wish to appease these weather dieties to supress such storms or to send these powerful storms to attack their enemies.
I suggest that this motif meaning is the same as the crested birds beaker, and that these serpents are depicting obstacles, or tests mentioned by Lankford (2004, 2011). These creatures are protecting the entrance to the Realm of the Dead, and must be passed to reach the destination.
Chapter 7

*Strength and Spoons: An Iconographic Analysis of Fist Effigy Beaker Handles*

**Geographic Locations**

The corpus of beakers with fist effigies includes fifteen sites in four states. The fist effigy is the most common stylistic element on Mississippian beakers in the American Bottom, Central Illinois Valley, and the Central Mississippi Valley, excluding eastern Arkansas and western Kentucky. Table 3 depicts the fist effigy beaker sites per the regional area under examination.
Table 2. Fist Effigy Beaker Sites in the American Bottom, Central Illinois Valley, and the Central Mississippi Valley.

<table>
<thead>
<tr>
<th>Fist Effigy Beaker Sites</th>
<th>Eastern Arkansas</th>
<th>Central and Southern Illinois</th>
<th>Southwest Indiana</th>
<th>Western Kentucky</th>
<th>Southeast Missouri</th>
<th>Western Tennessee</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>BBB Motor</td>
<td>Angel</td>
<td>N/A</td>
<td>Towosahgy</td>
<td>Obion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dickson Mounds</td>
<td>Bone Bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Olin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kerr Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horseshoe Lake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ester Berry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cahokia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vandeventer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collinsville</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airport</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orendorf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As was the case with the double-legged Q design, there are several variants of the fist effigy. Some fists resemble paws rather than human fists, while others include intricate details to

Figure 29. Google Earth image detailing the counties where fist effigy beaker handles occur.
the human anatomy such as the inclusion of individual fingers, thumbs, and wrist bones. Some of the effigies contain five fingers and one thumb while others contain four fingers and one thumb.

The fist always protrudes from the body of the vessel with a varying degree of distance from the rim. The effigies jut from the vessel at different angles with some occurring at $45^\circ$ and extended. Others extend from the vessels and slightly curve at the end where the fist occurs.

Certain one’s project parallel from the body of the vessel then take a sharp $90^\circ$ angle, similar to someone flexing their arm upward. None of the effigies are incised except to distinguish the fingers and thumb. The majority of the fists are closed and clenched, however, some are represented as open with the palm projecting skyward: others are open and or slightly open and facing the vessel.

Fist effigy contexts varies from burials to features. While these effigies do not seem to be present in eastern Arkansas or western Kentucky, they do occur in the American Bottom and Central Illinois Valley, as well as southeastern Missouri, and western Tennessee. Most fist effigies are discovered in handle form, separated from the original vessel. This is most likely due to the riveting style used to attach them and their tendency to break.

The fist effigies occur on plain beakers as well as those with Mound Place Incised, the double-legged Q design, and variants of the double-legged Q design. These vessels occur more frequently than other iconographic beakers, and are spatially widespread: however, they seem to have originated in the Cahokia region. The fist effigy and its accompaniment with the double-legged Q design, and its ability to stand alone as its own theme, is unique.
Figure 30. Fist effigy beaker from the Horseshoe Lake site. (Private Collection. Courtesy of David H. Dye, photographer)
Figure 31. Jar from the Smith Mounds (Arkansas) with hand-like handles. (Private Collection. Courtesy of David H. Dye, photographer)
Fist effigies, while frequently occurring on shell cups as functional and nonfunctional hands (Brown and Phillips 1978), are rarely represented in three dimensional form. The fist effigy beaker is distinctive in its incorporation of the human fist into a handle. Another form of the fist effigy is found at the Angel site in Indiana where the human hands seem to hold the sides of a jar and function as flat, open handles. This design also can be observed in a similar vessel from the Smith Mounds site in eastern Arkansas. The Angel site (12VG1) has one example of a fist effigy handle as well as numerous plain beakers and plain tapered or cigar-like handles. The Smith Mounds site (Arkansas) which produced the vessel in Figure 31, also contains plain

Figure 32. Jar with hand like handles from the Angel site (12VG1). (Hilgeman 2000:154).
beakers. No examples of the fist effigy handled beakers have been discovered in eastern Arkansas.

Hand and forearm designs occur on ceramic vessels as well as rock art, and shell gorgets. Most of these designs have been associated with trophy taking. According to Dye (2016:1), regarding religious beliefs, “appropriating and manipulating human body parts was an important component”. Multiple explanations exist for human trophy taking such as humiliating the enemy, proving superiority in battle, forcing the deceased to accompany the successors dead, or even to steal life forces from individuals (Dye 2016). However, the representation of human bones on these ceramic vessels may not be as mundane as trophy taking detailed in ethnohistoric accounts. The first effigies, along with the portrayal of hands and forearms may pertain to supernatural powers or deities and their strength.

The appearance of fist effigies on beakers is represented in selected areas of the American Bottom, the Central Illinois Valley, and sporadically in Tennessee, Missouri, and Indiana. While Arkansas contains a large number of beaker sites, some containing as many as forty-plus beakers, none of them have fist effigies as handles. The idea of fist effigy adornment apparently originated in the American Bottom, which then spread either through marriage arrangements or religious sodalities. Where these beakers occur is just as important as where they do not occur. We can infer the level of contact between this particular sodality at Cahokia and other fist effigy sites based on the prevalence of fist handles on beakers. The fact that this particular clenched fist effigy only occurs on beakers and as handles raises a number of questions. One possible hypothesis is that the handle represents strength, something that is lacking in the rivet applique style of beaker handles. If the vessel was full of liquid and the handle was utilized to hold the beaker, the handle would snap off. Maybe this relationship to
human strength is a play on the insignificance of the beaker handle as a functioning element. Another possible hypothesis concerns the intended contents of the vessels. Archaeologists such as Crown et al. (2012) have tested certain beakers from Cahokia to determine if residues from black drink can be determined. Based on her studies she suggests, black drink was, at one point, placed into some of these beakers. One important function of black drink was to purge oneself of contaminates before certain rituals. One of those rituals was concerned with war and its success (Fairbanks 1979). The human fist on these vessels could induce or possibly represent the strength associated with the purifying of one’s soul before going into battle.

_Mussel Shell Spoons_

My final hypothesis centers around strength and the use of mussel shell spoons (Table 4). While black drink has been mentioned as a ritual liquid, other food items may have also served a function in rituals. One of these may have been food items such as soup or stew. While these foods may seem mundane, and not as “magical” as leaves from a non-native plant being used to create a tea to purify the body, they still may have contained some of their own magic with providing nutrients to the body. For example, the requirements for some rituals mandated that individuals fast for a number of days. After this period of fasting, soups or stews may have seemed incredibly magical with their ability to ease the various discomforts associated with sustained food avoidance, and to renew the body’s strength.

So what evidence supports the idea that, small cup like vessels associated with black drink, were used as stew or soup contains? While looking through burial data to examine the archaeological contexts associated with them, the continuous presence of mussel shell spoons stood out. Numerous beakers are frequently interred with a mussel shell spoon. The argument could be made that the shell spoon may have been associated with other vessels in the interment
and are not linked to beakers. However, as illustrated in Table 3, mussel shell spoons are
sometimes discovered inside beakers, or are the only other artifact in the interment with beakers.
While it seems ironic, the greatest time an individual’s body may need strength, could be after
the body has died. For example, in his description of feeding the ghosts of the dead Varner
(2010:56) points outs that, “after the last meal is provided the spirit then journeys on to its place
in the afterworld in the Milky Way.” In order to transverse the Path of Souls, strength would be
needed to overcome the obstacles and tests required for the spirit. Varner (2010:31) explains the
cultural significance in supplying the deceased spoons by mentioning that, “grave goods consist
of tobacco, a bowl of food and also a wooden spoon which is particularly important as a cultural
item.” Lacking a spoon to consume your food would have been a bad experience for the dead
considering that, “anyone buried without a wooden spoon must eat foam throughout eternity”
(Varner 2010:31).
Table 3. Archaeological context data illustrating the accompaniment of mussel shell spoons with beaker interments.

