Searching Through Debris: A Mass Analysis From The Carter Robinson Mound Site In Lee County, Virginia

Robert Capps
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SEARCHING THROUGH DEBRIS:
A MASS LITHIC ANALYSIS FROM THE
CARTER ROBINSON MOUND SITE
IN LEE COUNTY VIRGINIA

A Thesis
presented in partial fulfillment of requirements
for the degree of Master of Arts
in the Department of Sociology and Anthropology
The University of Mississippi

by
ROBERT DALTON CAPPS
May 2018
ABSTRACT

The Mississippian period is one of the most widely studied periods in the prehistoric Southeast, but there are areas such as the Mississippian frontier that have not been explored in great detail. Carter Robinson is a Mississippian chiefdom located on the frontier in southwest Virginia during the thirteenth and fourteenth centuries. To better understand the people living at this site a mass analysis was conducted to examine the lithic debris left behind by the people living there. The purpose of this thesis is to identify the degree of tool production at Carter Robinson and to identify areas of tool production, in order to better understand craft production. Meyers (2011) has identified shell bead production at the site and identifying areas of tool production could help further research in that area.
DEDICATION

To my family, who have always supported me in all of my endeavors
## LIST OF ABBREVIATIONS AND SYMBOLS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>Cm(s)</td>
<td>centimeter(s)</td>
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ACKNOWLEDGEMENTS

I would first and foremost like to share my gratitude to the Department of Anthropology and Sociology at the University of Mississippi for, not only accepting me, but guiding my academic career. I consider many of the professors in this department to be both colleagues and friends. I would also like to thank the Study USA program for sponsoring my first field school where I fell in love with archaeology and for helping fund my research for this thesis.

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Thirdly, I want to thank the other graduate students and a few undergraduates who have struggled with me during the process of this thesis. Nikki Mattson and Emily Warner have been an immense help and have given me much needed support over the past year. I also want to thank several former graduate students and undergraduates. There are quite a few names so I will leave it at thank you.
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CHAPTER I: INTRODUCTION

The study of Native American prehistory is important to understand how North America looked before the arrival of Europeans. Mississippian culture represents just one of the many areas of study to establish this better understanding. Archaeologically speaking, the study of Mississippian culture includes ceramics, monumental architecture, burial practices, and lithics, to name a few. To better understand prehistoric native culture it is important to have a better grasp of how cultures, such as the Mississippian (A.D. 900-1550), existed outside of their core areas. These frontier sites can provide useful information that might reflect how cultures move and establish themselves in new areas. Archaeology is multi-faceted and uses multiple lines of evidence to answer complex questions about different groups. This thesis follows this principle in that multiple lines of related evidence are used to address interrelated issues about a prehistoric Native culture.

Carter Robinson is a Mississippian mound site in Lee County, Virginia. It sits on the edge of the Mississippian world in the Cumberland Plateau and was first occupied around 1200-1350 CE (Meyers 2011). The work of Meyers (2002, 2004, 2011, 2014) established that the site was Mississippian based on site architecture (mound, plaza and houses) and ceramic evidence (Meyers 2011). Seven structures have been identified at the site, two of which have been identified as areas of craft production. The craft production areas were identified through the presence of shell beads. Since frontiers have not been studied as much as Mississippian centers like Cahokia, where craft production was
a key part of sociopolitical organization, understanding not only what a frontier is but also the type of production in a frontier is key to this thesis.

There are three reasons why this study is significant. Carter Robinson is a Mississippian frontier site, and studying it should increase our understanding of the lifeways of people that lived on the fringes of the Mississippian world. How different or varied were their lives? How did they interact with local non-Mississippian people? Studying frontiers is crucial to understanding the wider effects of Mississippian culture on people both within its sphere of influence and without. Therefore, looking at any aspect of Native life on the frontier is important. The second reason is that using lithics to interpret lifeways continues to be an important part of archaeology. Lithics refer to the stone tools and debris created from making those tools. Lithics have been used to reconstruct past cultures by attempting to understand the tools they made and how they made them (Kardulias and Yerkes 2003) specifically by studying change in sites over time (Gall and Steponaitis 2001; Kooyman 2000) or throughout a region (Holland 1970; Hranicky and Painter 1993). The production of drills for making beads leaves behind flake debitage that can be studied. Variations in a lithic debitage assemblage through time and space can, along with the incorporation of diagnostic lithic tools, help shed light on the daily activities of indigenous people, such as craft production. The final, and likely the least visible, reason why this study should occur is because of its multidimensionality. What I mean here is that there are several aspects of Mississippian society that are represented in this study. These include craft production (Pauketat 1997), frontiers (Lightfoot and Martinez 1995), lithics in craft production (Yerkes 1983), and lithic mass analysis (Ahler 1989).

Craft production has been understood as an integral part of the Mississippian economy, even if the status of it has been debated (Muller 1984, 1987; Yerkes 1989a, 1989b). Since the
people living at the Carter Robinson site were producing beads it is important to at least acknowledge what type of role craft production may have played in society. This however is not the focus of this thesis, but it does have an impact. For example, if I were to suggest that these beads were used for exchange I would have to back that up with evidence. Work has been done by Thomas (1996) to try and understand the social context of shell beads. Here, however the importance lies not in their physical role, but in how they can represent and/or support evidence of social interaction in combination with other data. In almost every discussion of political economy, craft production plays a significant role. In the case of Carter Robinson the interactions taking place may have an economic tie with the larger Mississippian world that should be explored.