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Burial No.</th>
<th>Beaker Description</th>
<th>Associated Contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dickson Mounds (11F10)</td>
<td>Burial No. 47</td>
<td>Spoon river handled beaker with double lips D79</td>
<td>Marine shell pendant, one single bead, beaker possibly contained a freshwater shell spoon.</td>
</tr>
<tr>
<td>Dickson Mounds (11F10)</td>
<td>Burial No. 88</td>
<td>Handled Beaker</td>
<td>Everted rim jar, mussel shell spoon (inside the jar).</td>
</tr>
<tr>
<td>Dickson Mounds (11F10)</td>
<td>Burial No. 185</td>
<td>Black polished beaker with arm effigy</td>
<td>Everted rim cordmarked jar, mussel shell spoon (inside the jar).</td>
</tr>
<tr>
<td>Dickson Mounds (11F10)</td>
<td>Burial No. 195</td>
<td>Handled beaker</td>
<td>Dickson plain jar, possibly two covered copper wooden items, mussel shell spoon (inside jar).</td>
</tr>
<tr>
<td>Houston/Shyrock (11F114)</td>
<td>F°904-5</td>
<td>Large plain Spoon River style beaker</td>
<td>Mussel shell spoon.</td>
</tr>
</tbody>
</table>

Burial data from Dickson Mounds (Hart 1980: 40,44,54,55) and (personal communication, Alan Hart, 2019); Schild site (Spencer 2014: 584-587); Houston/Shyrock and Morton Mound sites (Strezewski 2003: 347-385,419-434).
<table>
<thead>
<tr>
<th>Site Name</th>
<th>Burial No.</th>
<th>Beaker Description</th>
<th>Associated Contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston/Shyrock (11F114)</td>
<td>F°904-17</td>
<td>Plain beaker</td>
<td>Mussel shell spoon.</td>
</tr>
<tr>
<td>Houston/Shyrock (11F114)</td>
<td>F°904-65</td>
<td>Plain beaker like vessel</td>
<td>11 bone needles, an unmodified mussel shell.</td>
</tr>
<tr>
<td>Morton Mound (11F1)</td>
<td>F°14-58</td>
<td>Shell tempered beaker with two lip lugs</td>
<td>Extended Crable chert core, three antler cylinders, red ocher, plain lobed shell tempered jar, unmodified shell spoon (inside jar), small tempered jar with an everted rim and two loop handles.</td>
</tr>
<tr>
<td>Morton Mound (11F1)</td>
<td>F°14-87</td>
<td>Straight sided plain beaker with two lip lugs (each lug has incised chevron design) beaker decorated with four X designs (each X has two crossed &quot;ladder&quot; design).</td>
<td>End scraper, mussel shell spoon (inside beaker), unmodified deer molar (in beaker), shell tempered jar, cordmarked jar shell tempered rim fragment, and bone bead.</td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No</td>
<td>Beaker Description</td>
<td>Associated Contexts</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Schild</td>
<td>SB183A</td>
<td>beaker</td>
<td>Copper-covered cedar earspools, antler staffs, hematite celt, hematite rubstones, Ramey Incised jar, two triangular points, one crude triangular point, 20 white chert flakes, red ocher, mussel shell spoon.</td>
</tr>
<tr>
<td>Schild</td>
<td>SB244+</td>
<td>beaker</td>
<td>Two Cooper's hawk leg bones, double-pointed hairpin, Ramey Incised jar, mussel shell spoon.</td>
</tr>
<tr>
<td>Schild</td>
<td>SB293</td>
<td>beaker</td>
<td>Sr. Clair jar, 150-disc shell beads, mussel shell spoon.</td>
</tr>
<tr>
<td>Schild</td>
<td>SB183A</td>
<td>beaker</td>
<td>Copper-covered cedar earspools, two antler staffs, hematite celt, three hematite rubstones, Ramey Incised jar, two triangular points, 20 white chert flakes, red ocher, mussel shell spoon.</td>
</tr>
</tbody>
</table>
Ethnohistoric accounts detail the importance of black drink in the political, religious, and social spheres of historic Native American polities in the Southeast. Historic Indigenous people used black drink in rituals associated with conflict, political situations, and renewal ceremonies, especially the green corn or busk ceremony (Fairbanks 1979). Black drink was also used in daily social contexts, as well as, to welcome guests (Fairbanks 1979; Martin 2000). Black drink is prepared from the leaves of the *Ilex vomitoria* (aka yaupon or cassina) (Hudson 1979). The leaves are parched, steeped in boiling water, strained, and then poured back and forth between two containers to create a froth. The drink is then served while hot to particular members of society (Fairbanks 1979). While ethnohistoric accounts illustrate the method for preparing black drink, the rest of the preparatory logistics are unclear.

The association of black drink with men is frequently noted, as is the observation that women and children were denied participation in black drink consumption (Fairbanks 1979; Merrill 1979; Milanich 1979). The discrepancy in women’s involvement with black drink rituals have been detailed in accounts of their participation in the drink’s preparation (Merrill 1979). There is also discrepancy concerning which vessels were involved in the preparation and dispersal. Numerous accounts and illustrations note that shell cups were used in the consumption of black drink (Kozuch 2013; Milanich 1979). However, which vessel types were
used to boil the leaves, create the froth, or dispense the liquid into shell cups has been left out of the accounts. In this chapter, I focus on these inconsistencies by examining ethnohistoric accounts, historic illustrations, and the archeological record of Mississippian sites in the Central Mississippi Valley, Central Illinois Valley, and the American Bottom. The importance of rituals and social contexts associated with purification will be examined to evaluate the role black drink played in the lives of Mississippian peoples.

According to ethnohistoric accounts, it seems many polities brewed black drink daily, in which preparation was performed by ritual specialists (Martín 2000) “imbued with sacredness.” (Paper 2007: 102). In some instances, these specialists prepared black drink in a, “small shed near the square ground” (Martin 2000: 95), away from the prepared sacred ground. Once the black drink had been prepared, young warriors would beat drums, not long after dawn, in order to inform all adult men within the vicinity that it was time to consume the drink (Martin 2000). It seems the inclusion of all adult men, without the mention of women is in response to women having a limited presence at square activities (Fairbanks 1979: 132). However, these limitations could be negotiated when it came to the preparation of this sacred drink. Merrill (1979:47) discusses an occurrence observed with Timucuan groups in East Florida where the cacique orders the women to prepare black drink. Illustrations such as the painting by Jacques Le Moyne de Morgues, A Council of State (Dye 2004:198) depict a ceremony where men, sitting in a semi-circle, are drinking what is stated to be black drink, while the women in the picture brew the liquid in large vessels and strain it into another vessel. Fairbanks (1979:131) describes the process of straining the tea by noting the leaves were removed from the tea by, “pouring it through a strainer made of split cane.” The image seems to depict this step, showing a woman straining the liquid.
Burial Data

If the preparation of black drink fell to women, would these women be the religious specialists described by Martin (2000) and Paper (2007). Fairbanks (1979:132) also mentions "special persons” in association with black drink, but in this case it is in the connotation of serving the tea instead of its preparation. He does not state the sex of the tea servers, leaving it open to the possibility that women were preparing it. While ethnohistoric accounts depict women and children as unable to participate in black drink consumption, the archaeological record may paint a different picture. Burial records from Mississippian sites indicate that not only men, but also women and children were frequently interred with beakers (Table 5). Nine females and four children are associated with burials containing beakers from the Dickson Mounds site. From the Schild site, two infant burials are associated with beakers, while none were found with female interments.

The Morton Mound site contains one female burial with beakers, the Houston/Shyrock site contained two children and no females (with most burials sex unknown) interred with beakers and the Emmons site contained three female burials, four child burials, and one joint female/infant burial with beaker interment. If beakers are a marker for black drink consumption and if ethnohistoric accounts of women and children not consuming black drink can be inferred for the Mississippian culture, then why are women and children being interred with black drink vessels? Two of these beakers from Dickson Mounds provide indications of black drink biomarkers, one associated with a female and one with a male (notated below by an asterisk).
Table 4. Archaeological context data illustrating beaker interments with children and females. Dickson Mounds burial data (Hart 1980:35-57) and (personal communication, Alan Hart, 2019); Emmons and Fiedler Site Morse et al. (1961:134-138); Schild site (Spencer 2014: 584-587); Houston/Shyrock and Morton Mound site (Strezewski 2003:347-385, 419-434).

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Burial No.</th>
<th>Age</th>
<th>Sex</th>
<th>Beaker Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>11F10 Dickson Mounds</td>
<td>45</td>
<td>35-50</td>
<td>Male</td>
<td>“Tippits bean pot” style beaker (unknown attributes)</td>
</tr>
<tr>
<td>***11F10 Dickson Mounds</td>
<td>47</td>
<td>35-50</td>
<td>Female</td>
<td>Plain “Spoon River style” beaker with two lip lugs and one handle</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>88</td>
<td>&gt;50</td>
<td>Female</td>
<td>“Tippits bean pot” style beaker (unknown attributes)</td>
</tr>
<tr>
<td>***11F10 Dickson Mounds</td>
<td>90</td>
<td>35-50</td>
<td>Male</td>
<td>“Spoon River style” beaker with one lip lug and one handle. Burnished</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>116</td>
<td>47</td>
<td>Female</td>
<td>Plain restored beaker with possibly broken off lip lug and one handle</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>119</td>
<td>&gt;50</td>
<td>Male</td>
<td>“Spoon River style” beaker with one lip lug and one broken handle</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>140</td>
<td>3-12</td>
<td>-</td>
<td>“Tippits bean pot” style beaker (unknown attributes)</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>185</td>
<td>&gt;50</td>
<td>Female</td>
<td>“Tippits bean pot” style plain beaker with a fist effigy. Red slip evident.</td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No.</td>
<td>Age</td>
<td>Sex</td>
<td>Beaker Descriptions</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>------</td>
<td>-----</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>195</td>
<td>35-50</td>
<td>Female</td>
<td>Plain “Tippits bean pot” style beaker with one lip lug and one handle. Red slip evident</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>206</td>
<td>&gt;20</td>
<td>Female</td>
<td>Beaker (unknown attributes)</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>214</td>
<td>3-12</td>
<td>-</td>
<td>“Tippits bean pot” beaker (unknown attributes)</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>282</td>
<td>&gt;20</td>
<td>-</td>
<td>Plain “Spoon River style’ beaker with one lip lug and one handle.</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>293</td>
<td>20-35</td>
<td>Male</td>
<td>“Barrel shaped” beaker (unknown attributes)</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>302</td>
<td>20-35</td>
<td>Male</td>
<td>Plain “Tippits bean pot” style beaker with one lip lug and one handle. Interior red slipping evident</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>426</td>
<td>20-35</td>
<td>Female</td>
<td>Plain Tippits “bean pot” style beaker with one lip lug and one missing handle</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>435</td>
<td>0-3</td>
<td>-</td>
<td>Plain red filmed beaker with no lip lug and one handle</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11F10 Dickson</td>
<td>572</td>
<td>20-35</td>
<td>Male</td>
<td>Plain “barrel shaped” beaker</td>
</tr>
<tr>
<td>Mounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No.</td>
<td>Age</td>
<td>Sex</td>
<td>Beaker Descriptions</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------</td>
<td>---------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>658</td>
<td>&gt;50</td>
<td>Female</td>
<td>“Spoon River style” beaker “Vertical straight line engraved” with two lip lugs and one missing handle</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>746</td>
<td>&gt;20</td>
<td>-</td>
<td>Plain “Tippits bean pot” style beaker with one lip lug and broken handle</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>820</td>
<td>20-35</td>
<td>Male</td>
<td>Plain “Tippits bean pot” style beaker with a missing handle and one lip lug</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>900</td>
<td>&gt;50</td>
<td>Female</td>
<td>“Tippits bean pot” style beaker looped end X incised with design one lip lug.</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>915</td>
<td>-</td>
<td>-</td>
<td>Plain beaker with one lip lug.</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>1009</td>
<td>20-35</td>
<td>Male</td>
<td>“Tippits bean pot” style beaker</td>
</tr>
<tr>
<td>11F10 Dickson Mounds</td>
<td>1016</td>
<td>0-3</td>
<td>-</td>
<td>Plain “Tippits bean pot” style beaker with one handle and one lip lug. Red slip evident</td>
</tr>
<tr>
<td>Schild</td>
<td>SB183 A</td>
<td>Young Adult</td>
<td>Male</td>
<td>Beaker (unknown attributes)</td>
</tr>
<tr>
<td>Schild</td>
<td>SB198</td>
<td>Infant</td>
<td>-</td>
<td>Beaker with owl effigy head (see Figure 20, chapter 6)</td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No.</td>
<td>Age</td>
<td>Sex</td>
<td>Beaker Descriptions</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>---------</td>
<td>---------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Schild</td>
<td>SB244+</td>
<td>Young</td>
<td>Male</td>
<td>Beaker (unknown attributes)</td>
</tr>
<tr>
<td>Schild</td>
<td>SB272</td>
<td>Adult</td>
<td>Male</td>
<td>Beaker (unknown attributes)</td>
</tr>
<tr>
<td>Schild</td>
<td>SB293</td>
<td>Infant</td>
<td>-</td>
<td>Beaker (unknown attributes)</td>
</tr>
<tr>
<td>11F225/226</td>
<td>6</td>
<td>Adult</td>
<td>Male</td>
<td>Beaker with “tine-shaped” handle</td>
</tr>
<tr>
<td>11F225/226</td>
<td>7</td>
<td>Infant</td>
<td>-</td>
<td>Beaker with handle missing</td>
</tr>
<tr>
<td>***11F225/226</td>
<td>9 (10?)</td>
<td>Adult</td>
<td>Female</td>
<td>Beaker with a “hook-shaped” handle</td>
</tr>
<tr>
<td>11F225/226</td>
<td>15</td>
<td>Infant</td>
<td>-</td>
<td>Small “double-lipped” beaker</td>
</tr>
<tr>
<td>***11F225/226</td>
<td>28</td>
<td>Infant</td>
<td>-</td>
<td>Beaker with a “human-hand” effigy handle</td>
</tr>
<tr>
<td>***11F225/226</td>
<td>33</td>
<td>Adult</td>
<td>Female</td>
<td>Plain beaker (unknown attributes)</td>
</tr>
<tr>
<td>***11F225/226</td>
<td>42</td>
<td>Adult</td>
<td>Female</td>
<td>Plain beaker with “hook-shaped” handle</td>
</tr>
<tr>
<td>11F225/226</td>
<td>45</td>
<td>Adult</td>
<td>Male</td>
<td>Beaker with “tine-shaped” handle</td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No.</td>
<td>Age</td>
<td>Sex</td>
<td>Beaker Description</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>--------</td>
<td>-------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11F225/226 Emmons</td>
<td>77</td>
<td>Adult</td>
<td>-</td>
<td>A “handleless” beaker</td>
</tr>
<tr>
<td>11F356 Fiedler</td>
<td>C1</td>
<td>Adult</td>
<td>-</td>
<td>“Two-handled” beaker</td>
</tr>
<tr>
<td>11F356 Fiedler</td>
<td>C6-C8</td>
<td>Child</td>
<td>-</td>
<td>Beaker “without handles and with horizontal incised lines around the rim”.</td>
</tr>
<tr>
<td>11F356 Fiedler</td>
<td>L5 and L6</td>
<td>Adult</td>
<td>(L5)</td>
<td>A “crude single-handed” beaker.  Associated with a breech labor burial.</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F°904-5</td>
<td>8 or 9</td>
<td>-</td>
<td>One large plain Spoon River beaker with handles missing</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F°904-17</td>
<td>Middle Age</td>
<td>Male</td>
<td>One plain beaker (unknown attributes)</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F°904-23</td>
<td>Adult</td>
<td>-</td>
<td>One beaker with fist effigy handle</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F°904-25</td>
<td>Adult</td>
<td>-</td>
<td>One beaker handle</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F°904-34</td>
<td>Adult</td>
<td>-</td>
<td>One plain beaker with a handle and two lip lugs</td>
</tr>
<tr>
<td>Site Name</td>
<td>Burial No.</td>
<td>Age</td>
<td>Sex</td>
<td>Beaker Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>---------</td>
<td>-----</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F*904-62a</td>
<td>7 to 9</td>
<td>-</td>
<td>One plain beaker with one handle and two lip lugs</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F*904-65</td>
<td>Old Adult</td>
<td>Male</td>
<td>One plain beaker like vessel (unknown attributes)</td>
</tr>
<tr>
<td>11F114 Houston/Shyrock</td>
<td>F*904-102</td>
<td>Child</td>
<td>-</td>
<td>Small burnished beaker with the handle missing</td>
</tr>
<tr>
<td>11F1 Morton Mound</td>
<td>F*14-58</td>
<td>Middle Age</td>
<td>Male</td>
<td>One beaker with two lip lugs</td>
</tr>
<tr>
<td>11F1 Morton Mound</td>
<td>F*14-87</td>
<td>Young Adult</td>
<td>Female</td>
<td>Straight sided plain beaker with two lip lugs. The lip lugs contain inside chevron designs. Side of beaker is decorated with four X designs, with each X having two crossed ladder designs.</td>
</tr>
</tbody>
</table>

Another account of women associated with black drink details an observation by the French naturalist, Jean Louis Berlandier, who reports the Caddo, Karankawa, and Tawakoni preparing a tea-like drink, which was consumed by, “Texas women, both Indian and white, [who] drank it to bring on suppressed menses” (Merrill 1979:71). An account published in 1542
in the *Relation of Alvar Nuñez Cabeza de Vaca* details the use of black drink among groups on the east coast of Texas. He observed that while black drink was boiling, the vessel was covered to prevent contamination from, “any passing females” (Merrill 1979:67). While consuming the drink the group would let out a cry causing females to stop moving until the drinking ended, “If a woman violated this restriction, the men punished her severely and threw away the decoction that they had prepared” (Merrill 1979:68). The author further states that if the women had contaminated the drink by moving then they would vomit the liquid to remove the contaminates from their body. If European contact influenced the Southeast indigenous population to exclude women and children from this ceremony, that acculturation should be observed in the illustrations associated with black drink rituals. However, the illustrations seem to show women playing an important role in black drink preparation.

Among the Creek, black drink has been observed as having a special relationship with the square ground, where important political and religious rituals took place (Martin 2000). The square ground, a ritually charged area, was the location of the Green Corn ceremony and where men congregated to take part in black drink consumption. Ethnohistoric accounts demonstrate that black drink played a valuable role in the Green Corn ceremony (Fairbanks 1979). Men would ingest black drink while cleaning the busk ground, suggesting their bodies needed to be made pure in addition to insuring that the sacred area was clean from contaminates. Black drink was also added to the newly purified fire during the ceremony, which was utilized throughout the polity to renew fires within the home (Fairbanks 1979). The use of black drink as a tribute or addition to the purified fire suggests it not only contained the power to purify more than human’s minds and their physical bodies, but also other objects such as fire and sacred areas, including the busk ground.
Purity

Removing the earthly and spiritual contaminants of the body and mind were important activities to conduct prior to partaking in rituals. If the individual was spiritually polluted the ritual might not achieve its purpose, resulting in failed battles, unsuccessful renewal, or the inability to communicate with deities. Swan (1855:265) details the importance of black drink in purifying by stating, “it purifies them from all sin, and leaves them in a state of perfect innocence; that it inspires them with an invincible prowess in war; and that it is the only solid cement of friendship, benevolence, and hospitality.” Purity invoked a balance, not only with human affairs, but also with the cosmos.

The cosmos consists of differing parts, which are in constant conflict and opposition to one another. If the cosmos became unbalanced, disastrous consequences could befall animals, the environment, and humans. Crops could die, fertility could decline, battles and ballgames could be lost, and astronomical occurrences such as the sun and moon risings could cease. Great lengths were sought to keep these worlds in balance and to bestow power from the deities to elites, who were tasked with maintaining balance in this world. In order to maintain purity, rituals focused on, “physical and social separation, smoking tobacco, dancing, fasting, abstinence from sex and sleep, the consumption of emetic war medicines, and the use of prophylactic amulets” (Dye 2004:198).