For this thesis craft production plays the most important role, because the tools of this action are the ones being analyzed here. The presence and quantity of lithic drills and beads present at Carter Robinson are evidence that craft production took place. By analyzing these drills, beads, and the flake debitage from tool production, it should help us to understand the status of craft production at the site and the Mississippian frontier. By first understanding how craft production has been studied and interpreted at major sites like Cahokia as well as at other frontier sites will help in the analysis and understanding of the lithics from Carter Robinson.

This thesis examines the production of lithic tools for craft production. Using a form of mass or aggregate analysis I examine the lithic debris to determine not only how much lithic production occurred, but also where it occurred. By extension I will look at the types of material that are being used and the types of tools being made. All of these data will allow me to compare the different structures at the site and compare them over time and space. This research will then open doors for greater interpretation on concepts such as craft production. If tools are being
made or used in the same areas where craft goods are found then that would follow logical lines of thought. On the other hand, if craft goods are found in differing locations from where tool production and use are taking place, then what does that mean for Carter Robinson?

The following chapters will address the issues pertaining to lithic tool production and the site history of Carter Robinson. Chapter II is a literature review of all the relevant topics that affect this thesis and Carter Robinson. Chapter III discusses lithic analysis and states the research question for this thesis. Chapter IV details the methods used both in the field and in the lab to conduct the research for this thesis. Chapter V displays the results of my analysis. Chapter VI discusses conclusions about my research at Carter Robinson and suggests future avenues for similar research.
CHAPTER II: LITERATURE REVIEW

Carter Robinson is located on the fringes of the Mississippian World. Mississippian refers to a cultural period (A.D. 1000-1600) (Blitz 1993: 34) of the American Southeast during which complex societies and large urban centers emerged and flourished. These societies, often described as chiefdoms, were present in various forms throughout the region. Archaeologists have been studying this region for over half a century and have made major inroads in the interpretation of the Mississippian period culture. This includes events of daily life such as politics, economy, belief systems, and material culture. In order to understand how Carter Robinson fits into this wider framework it is important to first understand the framework itself.

One of the more relevant terms in Mississippian archaeology is the idea of the chiefdom. Chiefdoms are loosely defined as pre-state societies with regional control of populations numbering in the thousands with some degree of social ranking, stratification, and complex economic and ritual elements under the control of a powerful leader (Cobb 2003, Earle 1989). Elman Service (1976) and Morton Fried (1968) were the first to place chiefdoms in a scheme of sociopolitical development. For Service (1975: 15-16), chiefdoms represented the middle ground between states and tribes and for Fried (1968: 466-468) they represented a ranked, but not a stratified society. The difference between a ranked and a stratified society is that, “a rank society operates on the principle of differential status for members with similar abilities….meanwhile, the stratified society is distinguished by the differential relationships between members of the society and its subsistence means.” (Fried 1968: 469-470). Timothy Earle (1989) identified com
monalities among chiefdoms in various locations around the world that included the creation of legitimacy, improving infrastructure of subsistence, such as larger scale agriculture, and control of wealth. David Anderson (1994) notes that the concept of chiefdom is not monolithic, but is variable. Anderson also notes the use of combinations of scalar and organizational models in more recent definitions of the term (Anderson 1994: 7-9). In other words, there are different scales of chiefdoms, which combine with different levels of hierarchical control. For Mississippian society, this would manifest as the differences between simple and complex chiefdoms. Because the chiefdoms are the predominant social organization during the Mississippian period, some of the aspects of chiefdoms listed above deserve more detail, namely politics, economy, and ideology.

In chiefdom societies, elites do not have true coercive authority such as a dictator might, but they do have the ability to influence people’s actions through control of certain goods (Earle 1991b: 6). There is also some degree of social stratification in chiefdom societies. Earle (1987: 290-291) notes that stratification in chiefdoms can be twofold: rank and status or differential access to goods. Rank could be determined in war, which is common in chiefdom societies. Sullivan (2006: 265) notes that different social contexts can affect the way rank is determined. These social contexts can include areas such as gender. Differential access to goods can relate to either food surplus or materials for craft production (Earle 1987). Archaeologically, the presence of an elite status is identified in burials as well as settlement patterns and the presence of monumental architecture, (Steponaitis 1986: 389-390). Peebles and Kus (1977) give a specific example of archaeological evidence from burials. They note that elites must be identified by more than just ornate burials; they must also be identified by the symbolism that comes with being in a higher class (Peebles and Kus 1977: 431).
Chiefdom economies are directly linked to chiefly power. Chiefdoms were once thought of as redistributive societies, but closer examination has called that into question. Service (1975: 75) stated that chiefdoms were redistributive and defined redistribution as a perpetuation of chiefly power; he notes that “sedentary chiefdoms normally inhabit areas of variegated natural resources, with numerous ecological niches requiring local and regional symbiosis.” Instead Earle (1987) suggests a more managerial role of chiefs in economic systems. Chiefdoms suffer from logistical problems, such as infrequent feasts, that would render true redistribution unlikely (Earle 1987: 292). He suggests that elites exert control over staples and exchange of goods through ownership. One example of this would be the control of food surplus or land. Craft production in hierarchical societies has been characterized as a form of power, in which chiefly powers may have directed production and trade of non-utilitarian goods for trade or wealth (Earle 1991a).

Ideology refers to cultural systems of belief. Earle (1987: 299-300) identifies three areas of ideology as it pertains to the two topics above: ceremonies of place, symbols of individual position, and warrior motifs. Ceremonies of place are ceremonies that create sacred landscapes; it predicates the creation of things like monumental architecture (Earle 1987: 299). This creates sacred space. Symbols of individual position are akin to chiefs connecting themselves to divine power, while warrior motifs, “smooth succession to power as a continuity of the natural world order” (Earle 1987: 300). These latter two ideas are often demonstrated in burials. There is an underlying relationship between ideology, economics, and politics. Chiefs draw power from ideology, which allows them to make decisions in both politics and economics (Earle 1991b: 7). Items like shell beads likely had an ideological role and were symbols of position.
Mississippian chiefdoms have long been the subject of archaeological study. The term Mississippian was first coined by James Griffin in 1952. Griffin (1952: 361) notes that the Mississippian period was one of cultural expansion, beginning with the construction of large pyramidal mounds, which came with new social dynamics and more extensive agriculture. Other early interpretations (Holmes 1903) of what was Mississippian were focused on artifact typologies, but were replaced by more processual ideas to include maize agriculture (Peebles and Kus 1977: 434) Mississippian societies existed from about A.D. 1000-1600 although there is some slight variation across the region (see Anderson and Sassaman 2012; Blitz 2010; Hollis 2005) The Mississippian world is centered in the southeastern United States, but extends outside of this region and includes areas of East Texas, large portions of Illinois, southern Indiana, through Kentucky and into the Carolina piedmonts (Pauketat and Alt 2015: 8). Peebles and Kus (1977) use Moundville as an example of a Mississippian chiefdom. In this example they point to, “large ceremonial centers and their associated platform mounds, shell tempered pottery and various diagnostic pottery types…..iconographic motifs, and full efficient maize agriculture.” (Peebles and Kus 1977: 434) as evidence that Mississippian cultures were organized into chiefdoms. More recent interpretations of what Mississippian is and how it came to be are more varied (Anderson and Sassaman 2012; Blitz; Cobb and King 2005; Pauketat and Alt 2015; Wilson 2017). The idea of Mississippian has been widely critiqued (Blitz 2010) for being too strict a concept, in that people have often tried to fit the idea of Mississippian into a set box. Bruce Smith (1990b: 2) notes that Mississippian is not just about people but about ideas. Smith (1990b: 3) explains that by using such a term we create nested boxes that are helpful, but remain problematic, because they are closely interrelated with other boxes.
Mississippian political systems are, as explained in the definition of chiefdoms, centered around a ranked hierarchy. One of the ways this is demonstrated archaeologically is through mortuary practices. Elites were often buried with ornate objects, while commoners were buried in simple graves (Steponaitis 1986: 389). This hierarchy can also be seen in monumental architecture. Mounds are thought of as evidence of settlement hierarchy and are synonymous with Mississippian settlements (Steponaitis 1986: 390). Cobb and King (2005) note that, though the construction of mounds did vary across the Mississippian region; they were often the seat of chiefly power, but served other purposes such as places for burials. Chiefs, or in larger chiefdom centers elites in general, lived atop platform mounds, often with plazas, were buried within them after death (Bowne 2013: 34). Lewis and Stout (1998) call this architectural grammar. Architectural grammar is, “the rules by which elements were combined in architectural expression” (Lewis and Stout 1998: 2). Mississippian societies were also matrilineal, meaning that ancestry was traced through the mother’s family (Bowne 2013: 41).

The Mississippian economy is based on maize agriculture and for some chiefdoms the production of trade goods. Maize agriculture represents the major portion of the Mississippian food economy, although this was supplemented by hunting (primarily white-tailed deer) and gathering. Originating in Mexico, maize became the main crop for much of the Mississippian world by A.D. 1000 (Gremillion 2011: 393). Maize has a high caloric value, but is poor in other nutrients such as protein, which is why Mississippian people continued to exploit items such as beans and native seeds (Gremillion 2011: 394). The production of trade goods represents the other half of Mississippian economies. Paul Welch (1991) and Jon Muller (1984, 1997) studied the production of trade goods, and this is discussed in more detail below.
Welch (1991), used a specific case study at Moundville to demonstrate Mississippian political economy. At Moundville, craft production was a twofold process: non-utilitarian and utilitarian were created. Non-utilitarian goods were centrally controlled from production to access, while utilitarian goods were produced and used in the household (Welch 1991: 177). Welch’s model is known as a prestige goods model, which is different from a mobilization or a tributary model. A mobilization model is based on subsistence goods, in which subsistence goods travel from domestic units to the paramount center (Welch 1991: 14-15). A tributary model deals with prestige goods, similar to the prestige goods model. The difference here lies in that the craft items produced are not mutually exclusive, and all areas receive the same item from the paramount center, but the control of those items are maintained by the nobility (Welch 1991: 17-18).