Purification medicines such as black drink would have been consumed from important vessels such as shell cups during black drink ceremonies witnessed by Europeans in the sixteenth and seventeenth centuries. Dye (2004:198) suggests engravings on ceramic vessels, “may have
served to transform generic profane mixtures into specific, sacred war medicines”. Shell cups also display iconographic designs suggesting they too possessed the ability to spiritually charge and transform their contents, or to aid in communicating with a deity. However, if black drink was consumed from beakers, I suggest the ingredients themselves could stand independently as a sacred medicine. This is suggested from the majority of ceramic beakers with plain attributes and lacking iconographic elements to “charge” them. The ingredients may have been so powerful that they did not need a transformative device to aid their powers. Evidence of this independent power can be found in a description by Fairbanks (1979:131), in which he mentions that other teas required the priest to blow into the liquid, “thus imparting his thoughts and spiritual power into the tea.” However, this was never observed with black drink as suggested by Fairbanks, black drink was special with, “the tea having its own inherent power to resolve differences and promote peace” (Fairbanks 1979:131).

Black drink’s importance as a forerunner to ritual ceremonies can be witnessed in a ritual performed by Hasinai shamans, who consumed black drink during their sacabbi, or forecasting ceremony, in which they foretold of upcoming events such as whether harvests and game hunting would be successful that year (Merrill 1979). Shamans were observed drinking the tea, “all morning”, but no mention of vomiting is recorded (Merrill 1979:70), possibly indicating that only particular ceremonies required the individual to expel the liquid. While, this ceremony was not used to eject contaminates from the physical body, its use could have been to purify and clear the mind in order to “see” these future events. Black drink was also utilized by the Creeks to, “clean one’s insides, bringing out all that is old and making one’s digestive tract new again” (Paper 2007:102).
Another account states that the Karankawa Indians of the Gulf coast of Texas would consume black drink on each full moon and after a successful expedition in hunting or fishing. During this ceremony black drink was boiled inside a vessel over a central fire. Then the vessel was passed around members seated in a circle in which, “each participant drank freely” (Merrill 1979: 69). There is no mention if these participants were male only, which sex prepared the tea, or how large or what vessel was used to prepare and consume the tea. The account does show that the same vessel used to prepare the tea, was also used in its consumption. It also demonstrates that black drink could be used in celebratory ceremonies associated with success and not only for purification rituals performed before an act was undertaken.

While the ceremonies of consuming black drink promoted purification with its inhibitors, certain contaminations outside the society could cause areas to be so impure that black drink could not cleanse them. For example, ceremonies could not take place if the square ground had become impure itself. The square ground could become unbalanced if a member died or if there was a murder. Swan (1855:265) notes, “If a warrior or other Indian is killed from any town having a square, black drink must be taken on the outside of the square; and every ceremony in its usual form is laid aside until satisfaction is had for the outrage”. When these contaminations had occurred the area was spiritually unstable, causing the purification powers of the black drink to be disturbed.

**Social Contexts**

While black drink is associated with communal ceremonies such as the Creek’s annual busk ceremony, ethnohistoric accounts demonstrate that black drink was also an important aspect of daily life (Fairbanks 1979; Merrill 1979). Black drink had a strong social connotation associated with it that may have surpassed its usage in religious ceremonies. Black drink was
consumed in the mornings before breakfast and before any discussions. Such gatherings usually ended around ten in the morning when everyone would disperse to begin their daily activities and breakfast (Fairbanks 1979; Martin 2000). Reminiscent of modern retired men gathering at the local coffee shop in the morning for casual conversation before they separately go about their days. During these morning social gatherings, the goal of the consumption of black drink does not seem to revolve around the need to purify the soul since no vomiting of the liquid occurred.

A second ceremony was sometimes conducted in the afternoon to hold more formal discussions (Fairbanks 1979: 126). Visitors also partook in the social aspects of black drink (Fairbanks 1979:126). Taitt was offered black drink in 1772 from February to May, perhaps demonstrating that Creeks had access to large amounts of *Ilex vomitoria* plants; something that would not have been characteristic of Mississippian polities in the Central Mississippi Valley, Central Illinois Valley, and the American Bottom. Fairbanks (1979: 127) mentions that black drink and tobacco were frequently used during preparations for talks. A description of superintendent of Indian affairs, John Steward’s visit to a Creek town includes the comment that, “On the first morning of his visit to a particular town, he usually was offered tobacco and black drink in the town square” (Fairbanks 1979:127). Caleb Swan associates black drink with protection by stating, “a stranger going among them cannot recommend himself to their protection in any manner so well as by offering to partake of it with them as often as possible” (Fairbanks 1979:127). Nicotine also contained purifying powers, “used to purify the place, participants, paraphernalia, and offerings used in ceremonies” (Paper 2007:11). Historic accounts commonly depict a “peace pipe” being passed around to begin political talks, and that guests were expected to partake in sharing the pipe. However, the use of black drink in a similar
manner has not been illustrated in these preparations. It is of interest that while one aspect of the tradition made itself into popular culture, the other has been removed.

In order for the Mississippians to partake in black drink in a similar way as historic groups, they would have needed access to large quantities of *Ilex vomitoria*, something they may not have been able to achieve through trade alone. Another possibility is that inland Mississippians learned how to transport and cultivate groves of this plant. The possibility that *Ilex vomitoria* was transplanted outside its native area has been proposed by Fairbanks (1979:127), in which he references an observation from Bartram who “specifically mentions a transplanted stand of *Ilex vomitoria* at Jore in the Cherokee county of North Carolina”. Adair also points to the possible transplant of *Ilex vomitoria*, “There is a species of tea, that grows spontaneously, and in great plenty, along the sea-coast of the two Carolinas, Georgia, and East and West Florida, which we call Yopon …. the Indians transplant, and are extremely fond of it” (Williams 1930:49).

*Ilex vomitoria* can now be found in various parts of the Southeast as an ornamental shrub, suggesting that it could have grown in parts of the Central Mississippi Valley, and the Central Illinois Valley if transplanted. Fairbanks (1979:128) in regards to *Ilex vomitoria* plants states, “they withstand transplanting well and readily acclimate to upland soils.” No archaeological evidence has been located to establish whether groves of Ilex vomitoria were transported and grown at Mississippian polities. Fairbanks (1979) also addresses the problem with daily use of black drink and access to large amounts of *Ilex vomitoria* by setting up an equation for us, “Again, assuming a minimum of ten men in the square, each taking about one quart three of four times at each meeting, we would come up with 885 brewing’s. One cup of parched yaupon leaves, strongly boiled, will yield about one quart of tea. This means that a town’s minimal
yearly consumption “would be on the order of 550 bushels of leaves, or 27 cubic yards, the equivalent of 10 sizeable truckloads” (Fairbanks 1979:129). It seems unlikely that this large amount of *Ilex vomitoria* would have been traded into the interior of the Southeast. Even if large polities such as Cahokia, the Cherry Valley site, or Angel Mounds had access to their own groves of *Ilex vomitoria* plants, at the rate mentioned by Fairbanks they would quickly decimate their plants, not allowing them to repopulate growth.

Two hypotheses may be proposed. The first is that Mississippians of the Central Mississippi Valley, Central Illinois Valley, and American Bottom did not participate in black drink to the same extent as the Creek Indians as repeatedly mentioned in ethnohistoric accounts, or that the amount of people allowed to partake of black drink on a regular basis was regulated to a small group of individuals. The second hypothesis states that inland Mississippians had access to *Ilex vomitoria* through trade and also practiced horticulture of groves of *Ilex vomitoria*.

Another form of evidence for the suggestion of transplanted *Ilex vomitoria* plants comes from the preparation of black drink. The leaves of the *Ilex vomitoria* plant are parched before brewing and “is gathered only when it is to be served” (Milfort 1956:139). If the leaves were picked before transport they would not have been fresh when they arrived at their destination, especially if this happened to be several hundreds of miles inland. Merrill (1979:68) references an observation from Çabeca de Vaca who notes, “During this ceremony the men fasted for three days, and daily each one drank 1 ½ arrobas (approximately 6 3/8 gallons, wine measure) of the decoction”. Unfortunately, the number of participants consuming this large amount of liquid daily is not detailed.

Ethnohistoric accounts demonstrate the importance of black drink for historic indigenous populations. However, this same form of assurance cannot be applied to Mississippian polities in
the Central Mississippi Valley, the Central Illinois Valley, and the American Bottom. Material plant remains of *Ilex vomitoria* have not been identified in archaeological contexts for various reasons. The use of absorbed organic residue analysis to determine if black drink was consumed in Mississippian ceramic vessels or shell cups comes with its own sets of obstacles, which can make positive test results inaccurate or debatable at best. The geographic area in this study is outside the reaches of native *Ilex vomitoria* plants, meaning that access would not be as easily attainable as it was for historic tribes near the Southeast coast.