Mississippian ideological studies focus on Southeastern religion. King (2007a) cites Brown’s three networks of social power which include cult paraphernalia, the conceptual core, and mortuary temples. Cult paraphernalia is represented by “symbols, badges, and other art motifs including sociotechnic artifacts like ceremonial maces, celts and chert blades.” (King 2007b: 5). The conceptual core is composed of a network of power focused on the relation between the falcon, warfare, and possibly specific roles of war (King 2007b: 6). The mortuary temple concept centered on “stone figurines and skeletal art motifs, human masks, and head pots.” (King 2007b: 6) Each of these comes with its own series of motifs and symbols, such as ceremonial maces, falcon symbolism, and stone figurines respectively (King 2007b: 5-6). Another important detail here pertains to the ideological role of trade goods. Trubitt (2003: 243-244) notes that marine shell was used for many reasons and that these reasons are not fully
understood. She attempts to remedy this by claiming that the exchange of shell prestige goods was key to the upkeep of the Mississippian hierarchy (Trubitt 2003: 249).

Welch’s study of Moundville can be related to core/periphery theory (Stanley and Alexander 1992: 22-34). Related to Wallerstein’s (1974) world systems theory, core/periphery theory suggests the core is an area of concentrated power, which acts upon and takes advantage of peripheral societies. Hollis (2005) used a modified version of Wallerstein’s theory to explain contact and incorporation using the Mississippian culture as an example. In her study Hollis notes that the “core” areas, such as Cahokia, began to decline starting in 1300 AD due to a variety of factors including warfare, over population, and migration, coupled with, “increased self-sufficiency in the peripheral areas” (Hollis 2005: 100).

These peripheral areas are also known as frontiers. Lightfoot and Martinez (1995) note that frontiers are not just boundaries and territorial markers, but that these edges are “socially charged where innovative cultural constructs are created and transformed” (Lightfoot and Martinez 1995: 471). In addition, Parker (2006: 77) calls frontiers, “dynamic and often unstable zones that exhibit a marked degree of variability through space and time.” Frontiers are zones of cultural interfaces within which overlapping social groups or communities exist; these groups then in turn “innovate cultural constructs” (Lightfoot and Martinez 1995: 471-472). In terms of the Mississippian frontier, it has been described as “a geographic area along the edge of advancing or retreating wave fronts of Mississippian forms of organization” (King and Meyers 2002: 114). The term periphery has often been used in context with frontiers, and often assumed to mean the same thing. For the Mississippian world, King and Meyers (2002:114) explicitly differentiate between frontiers and peripheries where peripheries are defined as “physical
margins of the larger area dominated by Mississippian societies, areas where Mississippian chiefdoms did not exist.”

Mississippian frontier sites existed all along the boundaries of the Mississippian World. Because Carter Robinson exists in one of these boundary regions it is important to understand what Mississippian frontier culture looked like. Jefferies et al. (1996) describe such a frontier area in southeastern Kentucky and they (1996: 1) note that while maize is traditionally viewed as a foundation for Mississippian development (e.g. Smith 1990a), this is not the case for frontier areas. Jefferies et al. (1996) notes a lack of large floodplains present in southeastern Kentucky, and instead finds evidence for a more varied diet that included a greater diversity of botanical resources such as nuts and a greater usage of smaller animal game. Jefferies et al. (1996) also identify evidence of interaction between Mississippian and Fort Ancient people, another group that lived on the northern edge of the Mississippian world. Some Fort Ancient sites are as close as 50 km to Mississippian sites. Fort Ancient peoples exploited a greater diversity of food sources, a less complex social hierarchy, and their settlement pattern was more egalitarian (Jefferies 1996: 3). Other aspects of Fort Ancient culture included limestone tempered pottery, rectangular shaped houses, autonomous villages with small camps, and locations in the middle Ohio River Valley (Henderson and Pollack 2001: 174-175). Clay (2006) also examined the Kentucky frontier and he critiqued the nature of interpretation in the Mississippian hinterlands. He states that archaeologists overlook small sites in favor of major Mississippian sites, which then have the effect of over-influencing the region and interpretations of Mississippian culture (Clay 2006: 60). By this he meant that large regions are defined by a single major site, which does not allow the recognition of variation present in smaller sites. These smaller sites can give
supplemental information, such as “mound stage contemporaneity”, for large site reinterpretation (Clay 2006: 60-61).

Other Mississippian frontiers include the Lower Chattahoochee Apalachicola River Valley and the Lower Illinois River Valley. Delaney-Rivera (2004) challenged previous notions of Mississippian society in the Lower Illinois River Valley which claimed that the inhabitants were Late Woodland cultures that occasionally traded with Mississippian people. Delaney-Rivera (2004: 41-44) shows that these were Mississippian colonies that underwent a process of acculturation. As Mississippians moved into the area to farm others moved in to trade. As trade relations grew and new settlements were founded, a new Mississippian perspective grew as well (Delaney-Rivera 2004: 43). Blitz and Lorenz (2002) use the Lower Chattahoochee and Apalachicola River Valleys to explore differences in community development. One of the major points that Blitz and Lorenz (2002: 117) makes is that even though Mississippian commonalities exist throughout the Southeast each community has a complex history. The complex history they explore here is the dichotomy between local development of Mississippian culture and migration of Mississippian people. They (2002: 130) use evidence of differential artifacts and settlement patterns from the Rood, Wakulla, and Averett cultures to reject different hypotheses of Mississippian development and show that the Mississippian Rood culture, “originated as a series of occupations by Mississippian immigrants in a vacant or sparsely inhabited frontier zone between Averatt and Wakulla settlement clusters.” (Blitz and Lorenz 2002: 130).