Another aspect to consider is that other medicines were prepared and consumed and may have been used in connection to black drink. Fairbanks (1979:123) mentions that while black drink was utilized in the busk ceremony it was not the only medical tea used. *Miko joyanidja*, made from a willow tree, was prepared and consumed as well as *Pasa*, button snakeroot, and ginseng (*Hilis hatki*) (Fairbanks 1979:123). The vessels used for the preparation and consumption of black drink might have also been utilized for other medicinal teas, which could have prompted misinterpretation in some ethnohistoric accounts, resulting in an expanded account of the use and importance of black drink. If future absorbed organic residue illustrates that black drink was an important aspect in Mississippian rituals and social-political dealings, then more research will be needed to ascertain botanical samples of *Ilex vomitoria* in the archaeological record and to establish if Mississippians transplanted and cultivated *Ilex vomitoria*. 
Chapter 9

*Mistaken Identity: Beakers and Their Association with Black Drink*

Mississippian ceramic beakers, specifically the early ones, from circa A.D. 1050 to 1200, have been posited as ritual containers for black drink (Crown et al. 2012). I disagree with this hypothesis and suggest it is unclear how the connection of beakers with black drink originated. One idea is that Mayan cylindrical vessels, which were used for pouring the ritual drink of liquid chocolate (*Theobroma cacao*) may have been one source for this connection (Washburn et al. 2014). The cylindrical vessel known as “The Princeton Vase”, displays women pouring cacao from these cylindrical vessels. Another possibility is suggested by Milanich (1979:94), who references ceramic vessels from the Alligator Bayou site in Florida as a possible link between shell cups and cup-like ceramic vessels, in which “shell cups were excavated with teacup-miniature ceramic vessels, possibly drinking containers for sacred medicines.” His assumption is based on vessel shape; i.e., that teacup-like vessels served as drinking containers.

Patricia Crown (2018:388) suggests particular drinks, including chocolate and tea, normally have distinctive vessel shapes associated with their use, and that the identification of
these vessels may reflect drinking activity within groups which in turn may signify complexity associated with political and social hierarchies. Crown (2018:388) further notes that in, “complex societies, the number of distinct drinking vessel forms may decrease when produced by specialists.” This principle may be observed in different vessel forms found at Cahokia and the smaller Cherry Valley ritual center. Gregory Perino (1967:59), in detailing the variety of beakers he excavated at the Cherry Valley site, notes that the “Cherry Valley Focus [i.e., Cherry Valley phase] will outclass Cahokia in its seemingly endless variety of beaker forms.” Perino’s ideas reinforce Crown’s statement that beakers at Cahokia were produced by specialists with little if any deviation from design forms. Cherry Valley beakers may have had a wider range of individuals crafting beakers based on their greater variety in form and style.

Crown (2018:329), in discussing drink vessel forms, makes an important point with regard to the association of beakers with black drink by stating, “the vessel might come to symbolize the drink, regardless of the presence of the concoction”. Beakers have come to symbolize black drink even though there is no sufficient evidence to support this idea. Archaeologists, are apt to imply contemporary meanings to items of the past that are considered morphologically similar; this is an example of homoplasy. Beakers, with cylindrical vessel shapes, straight or slightly slanted walls, flat or semi-globular bases, lip lugs, and handles, do resemble modern cups.

Recently, I observed an example of this type of analogous trait or homoplasy at the Jones Archaeological Museum in Moundville State Park. A gentleman came into the museum with his reproduction of a Cahokia-style beaker, which he used for coffee. He assumed, based on the size, shape, and appendages of the vessel, that Mississippian examples must have served as individual drinking vessels, possibly for hot liquids.
Cahokia Region Residue Sampling

Crown and colleagues (2012) were among the first to discuss absorbed organic residue analysis of Mississippian ceramic beakers. Their study included eight beaker samples from Cahokia and its surrounding sites that date between ca. A.D. 1050 and 1250 and were tested using a LC-MS/MS (liquid chromatography-mass spectrometry/mass spectrometry) instrument. They attempted to identify biomarkers from black drink and cacao (*Theobroma cacao*), which include caffeine, theobromine, and theophylline. The presence of ursolic acid was utilized to determine whether the biomarkers were associated with black drink or cacao. The results from the absorbed organic residue can be seen in Figure 34. Four samples were identified from the American Bottom sites: Cahokia, Grossman site, and two from the Curtiss Steinberg Road site (see Figure 34).
Crown et al. (2012:13945) states that “theophylline is not detected in I. vomitoria or I. cassine, but is present in low amounts in cacao”. Washburn et al. (2014:194) also mentions the lack of theophylline in Yaupon, “I. vomitoria contains more caffeine than theobromine but no theophylline.” However, theophylline has successfully been identified as a biomarker in black drink, occurring in I. vomitoria (King et al. 2017a: 36).

Table 2. Samples analyzed by HPLC-MS with contextual information and results

<table>
<thead>
<tr>
<th>Beaker sample no.</th>
<th>Site</th>
<th>Context</th>
<th>Phase</th>
<th>Reference</th>
<th>Theobromine ppb*</th>
<th>Caffeine ppb*</th>
<th>Ursolic acid ppb*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2085</td>
<td>Cahokia</td>
<td>Submound S1, feasting pit</td>
<td>Lohmann A.D. 1050-1100</td>
<td>(31)</td>
<td>1.1</td>
<td>0.48</td>
<td>3</td>
</tr>
<tr>
<td>2086</td>
<td>Cahokia</td>
<td>Mound 33, general contexts</td>
<td>Late Stirling-early Moorehead A.D. 1150-1250</td>
<td>(32)</td>
<td>0.8</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>2087</td>
<td>Grossmann</td>
<td>Feature 308, ritual deposit in pit</td>
<td>Stirling phase A.D. 1100-1200</td>
<td>(8)</td>
<td>0</td>
<td>T</td>
<td>2</td>
</tr>
<tr>
<td>2088</td>
<td>Curtis Steinberg Road site</td>
<td>Feature 8, adult burial</td>
<td>Late Stirling-early Moorehead A.D. 1150-1250</td>
<td>(34)</td>
<td>T</td>
<td>1.1</td>
<td>4</td>
</tr>
<tr>
<td>2089</td>
<td>Curtis Steinberg Road site</td>
<td>Feature 8, adult burial</td>
<td>Late Stirling-early Moorehead A.D. 1150-1250</td>
<td>(34)</td>
<td>T</td>
<td>T</td>
<td>4</td>
</tr>
<tr>
<td>2090</td>
<td>Olczewski</td>
<td>Feature 11, refuse pit</td>
<td>Late Stirling phase A.D. 1150-1200</td>
<td>(35)</td>
<td>T</td>
<td>T</td>
<td>N</td>
</tr>
<tr>
<td>2091</td>
<td>Cahokia</td>
<td>Mound 11, general collection</td>
<td>Late Stirling phase A.D. 1150-1200</td>
<td>(33)</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2092</td>
<td>Cahokia</td>
<td>Feature 34, Dunham Tract</td>
<td>Stirling phase A.D. 1100-1200</td>
<td>(30)</td>
<td>1</td>
<td>0.5</td>
<td>N</td>
</tr>
</tbody>
</table>

All samples are from collections of the Illinois State Archaeological Survey at the University of Illinois, Urbana-Champaign. *T, trace (theobromine in trace level 0.15-0.3 ppb); caffeine in trace level (0.1-0.2 ppb); N, insufficient sample available to analyze; 0, nothing detected. No samples had theophylline. LODs for theobromine, 0.1 ppb; for caffeine, 0.06 ppb; and for ursolic acid, 0.7 ppb.

Figure 34. Organic Absorbed Residue Analysis results. (Crown et al. 2012:13947)

Crown et al. (2012:13945) states that archaeologists often, “analyze multiple samples of ceramics to compare initial findings.” However, other vessel types were not mentioned, nor was a control sample. It appears that all eight samples were beaker sherds, processed based on the sampling method of removing their exterior surfaces. Based on the results of this study, an argument could be made that three of the beaker samples contained residue of caffeine above Crown’s designated trace amount of 0.1-0.2 ppb. However, the question is how did the residue get there? Is the presence of caffeine related to Mississippian usage and possible consumption of black drink, or is there another explanation for how caffeine residues ended up on the beaker sherds?
A few examples of how artifacts become contaminated can be found in Washburn (2014: 192-193), and include “introduction by the original users, introduction by microorganisms, absorption from contaminated ground water, and introduction by human activity during the process of excavation, artifact cleaning, analysis, and storage.” Crown emphasizes that the study took steps to mitigate contamination by having workers wear protective apparel such as gloves, gowns, and masks along with keeping all caffeine out of the laboratory area. However, the possibility that contaminants were introduced before the artifact entered the lab is not addressed. Also, Crown et al. notes that ceramic fragments were used in the study. The use of sherds instead of whole vessels could also contaminate the results. Washburn et al. (2014: 192) stresses that caution should be applied when samples, instead of whole vessels, are used because, “In their new use life, the size and shape of sherds may have been suitable for use as spoons, scrapers, or other purposes”. This new use life may have resulted in ceramic fragments coming into contact with caffeine, which would not have been the vessel’s original purpose when it was complete. An exception might include the vessel fragments being located in the same context. For example, Samples 2088 and 2089 might be from burials, and if so the fragments tested, being from a once whole vessel, would represent the contents of the vessel. However, it is unclear whether the samples were associated with once whole vessels or disarticulated sherds.

Other forms of contaminants include airborne caffeine particles (King et al. 2017a, 2018; Washburn et al. 2014). King et al. (2018) conducted a research project to determine if the biomarkers for datura could be identified in shell cups. He was aware of possible contaminants of caffeine, theobromine, and theophylline from a previous study (2017a). To evaluate if datura contaminants were also airborne, King took samples from areas around the museum by swabbing shelving and work areas using cotton balls cleaned with alcohol and wetted with distilled water.
During a previous testing, no datura residue was detected, however the 2017 (King et al 2018) cotton swab testing showed signs of datura contaminates that had been introduced to the artifacts in a four-year gap (personal communication, Adam King, 2019).