As a frontier site, the inhabitants of Carter Robinson interacted with non-Mississippian groups to some degree. In southwest Virginia this is the Late Woodland Radford culture. This culture was present in Virginia from A.D. 900-1600, and consisted of egalitarian tribal groups who lived in villages with circular patterns, lacked mounds, and had a mixed hunting/gathering
subsistence (Egloff 1992). They are defined in part by the presence of limestone-tempered pottery with plain or cordmarked designs and a limited number of vessel forms. In addition to the Radford culture, there were Mississippian groups located in nearby eastern Tennessee (Webb 1938; Meyers 2005) as well as Pisgah cultural groups in western North Carolina (Dickens 1976; Keel 1976). Pisgah refers to a culture that existed in the Appalachian Summit region during the Mississippian period and had a distinctive pottery style (Dickens 1976). The pottery and house styles at Carter Robinson are very similar to those found in the Norris Basin, and distinctive from those of the Radford culture, which included limestone-tempered pottery and round houses. In addition, some Pisgah ceramics have been found at Carter Robinson (Meyers 2011: 271). The work at Carter Robinson generally supports Holland’s (1970) theory that southwest Virginia was a cultural crossroads for multiple groups of people.

**Carter Robinson**

Carter Robinson is located in Lee County, Virginia along the Mississippian frontier. Figure 1 below shows Carter Robinson’s location in terms of geographic setting. Meyers (2011) demonstrated that this is a Mississippian settlement and she categorized it as a simple chiefdom based on the presence of a platform mound, shell-tempered pottery and single-set post structures (Meyers 2011). Carter Robinson was occupied from around 1200 to 1350 CE (Meyers 2011). To date, Carter Robinson has been excavated over a series of seven field seasons. The results of this work will be described in more detail in Chapter III. Briefly, remains of seven house structures have been identified at the site. There is also evidence of craft production of shell beads in some of these structures. The creation of the shell beads was done using lithic tools, primarily drills, found in context with the beads and shell waste.
Craft production, as noted above, was an important part of many Mississippian societies. Craft production can be defined as the process by which a product is created, either for personal use or exchange (Yerkes 1983). Craft specialization, as it relates to craft production, is the process by which products are created by specialists for the consumption of elites (Yerkes 1983). As previously mentioned, evidence of craft production has been discovered at Carter Robinson. Though Mississippian craft production is often discussed in terms of shell bead production, that is not the only craft production present at the site, nor is it exclusive to the Mississippian period.

Figure 1. Location of the Carter Robinson Site. (Meyers 2011: 6)
Any craft item such as non-shell beads or beads made from other material would also fall under this category. Bead production has also been found at Archaic sites (Johnson 2000).

One of the largest debates about craft production and craft specialization is the Muller/Yerkes debate. Yerkes (1989a) viewed craft production as central to the economic structure of Mississippian people and as something important to elites. Using Cahokia and the American Bottom as his example, Yerkes, using microwear analysis, has shown that a special microlithic technology associated with Cahokia was used to create shell beads (Yerkes 1991). Finally, Yerkes (1989b: 100-103) notes that shell bead production was the only kind of craft specialization done in the American Bottom region, and suggests it could have been used first as money and then as tokens of wealth. To determine the presence of craft specialization Yerkes used criteria created by Evans (1978: 115), which included specialized areas for craft production, specialized tool kits, exchange networks for raw materials used to create products, and differential distribution of goods (Yerkes 1989b: 94).

By contrast, Muller (1997) thinks that while it is possible for specialization to be present in chiefdom societies, the evidence is not overwhelming for Mississippian groups. Muller (1984) critiques the idea of specialization using the procurement of salt as his example. Muller notes that salt production at the Great Salt Spring, though being a type of specialist production, does not necessarily support a notion of elite control (Muller 1997: 329). He states, “the idea of ‘specialists’ linked by redistribution and mutual cooperation through chiefs seems less than adequate” (Muller 1984: 484). He calls for a restriction of the term specialization. Unlike Yerkes and Muller, Meyers (2011) suggests that instead of a fulltime craft specialization there is a part time craft production which may have been a frontier adaptation.
Some examples of Mississippian craft production outside Cahokia can be found at Labras Lake and in the Yazoo River Basin. At the Labras Lake site, which contained lithic assemblages from the Archaic, Woodland, and Mississippian periods (Yerkes 1987) Yerkes conducted a microwear analysis on all three time periods. His work showed that activities changed at the site over time, but that the actual technology did not change much between the Archaic and Mississippian periods, with few exceptions (Yerkes 1987: 185) For the Mississippian period Yerkes did note that the settlement was self-sufficient with some specialization. Another place where evidence of craft production has been found was at the Carson site in the Yazoo River Basin. Mehta et al. (2016: 471) in their study of craft production at Mound D at Carson, make the claim that there has not been enough attention paid to the actual items being produced by craft production. Their stance is that most of the attention is directed towards the tools of production. They give a definition of craft production that leaves room for a spectrum of meaning such as the possibility of both full time or part time specialists, so as move beyond the Muller/Yerkes debate (Mehta, et al. 2016: 473).
CHAPTER III: RESEARCH QUESTION

One of the earliest studies of lithic technology was done by William H. Holmes in 1891, but it wasn’t until the 1960s that lithic studies became prevalent. Initially early forms of lithic analysis included the creation of lithic artifact typologies. These typologies were physical descriptions of artifacts and their relationships to certain time periods and cultures. Over time lithic studies changed to look more in-depth at lithic production methods or ventured into new methodologies. Crabtree’s flintknapping studies showed it was an important tool in lithic research (Kooyman 2000: 6). Sergei Semenov’s pioneering work in use-wear analysis added another facet to what could be discovered about lithic tools (Odell 2004: 8). More recent studies in lithic analysis include interpretations on human behavior, such as work on hunter-gatherer mobility (Odell 2004: 9-10).

Lithic analysis in the Southeast follows this pattern. Mississippian lithic studies were initially focused on creating large sweeping typologies, which still exist today. Lithic analyses then transitioned to the other types of studies mentioned above. One of the major contributions of lithic studies, outside of form and fracture mechanics, in the Mississippian period has been craft production (see Mehta et. al 2016, Muller 1997, Yerkes 1987). The data used by people studying Mississippian craft production is in part a study of lithic tools. Yet, as some scholars have pointed out, lithic studies in Southeastern archaeology have gone by the wayside (Bradbury, et al.: 2012). They also make the point of describing a series of strategies, including economic, social, and technological, that are useful in lithic studies (Bradbury, et al.: 2012) I would like to
make a quick note here about archaeological studies in the Southeast in general. In the past
decade, there has been an attempt to address problems and summarize perspectives in
Southeastern archaeology (Anderson and Sassaman 2012: Blitz 2010). More specifically there
has been a move to correct older paradigms and address the lack of certain types of studies
(lithics) used to describe southeastern cultures. This only increases our understanding of
Southeastern cultures.

One useful type of lithic analysis, mass analysis, allows researchers to move beyond
typologies and understand the process of lithic (and craft) production. Mass analysis is the
process of running lithic debris through a series of progressively smaller screens in order to size
grade the lithic debitage (Kooyman 2000: 62). The flake and shatter is then weighed and
counted. This allows the researcher to better understand the reduction process of tool production.
The purpose of mass analysis is to study large patterns of lithic production, rather than studying
the end product. This can give a more complete picture of what is going on at a site and is a
valuable technique because “flaking debris provides a seemingly direct link to discrete episodes

Archaeology has had long-lasting impacts on our understanding of past cultures.
Chiefdom studies are in part a study of the formation and continuation of inequality in human
society. One of the ways in which this inequality is manifested is through organization of labor
and by extension, craft production. Craft production was an important part of Mississippian
economies and therefore political control. Shell bead production, like that studied extensively at
Cahokia, is larger than just the beads themselves and includes the tools of production. Areas on
the Mississippian frontier may have used craft production as a way to bolster their economies.
This study focuses on the lithics used in craft production and compares them by across space and time by household to identify the process of tool production and identify any evidence of change over time in that production. In this thesis I have two goals. The first goal is to understand the daily activities at the Carter Robinson site by reconstructing its tool kit. This includes the identification of tools, the types of materials used, and the lithic debris evidence that comes from tool production and tool use. The second goal is comparing these activities across households and over time to see if any differences exist. This is done by isolating the items detailed above, and comparing them across six structures. These differences will provide a picture of what craft production looks like on the Mississippian frontier along with adding to the understanding of the site history of the Carter Robinson site itself.
CHAPTER IV: METHODS CHAPTER

The lithic debitage studied here was recovered during a series of field school excavations held in 2007, 2008, 2013, 2015, and 2017 at the Carter Robinson mound site in Ewing, Virginia. The data for this thesis are from Blocks 1, 2, 3, and 4. Each block was excavated at various times during the five field seasons and these excavations will be explained in detail below. The general field methods for the excavation of these blocks, including features, zones and middens, were similar and are discussed below.

Block locations were selected through geophysical scanning and limited shovel testing (Meyers 2011: 136-138). Each block started as a 1 x 1-meter (m) test unit, with the exception of Block 2 which was one large 4 x 4-m unit. Each unit was excavated in 10-centimeter (cm) arbitrary levels to variable depths, usually between 30 and 40 cm, which was shown to constitute plowzone fill in every block. Once plowzone depths were established, later test units had the plowzone removed and screened as one level. After the plowzone was removed test units were excavated by trowel to reveal features. The soil from each layer was screened using 1/4" hardware mesh. Limited water screening through 1/8” mesh and some flotation of select feature materials was done during the 2007 and 2008 excavations.

For this thesis all lithics associated with blocks were examined. These artifacts were recovered from plowzone, midden and house floor layers and features. House floor layers and features were excavated by cultural zones. Cultural zones were different soil layers distinguished from one another by color and texture within a feature. Any zone that extended beyond a depth
of 10 cm was excavated as separate layers within that zone. Artifacts from the mound and shovel tests were not examined for this thesis. Though the mound excavations and many shovel tests contained evidence of structures and/or occupations, this thesis focused on comparison of lithics between non-mound households. As stated, flotation of select features in many of the blocks was done but lithics recovered from flotation are not included in this analysis because not all features had flotation samples taken.

Field Methods

In this section I will discuss specific block excavations for Blocks 1, 2, 3 and 4 (Figure 2) and contexts relevant to this lithic analysis. As previously stated, four blocks were excavated during field schools from 2007 to 2017. Shovel test pits were placed at 10-me intervals along a series of arbitrary transect lines labeled A through L. Shovel tests were done initially in 2006 to determine site limits, and expanded in 2007 to identify site boundaries (Meyers 2011: 138). More shovel tests were conducted in 2013 and 2015. The datum from which the shovel tests were conducted was placed on the northeast edge of the mound and designated N1000 and E1000. In addition, nine 20 x 20-m grids were placed around the site based on shovel test pit (STP) results and landforms (Meyers 2011). Geophysical survey included magnetometry and GPR, which were used to identify probable locations of intensive occupations.