**Contaminates**

King’s study indicates the obstacles faced when trying to establish ancient biomarkers in artifacts impacted by modern contaminants. Therefore, low concentrations of biomarkers such as caffeine, theobromine, and theophylline may not result from pre-Columbian use. Other contaminates may occur from environmental factors ensuing after vessel interment. Ground water can seep into the porous ceramic vessel introducing residue not previously contained in the vessel. Bacteria within the soil can also alter the residues and the amount detected. (Washburn et al. 2014). Another method for introducing caffeine onto pottery sherds involves post excavation practices, such as artifact cleaning. King et al. (2017a) demonstrates how caffeine is water soluble, noting that if a pottery sherd possessed caffeine then that caffeine could be introduced into the water used to soak the other artifacts. This would then spike the ceramic matrix of the sherd with detectable caffeine markers.

Washburn et al. (2014) also investigated contaminates in sampling Mississippian and Southwestern vessels. Twelve of the fifty-three vessels sampled were Mississippian beakers originating from Dickson Mounds (11F10) and Emmons Mounds (11F225/226). Washburn et al.’s samples, like King et al.’s. (2017a, 2018) were taken by the Burr method, in which a sample from the vessel is abraded from the interior by either a drill bit or a piece of sandpaper. The powder sample is then transferred to a sealed vial to be tested in the laboratory. The Burr method may introduce airborne contaminates in the sample from the exterior of the ceramic tested (King et al. 2017a). Washburn et al. (2014) notes that the Burr method introduces airborne
contaminates on the exterior of the sample. Crown et al. (2012:2) attempts to avoid this problem by, “burring all exterior surfaces from fragments of ceramics ~1 cm^2”. By removing the exterior surfaces of the sherd, the airborne contaminates should also be removed and not introduced into the sample.

Washburn et al.’s (2014) study of Yaupon and cacao biomarkers also included bottles, effigy bowls, and jars. To deal with the contamination problem, Washburn et al. implemented a value of 51 ng/ml as the cut off mark for theobromine. If that same cutoff is used for caffeine, n=16 of the 53 samples contain detectable amounts of caffeine above the cutoff mark. Two of these fifty-three vessels are beakers containing caffeine detected higher than 51 ng/ml, six are jars, and five are bowls. This suggests two hypotheses; one detailing that multiple vessels were used for liquids containing caffeine, or two that the main purpose of beakers is not associated with black drink. Washburn et al. (2014) suggests beakers from Cahokia and its hinterlands once contained cacao. According to the authors, 15 vessels were tested from six burial mounds at the Dickson Mounds (11F10). In conclusion, 7 vessels from Mound 1 contained theobromine levels consistent with cacao.

Thirteen vessels were tested from Emmons mounds with 8 containing theobromine levels suggesting the presence of cacao. One of the vessels from Emmons, “had more caffeine than theobromine suggesting it may have contained Black Drink” (2014:204). Washburn includes a beaker, Sample # 1993-0072-824375, from Emmons site that contains all three methylxanthines (caffeine, theobromine, and theophylline). However, according to the results in Table 3 (Figure 35) the sample contains 19.8 theobromine, 35.3 caffeine, and 7.3 theophylline. According to the authors (2014:197) in regard to the theobromine cutoff, “For the dust samples, the sum of the
mean and three standard deviations is 37 ng/ml; for the geographic controls, that value is 51ng/ml. We used the higher cutoff value for the geographic controls.”

Based on the cutoff value the theobromine detected for Sample # 1993-0072-824375 is below the 51ng/ml geographic control, suggesting the sample could be an airborne contaminant. For theophylline detection the authors utilize, “the three standard deviation cutoff requirement for theophylline (>19ng/ml)” (Washburn et al. 2014:197). They do not specify if the cutoff is the airborne concentration cutoff or the geographic cutoff. However, the 7.3 assessment for the sample’s theophylline content is under the cutoff value. As previously mentioned, the cutoff value for caffeine is not clear; however, the authors state, “a similar analysis of caffeine shows that the distribution of caffeine [F (2,73) = 1.8; p=.17] was not different from either of the controls, i.e. airborne contamination could account for caffeine” (Washburn et al. 2014:197). The caffeine detected for the previously mentioned sample is 35.3. If we use the geographic cutoff for theobromine, the level is below the cutoff. The caffeine, theobromine, and theophylline for this sample could have originated from airborne contaminates. The high level of theobromine without the accompanying methylxanthinines does not give a clear picture as to whether the Emmons mound beaker contained black drink or cacao.
Washburn et al. (2014) conducted absorbed organic residue sampling on vessels other than beakers, suggesting other vessels could contain biomarkers for black drink. In their study they selected bowls, jars, “necked” bottles, duck effigies, an owl effigy, and a mussel effigy.

While the current studies focusing on residue sampling still contain obstacles to confidently state these residues are from Pre-Columbian use and not contaminates, the idea that black drink has...
been detected in beakers from Cahokia have achieved the status of a fact. Madelaine Azar (2018:3) states, “Crown and colleagues (2012) have discovered biomarkers for *Ilex vomitoria* in absorbed residues from Cahokia beakers dating from AD 1050 to 1250, demonstrating the presence and use of this ritual beverage at the site.”

Even though the biomarkers were discovered, only four of the eight samples proved positive with those four in low amounts. Azar builds on this statement that black drink was utilized at Cahokia by suggesting Ramey Incised jars might have been used to process black drink. To date there is no published work where absorbed organic residue has occurred with these vessels. Jessica Miller (2015) uses patterned carbonization to locate carbonization and sooting in Powell and Ramey Incised jars to infer what contents they once held. Miller identifies two modes of cooking, wet-mode and dry mode. Wet-mode consists of the contents of the vessel being heated with water, while dry mode is utilized without water, such as when roasting items. Thirty Powell Plain vessels and twenty-nine Ramey Incised vessels were included in this study. Out of the thirty Powell Plain vessels twenty-nine were indeterminate for exterior carbohydrate patterns with fourteen indeterminate for interior carbohydrate patterns, and one positive for wet mode cooking patterns.

Out of the twenty-nine Ramey Incised vessels twenty-eight were indeterminate for exterior carbohydrate patterns and no wet mode cooking patterns were established. According to Miller during the wet mode cooking method two distinct patterns can be established. The first pattern would occur, “just above the level of the water line… allowing fats and food particles to burn on or within the vessel” (Miller 2015: 174). The second pattern is, “in the interior base of the vessel, where heavier food particles sink and adhere”. Decoction is another method in which the contents of a vessel are prepared through boiling. Miller (2015) associates this cooking
method with plant materials, which would have left behind a carbonized band at the water line, but not at the bottom of the vessel since the materials were not heavy enough to sink to the bottom. Miller suggests this could result from the preparation of, “some sort of beverages such as a tea or medicinal drink” (2015:117). According to these results, four Ramey Incised vessels (of the twenty-nine) showed signs of the decoction method, with nine demonstrating this method from the Powell Plain vessels. The use of patterned carbonization to identify the methods utilized to process the contents inside vessels could be used to support absorbed organic residue results. However, the obstacles of indeterminate data do not support applying this method independently to confirm or reject the hypothesis for vessel contents and usage.

Cherry Valley Residue Sampling

I sampled thirteen beakers and three controls from the Gilcrease Museum, using the Burr method mentioned by King et al. (2017a) and Washburn et al. (2014). This process included abrading a small powdered sample from the vessel interior, normally near the base. The vessel was abraded by a 1/20th dremil bit, and the powder sample was collected on clean white copy paper and then transferred onto clean aluminum foil where it was immediately wrapped and placed into small Ziploc bags. I followed King et al.’s (2017a) and Washburn et al.’s (2014) procedures using cotton balls to swab for airborne contaminants. However, instead of swabbing the museum’s shelves and work areas for methylxanthnine contaminants, I sampled the vessel interior prior to abrasion to determine if the contaminants could be identified. The cotton balls were not cleaned with alcohol prior to sampling, such as in the King et al. (2017a, 2018) study; they were dampened with deionized water to collect the contaminants. Just under half of the beaker samples and two of the controls have been processed through a GC-MS/MS (Gas
Chromatography Mass Spectrometry/Mass Spectrometry) at Rhodes College. The remaining samples and one control will be processed utilizing a LC-MS/MS at the University of Memphis.

As Crown (2018) mentions, particular drinks seem to have specific vessel shapes for their use. The idea of ceramic vessels having a particular shape or possessing the iconography to represent its usage has been identified in other Mississippian and Mayan artifacts. Lankford (2014) suggests that Fortune Noded vessels, as effigies, represent the seed pods of the Datura plant. The vessels in this sense would portray Datura seed pod depictions because of their use as Datura medicine containers. The Mayans also utilized iconography or vessel forms to illustrate vessel usage. Pompa-Gomez et al. (1990) illustrates an elite official holding a cacao tree depicted on a Jadeite plaque. While this iconographic image does not occur on a vessel thought to contain T. cacao, it does illustrate the importance of the cacao plant.

If important medicines such as Datura and cacao are portrayed as effigies and on iconography, what does this say about the lack of Yaupon Holly (I. vomitoria) motifs in Mississippian Iconography? Or is the iconography there, and just misinterpreted? Ethnohistoric accounts (Fairbanks 1979; Milanich 1979) suggest shell cups were used to consume black drink in the sixteenth century. Perhaps instead of trying to identify elements of the plant on ceramics, such as the Datura and Fortune Noded comparison, we should look at the relationship between shell cups and black drink. Shell cups have been identified at numerous polities in the Midwest and Southeast. However, smaller scale polities, without the capability to control the flow of such inalienable wealth items, may have been unable to attain many, if any, of these vessels. Perhaps the next best thing would be to create a ceramic effigy of a shell cup. This effigy could fulfil the same purpose as the shell cup and represent its usage as an important vessel for consuming black
drink. To establish this connection, future absorbed residue analysis should be conducted on shell effigy ceramics, with new information regarding how to account for airborne contaminants.

The single act of identifying methylxanthnine biomarkers in artifacts is not sufficient to claim these vessels contained specific contents. More research is needed in the field of absorbed organic residue in relation to detecting biomarkers in ancient ceramic vessels, before conclusive statements may be posited. Without accurate information, false narratives may sway the ways in which archaeologists interpret ritual and social behavior and apply meaning to vessel usage. Studies such as (King et al. 2017a, 2018) and (Washburn et al. 2014) have indicated that too many influencing factors are currently present in the methods archaeologists and chemists utilize to evaluate ancient ceramic use. Not only are archaeologists discovering the problems associated with identifying black drink in ceramics, but also other ritual plants such as Datura. This does not mean archaeologists should cease absorbed organic residue analysis; however, we should be aware that obstacles do exist and that previous studies may not be as conclusive as once thought.

Due to the lack of written records, inferences of vessel function are often based on shape and modern uses for similar looking vessels. However, this idea has been disproven by the Reber et al. (2010) study of the contents associated with a Moundville ceramic bottle. The conventional hypothesis on ceramic bottles, due to vessel shape and length of the bottle’s neck, is that they were designed to hold and store liquids. However, the Moundville study demonstrated that the particular vessel under examination contained triacylglycerol’s, fatty acids and alkanols, demonstrating that the vessel once held plant and animal remains, probably in the form of a stew. The authors speculated they would discover black drink biomarkers within the vessel due to the inference of the vessel as a liquid container. The idea of attributing function to a vessel due to its form, such as Crown’s (2018) reference to drinks containing particular vessel forms, leads to
presumptions that can bias the interpretations of pre-Columbian usage. While inferences into socio-political behavior based on vessel residues and shape may still be addressed, these inferences should not dominate the ways in which ritual consumption of beverages are interpreted.
Chapter 10
Conclusion

Methodology for Iconography

In this research, I have employed Knight’s (2013) iconographic guidelines to examine elements of six beaker forms and motifs: the double-legged Q, fist effigies, geometric designs, owls, crested birds, and serpents. First, a ceramic corpus of over two hundred and sixty whole beakers, sherds, rims, and handles were assembled for the corpus. From this sample a small percentage of vessels contained iconographic motifs, with the majority of beakers being plain. Individual motifs were categorized and noted for variations and similarities in elements, along with their geographical location. Stylistic elements were compared to similar elements associated with other artistic genre and, if available, interpreted through the literature of representational imagery. Finally, archaeological contexts were investigated to identify possible patterns associated with beaker burial interment.

The association of a beaker with a burial, ceremonial structure, domestic structure, or refuse pit was important, and was noted during the course of the study. Unfortunately, much of the provenience information associated with beakers is lacking, thus limiting the amount of inferences that might be made based on the existing data. If applicable, a natural prototype was identified for the motifs. If a natural prototype was unavailable, then other sources were
investigated, such as mythical narratives and cosmological models. Ethnohistoric and ethnographic accounts were thus heavily relied upon. While these accounts cannot be implied to represent the Mississippian World precisely, they allow educated inferences to be formulated when employed with the other methods. I framed these hypotheses to infer possible meanings based on the recorded iconographic designs. Competing hypotheses were sometimes proposed to bring light to additional interpretations, whether or not they supported the inference. Without this prospective and collection method of identifying iconographic motifs, the inferences would have no weight to them. With the guidelines proposed by Knight (2013), suppositions may help further our understanding of Mississippian belief systems and cosmologies.

Signs of Sodalities

Religious sodalities share similar belief systems and may be identified through Mississippian material culture. Unique groupings of fisted effigy beaker handles illustrate a repetitive artistic theme concerning ritual paraphernalia and their spread via political agendas. The establishment of a large corpus of such effigies thus allows a stylistic study, and an identification of spatial and temporal similarities. Without the formation of a substantial ceramic assemblage used to distinguish the circulation of these effigies the identification of religious sodalities would have been unattainable.

In order for religious sodalities to become established and endure, they require the support of the aggrandizing elite (Dye 2018). However, even with the central support of an elite, a religious sodality would not be able to engage with “foreign” areas without charismatic individuals exerting some degree of influence. One way influence was achieved typically takes place by justifying and legitimizing social positions and powerful offices through narratives of associations and connections with culture heroes and deities through magical feats, and control
over esoteric knowledge others desire, especially if that knowledge is associated with how to navigate the afterlife.

Brown (2004) notes that craft production is achieved by a small, intimate body of artists, i.e., a community of practice, in which individuals begin their training at a young age and learn the skills and techniques necessary to produce ritual items through decades of training. He goes on to state that due to this extensive training, “the number of regionally based styles remained limited” (Brown 2004:117). However, the various beaker forms represented in the American Bottom, Central Illinois Valley, and Central Mississippi Valley suggest this may not have always been the case. Brown states that particular items can be considered canonical forms of Mississippian iconography, meaning that instead of individual expressions, the production of these artifacts followed a strict pattern. One example of this process is the double-legged Q motif at Cahokia and surrounding areas. The number of sites with this imagery is limited, perhaps indicating the existence of a religious sodality that controlled ritual knowledge and its circulation to neighboring polities. Thus, the beaker motif may have helped the sodality maintain control over ritual knowledge.

Based on my examination of iconographic motifs, differing sodalities may be identified in the American Bottom, Central Illinois Valley, and Central Mississippi Valley. These specific sodalities appear to focus on the double-legged Q design, which I argue is a map of the cosmos. These sodalities may have been extant in the American Bottom and Central Illinois Valley, occurring at approximately eight known sites.

Another sodality which I propose, is represented by the fist effigy beaker handle; these may have focused on strength. These are more widespread, occurring at approximately fifteen sites in the American Bottom and Central Illinois Valley, as well as southwest Indiana, southeast
Missouri, and western Tennessee. Fist effigy beakers are not identified in Arkansas, raising questions as to why this region did not participate with this sodality.

The owl effigy beaker sodality only contains three known examples; ESTL, the Schild site, and Brown County, Illinois, and may have focused on the guidance and strength associated with owls. Two other sodalities, which could have been separate or together since they share the same ideology, is the crested bird and serpent sodalities. These motifs both represent the cross in circle motif, with one being the swastika cross in circle. Both of these sodalities may have focused on the obstacles, such as monsters that guarded the entrance to the “afterlife”. The four cardinal directions represented in the cross and circle may be symbolized by the four sacred logs, which may have been associated with this “afterlife”. Local varieties of these motifs exist, suggesting different geographic sodalities could have placed their own spin on how to represent cosmological knowledge.

**Microcosms**

Friberg (2017), has argued that Ramey Incised jars are representations of microcosms. Microcosms are defined as, “images of total cosmic structure made very small” (Lankford 2004:200). She envisions this relationship as being based on curvilinear motifs, which represent, “water symbolism and Under World serpent monsters” (Friberg 2017:6), and scroll motifs expressed as, “associated with a wing/bird Upper World theme” (Friberg 2017:7). Like the double-legged Q design and the cross and circle motifs on other iconographic images described above, Friberg (2017:6) notes that quadripartitioned elements demonstrate the, “nonarbitrary conveyance of cosmological themes.” I argue that the double-legged Q design fits the definition of a cosmogram with its portrayal of elements from the cosmic structure. However, the avian and serpent motifs, fist effigy handles, geometric motifs, and owl effigy signify different aspects of
the cosmos, instead of the entire cosmic structure on a small scale. Unlike Ramey Incised jars, elements of the Above World and the Under Water World are not depicted jointly on these mentioned beakers, suggesting individual pieces of the cosmos could have been just as important as the overall cosmic structure.

*Black Drink*

Current research suggests an association of beakers with black drink based on analysis of absorbed organic residues (Crown et al. 2012; Washburn et al. 2014). This research has led to subsequent publications linking Cahokia beakers with black drink, which has been taken as fact. For example, “Recent analysis of interior carbonized patterns on Ramey Incised vessels suggest that the vessels were used for ritual drink preparation, such as that of the Black Drink made from the leaves of the yaupon holly, *Ilex vomitoria*, (Miller 2015; see also Crown et. al. [2012] for discussion of Black Drink consumption at Cahokia” (Friberg 2017:6). “Crown and colleagues (2012) have discovered biomarkers for *Ilex vomitoria* in absorbed organic residues from Cahokian beakers dating from AD 1050 to 1250, demonstrating the presence and use of this ritual beverage at the site” (Azar 2018:3). And finally, “Black Drink …, was recently detected in drinking beakers from Cahokia by Crown et al. (2012)” (Miller 2015: 177).