Block 1 was excavated in three of the five years that field schools were conducted. The majority of Block 1 was excavated in 2007 and 2008, and a smaller additional northern section was excavated in 2013. The 2007 and 2008 excavations are discussed together because the excavation covered the same test units. Block 1 is located 10 m north of the mound. Block 1 started with seven 1 x 2-m test units in 2007. After these initial test units were excavated a
backhoe was used to strip plowzone from an 8 x 7-m area. A 1x1-m grid was laid across the block and each test unit was cleaned and mapped (Meyers 2011). In 2008 there were eight more 1 x 1-m test units added to the block; in total, 117 1 x 1-m test units comprise Block 1. Features

Figure 2. Carter Robinson site map showing locations of block excavations (Meyers 2011: 142).
were visible below the approximate 30-cm plowzone. In total in 2007 and 2008, 186 features, including 149 postholes, one hearth, a pit, a shell bead production area, and 35 trench lines (Meyers 2011: 193) were uncovered. At this point it became clear that there were at least two structures within Block 1. Structure 1 is located in the western half of Block 1. There were three distinct features associated with this structure: two burned areas, a midden, and a series of posts making up portions of a wall north and south of the area (Figure 3). Structure 4 is located in the northeast portion of Block 1. Some of the features associated with this structure included a pit and a hearth. In 2013 the northeast section of Block 1 was extended and encompassed 20 additional 1 x 1-m test units. Like earlier excavations of Block 1, the plowzone was approximately 30 cm deep and after removal test units were cleaned, mapped, and photographed. A total of 108 features were uncovered in 2013; 87 of these were excavated. These features included more posts and a pit feature. Ongoing analyses of Block 1 and Block 1 extension indicate this area is a shell bead production workshop (Meyers 2017) (see Figure 3).

Block 2 was excavated in 2007 and 2008. Block 2 is located northeast of the mound and contained evidence of Structure 3. This 4 x 4-m unit was excavated in arbitrary 10 cm levels. The plowzone of Block 2 was about 35 cm below surface. In 2008 a series of seven additional 1 x 2-m units were excavated east of the original block after the edge of a trench feature was uncovered there; ultimately, Block 2 encompassed a total of 32 1 x 1-m test units. Plowzone from these seven test units was removed, but not screened. Units were cleaned, mapped, and photographed. A structure, whose west edge was identified in 2007, was more fully exposed. There were a total of 46 features in this block; of these, 42 were posts. (Meyers 2011) (Figure 4).
Figure 3. Plan View of Block 1 and Block 1 Extension, showing location of Structures 1 and 4 (Meyers 2011: 194).
Block 3 was excavated in 2007, 2008, and 2017. Block 3 is located northeast of the mound on a small rise about 85 meters from the mound (Meyers 2011: 221). In 2007 Block 3 started as ten 1 x 1-m test units based on geophysical testing that suggested cultural features were located there. These test units were excavated in arbitrary 10-cm levels. Five of these test units contained burned wood fragments (Meyers 2011: 222). In the 2008 field season, Block 3 was enlarged to a 6 x 6-m area. This uncovered more burned wood, a hearth, and postholes. Two test units, 8W ½ and 9, were excavated to subsoil in 2008. These excavations revealed three structures or occupations separated by midden. Test unit 163E was excavated to just above the earliest occupation and test unit 172N was excavated below the hearth dating to the earliest structure (Meyers 2011: 222). A total of twenty features were uncovered. Of these, the fourteen
that were excavated included posts, pit features, and a trench. There were an additional three features that were only partially excavated (Meyers 2011) (Figure 5).

Figure 5. Plan View of Upper Structure in Block 3 (Meyers 2011: 239).
In 2017 Block 3 (Figure 6) excavation focused on the second occupation layer, now labeled Structure 2b. At this time, only the eastern half of the original block was excavated, with three additional test units placed on the original northeast edge of the original block. One posthole was

Figure 6. Plan View of Structure 2b, Block 3.
present in the 2017 eastern test unit. The test units that were excavated focused on removing the midden, labeled Zone 46, and revealing portions of the second occupation. These excavations revealed a new series of postholes, a collapsed wall of daub, burned wood, as well as structure floor. Analysis of this structure is ongoing.

Block 4 was excavated in 2015 (Figure 7). Block 4 was a 4 x 4-m area, located approximately 100 meters south of the mound. Block 4 began as a series of 1 x 1-m units placed.

Figure 7. Plan View of Block 4 (Warner 2018: 33).
in a checkerboard fashion. The first five units were excavated in arbitrary 10-cm levels, which
identified the depth of the plowzone at about 40 cms. Remaining test units removed the
plowzone as a single level. Then, the entire 4 x 4-m block was cleaned, mapped, and
photographed. Block 4 contained the remains of a sixth structure. A large central hearth, two
large corner posts, and several smaller posts, as well as a midden pit were found. A total of
fourteen features were uncovered in Block 4, of which thirteen were excavated.