I suggest that the identification of black drink biomarkers in beakers may have occurred through airborne contamination (King et al. 2017a, 2018; Washburn et al. 2014). The sample sizes for the absorbed organic residue study by Crown et al. (2012), were small and indicated minute amounts of black drink biomarkers, suggesting the positive tests may have been the result of contaminations. Washburn et al. (2014) conducted a similar study of beakers, which also resulted in positive black drink biomarkers. However, the authors noted that they cannot rule out contaminates for the positive caffeine markers. Until, the obstacles of contaminates are
overcome, all positive black drink results should be questioned and should not be taken as
evidence for black drink consumption at Cahokia or in Mississippian ceramic beakers.

*Ethnohistoric accounts*

Ethnohistoric accounts demonstrate black drink use among historic indigenous groups;
however, inferring this use by Mississippians, away from the indigenous *Ilex vomitoria* natural
habitats, has its difficulties. For inland Mississippians to have consumed black drink at the same
rate as historic groups, they would have needed to maintain their own source of *Ilex vomitoria*
plants, which has not been discovered in the archaeological record. Trade, by itself, would not
have sustained such a high level of consumption. Also, stating that beakers are associated with
black drink because they resemble cups is an inaccurate analogy. Ethnohistoric accounts
repeatedly mention shell cups as the media for consuming black drink. Beakers are not
mentioned in black drink rituals, nor are they illustrated in any of the renderings of the rituals.
Shell cups occur on Mississippian inland sites, as well as shell effigies. I suggest future research
should evaluate these two effigies for possible associations with black drink.

“*Vacant*” Beaker Regions

My research has identified “vacant” areas between the Cahokia and Cherry Valley beaker
regions (Figure 2). This is not to say that there are no beaker sites in between these areas;
however, they are sporadic and contain only a few beakers per site. One of these sporadic areas
is western Kentucky. In my corpus two beakers have been identified from this region, one from
Fulton county and one from the Campbell site, also in Fulton County. This suggests the two
beakers could have originated from the same site. Both beakers are plain, with no fist effigies or
double-legged Q motifs present. Southwest Indiana contains two known beaker sites, Angel
Mound and the Bone Bank site. Both show evidence of the fist effigy sodality, but not the double-legged Q motif. Western Tennessee contains one known beaker site represented in my corpus, the Obion site. However, other beaker sites have recently surfaced, such as the Gray Farm site 40SW1 (personal communication, Kevin Smith, 2019), Mound Bottom (personal communication, Bill Lawrence and Kevin Smith, 2019), the Reelfoot basin (McNutt 1996), and the Snake Creek site (40HR203) (personal communication, David Dye, 2018). The only representation from sodalities in Tennessee, is the presence of a fist effigy at the Obion site. Based on the current discovery of more beaker sites from this area, further research may result in additional sites and other expressions of sodalities focusing on elements of the cosmic structure. I also suggest, these gaps only exist due to limited archaeological research in these areas, and I expect more beaker sites to appear in the future, narrowing or limiting this “vacant” area.

I suggest the double-legged Q design is a map illustrating the path the dead and shamans take along the Path of Souls. In order to transverse this path you need prior strength in the form of stew or soup, contained by the beakers. The need for strength can be seen in the fist effigy handles on beakers. The crested bird beaker along with the entwined snake beaker both contain a cross and circle in the overall design. I argue that the interpretation of the cross in circle as a portal to the upper and lower worlds may be incorrect (Emerson 1989, Lankford 2004; Lankford 2004, 2007). The cross and circle motif may represent a pinnacle location along the Path of the Souls. It is the desired destination, the “realm of the dead”. The cross and circle is also illustrated in the center of the double-legged Q design, nestled inside the “paths”.

The crested bird creature and the serpents, instead of guarding a portal or a line of communication, in my interpretation, protect this pinnacle. In discussing the various media associated with the cross and circle motif, Friberg (2017:5) states, “all of which often depict a
central pole or cross-in-circle motif in addition to motifs representing cosmological characters.”
Lankford (2004:208) notes, “If the designs are cosmological in nature, then the individual
elements probably represent particular parts of the cosmic structure.” These creatures being
identified as connected to the cross and circle motif, demonstrate a connection between the two,
suggesting that if the cross and circle motif is associated with the cosmos, then the creatures
portrayed with them also have that connection. I suggest these creatures are examples of the
obstacles that one has to navigate in order to reach this pinnacle. You need strength in order to
overcome these obstacles and defeat the “monsters”.

The owl effigies may represent a tutelary guide needed to reach the Path of Souls and to
navigate these obstacles. This is why they are frequently found in child burials; they issue
strength and guidance for the journey. I also argue that portals are not needed if you have ladders
to reach the Path of Souls. If the cross in circle motif was in fact a portal, then two ways to
access to the Path of Souls would not be depicted in the same motif. Shell spoons are associated
with beaker interments in order to have a utensil to consume the soup or stew. Shell spoons
would not be needed to consume a liquid such as tea, and are not mentioned in ethnohistoric
accounts of black drink consumption.

Sodalities centering on the guidance needed to reach and navigate the Path of Souls focus
on owl and bird motifs, while the sodality expressing strength, revere the fist effigy handled
beakers. The crested bird and intertwined serpent motifs are important to sodalities concentrating
on the obstacles that have to be surpassed to reach the end of the journey, where one would dwell
forever with the ancestors. The sodalities that focused on the double-legged Q design control the
“maps” of how to reach and transverse the Path of Souls and how to pass the obstacles along the
way. This would be similar to the Egyptian Book of the Dead, in which wealthy individuals
received tips to travel through the underworld and overcome obstacles to reach the afterlife. This may be why the double-legged Q design is focused around Cahokia and is not seen at beaker sites in Arkansas, Indiana, Kentucky, or Tennessee, even though beakers representing other aspects of the “story” are identified at sites in Indiana and Tennessee.

The sodality that controlled this map probably originated at Cahokia and then spread to the surrounding areas through selective sodalities that were able to “pay” for this knowledge. Others were not allowed to possess this sacra, so they focused on other ideologies related to the journey of the afterlife. If the idea that the cross in circle motif is the aspired goal of the afterlife, then the center of Mississippian cosmology focused on the ability to transverse these worlds and surpass these obstacles, repeatedly if you were a shaman, and to reach the land of the ancestors if you were not. This can be seen in parallel to other cultures, where religion focuses on the importance of reconnecting with ancestors. This is the main reason religion exists, to have the knowledge or the power to reach this final destination. It is no surprise that Mississippian ideology would also focus on this belief.

*Future Research*

In 2017, I performed absorbed organic residue analysis on thirteen beakers curated at the Gilcrease Museum in Tulsa, Oklahoma. These beakers are from the Cherry Valley site in eastern Arkansas and were excavated in 1958 by Gregory Perino. Half of the samples were processed with a GC-MS (Gas Chromatography-Mass Spectrometry) and the other half will be processed utilizing an LC-MS (Liquid Chromatography-Mass Spectrometry), these results will be compared and evaluated for black drink, datura, and saturated fats biomarkers. Since these vessels are from the Gilcrease Museum, which King et al. (2018) has shown to contain airborne contaminates for black drink and datura, they will be used to assist in determining the level of
contaminates in vessels from the Gilcrease Museum, and to establish the level of contamination detection. I will also sample whole beakers from the American Bottom and the Central Illinois Valley to determine if beaker use differed per region. This testing will add to the knowledge of beaker sampling and testing methods previously researched by Crown et al. (2012), King et al. (2017a, 2018), and Washburn et al. (2014).

Concluding Thoughts

The results of the comprehensive iconographic analyses, focusing on archaeological contexts, ethnohistoric and ethnographic accounts, organic absorbed residue literature, and stylistic elements, confirm the idea that complications exist with the idea that beakers are associated with black drink. While previous studies have focused on beakers in the American Bottom and Central Illinois Valley, a broad study including the Central Mississippi Valley has not been conducted. Based on the spatial and temporal patterning of iconographic motifs, I argue that religious sodalities associated with the American Bottom and Central Illinois Valley can be identified for southwest Indiana, southeast Missouri, and western Tennessee. This identification allows for new interpretations into the reach of ideologies, possibly originating in the American Bottom.

Based on this new information I argue that knowledge of how to reach and transverse the afterlife was important to Mississippian world views, and that shamans who had this knowledge and could come back from the afterlife would have been highly revered. These journeys’ and the entoptic images they invoked may be illustrated in beakers portraying geometric shapes. The double-legged Q beaker motif was restricted to particular locals around Cahokia, suggesting its importance as ritual paraphernalia to promote elites, who controlled and knew the secrets of this motif. Avian, fist effigy, owl, and serpent beakers played a role in the aspects of reaching and
overcoming obstacles along the Path of Souls. Strength was a major factor in being able to reach
the Path of Souls and to pass the tests one experienced. Shamans needed strength to make their
journeys, and possibly renewed strength after their return to the Middle World. The dead needed
strength, because their body no longer possessed the requisite strength, to make this journey.

One function of beakers was to hold soup or stew that provided the nutrients for this
strength. Men, women, and children were interred with beakers containing a soup or stew they
would consume on their path. Mussel shell spoons were frequently placed in these interments in
order to consume the beaker contents. Sodalities used the idea of strength and the esoteric
knowledge about the Path of Souls to establish and maintain their connections with local and
non-local polities. I suggest that further absorbed organic residue analysis should sample beakers
and other vessels such as shell cups and shell effigies, to better understand their use. However,
sample size and airborne contaminates should be taken into consideration and accounted for
during the testing and interpretation of results.
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