**Lab Methods**

The lab methods for this thesis are loosely modeled after Ahler (1972), with a focus on
studying all stages of lithic production instead of a focus on the end product. Mass analysis is a
useful method of doing this. Mass analysis methods include weighing and counting lithic
debitage created through the process of lithic reduction, such as flaking. This provides the ability
to reconstruct stages of lithic production. Mass analysis entails screening lithic debitage through
a series of nested screens, which separate the debris by size, and each size is counted and
weighed. Based on other uses of mass analysis (Ahler 1989, Johnson 1981, Kooymans 2000, Hall
and Larson 2004) the following screen sizes were used: 1.0 in, 0.5 in, and 0.25 in. Though Ahler
does use these same size differentials for hardware cloth, he also used a 0.06 in screen and used
sieve cloth of different sizes (Ahler 1989: 100). A 0.06 in screen was not used because it was two
screen sizes smaller than what was used in the field, therefore the likelihood of there being
anything recovered that small is unlikely. Lithics were also hand-screened to improve accuracy,
by allowing long thin flakes that may not have passed through horizontally and other lithic
debitage not oriented correctly in the screens to pass to their appropriate size level. Hand
screening is taking individual pieces of flakes or shatter and changing their orientation in space to get them through the gaps in the screen. Some bags were already separated into flake and shatter categories, but these were double checked for accuracy. If a bag had not been separated into flake and shatter they were separated before running the debris through the screen.

One difference between my use of mass analysis and Ahler’s is that I did not do a discriminant statistical analysis. Instead, I used cumulative proportions and OGIVE graphs, along with spatial distribution maps of density to show how the lithic debris is distributed by structure. This compliments the size grade analysis by attempting to show where tool production, retouch and tool use may have occurred. I also size graded cores and core fragments and kept track of their distribution. Cores were identified using the presence of flake scars. This allowed me to identify multiple lines of evidence to show where lithic tool production occurred.

For any lithic analysis a flake is a piece of lithic debris with a bulb of percussion, compression waves, a flake scar, a striking platform, ventral and dorsal surfaces, proximal and distal ends, and an arris. (Kooyman 2000:12-14). A flake need not have all of these characteristics per se but will likely have most of them. Shatter consists of the rest of lithic debris that does not contain most of a flake’s characteristics (Kooyman 200: 14). This includes signs of angular fracture and heat fracture. Angular shatter represents blocky chunks that break off in the process of lithic production (Johnson 1981: 101). Heat fracture occurs when a piece of chert or other stone material is heated in a fire. If there is moisture present in pre-existing cracks within the rock the heat causes the moisture to expand, which causes pieces of stone to pop off. This process is manifested by a small circular depression on the piece of shatter, where the pressure builds before breaking off. Thermal fracture can also occur when hot stones are placed in cold water. These two types of shatter are not differentiated in the analysis, because it is not important
for this thesis what the method of shatter creation was. It can also be difficult to confirm heat treatment if the original core was worked on after that process.

Raw materials were recorded as screening was taking place. Raw material will be discussed in greater detail in the analysis chapter. Through the process of screening the flakes and shatter, temporally sensitive artifacts (e.g. projectile points) that had not been previously separated from the lithic debris were recovered. These were not weighed or size graded, but they were recorded. These artifacts were used to further identify possible locations of lithic tool production and use. These diagnostic artifacts include projectile points, drills, scrapers, etc. which were separated by provenience.
CHAPTER V: ANALYSIS

The first goal of this analysis is to better understand the lithic tool kit at the Carter Robinson site. Studying lithic debris can answer any number of questions. Here the questions being answered are: what and where. What types of lithic production were going on and where was this production occurring? To a smaller degree there will also be a question of identifying material type and source. These questions help us to understand the activities of daily life for prehistoric native people at the site. The second goal is to understand the relationship of these tools and the lithic debris in terms of human action in households and how they changed over time. The second goal will be accomplished by comparing structures from each time period of site occupation. In order to accomplish these goals a mass or aggregate analysis was done, whose methods were described in the previous chapter.

In this chapter I present and interpret the results of mass analysis. First I will present the results of all the lithic analysis at the site, followed by a description of the lithic material itself in order to identify the tool kit present at the site. Next, I examine lithics within each structure at the site. Of note, this analysis was undertaken with the idea that debitage recovered from the plowzone can characterize activities that took place in each structure. Before continuing any further, the units of measure need to be described. During the rest of this analysis, the unit of measure will be each structure (rather than the excavation block). Each structure will be presented with its proportion of flake count, flake weight, shatter count, and shatter weight. This does eliminate some of the lithic debris as there were areas excavated in Block 1, where
Structures 1 and 4 reside, that did not specifically coincide with either structure. These discrepancies along with the non-inclusion of Structure 2a will be addressed later. The reason for using the structures as the unit of measure is that is decreases issues that may arise from mixed assemblages. In addition, structures are cultural units; blocks are not.

**Identifying Carter Robinson Tool Kit**

*Lithic Debitage*

A total of 15,796 pieces of lithic debitage were examined in this thesis; these included 10,084 flakes and 5,712 pieces of shatter. This number does not include debitage from certain areas, such as the mound, as well as from shovel tests, but it does comprise the majority of lithic debitage recovered. The total weight for the debitage is 17,612.8 g; flakes accounted for 6,354.3 g and shatter 11,258.5 g. This means that the average flake weighed 0.63 g and the average piece of shatter weighed 1.97 g. These differences in weight of flake vs. shatter are expected and further supported by the size grading portion of the mass analysis. The size grades were detailed in the previous chapter. Table 1 shows each item separated by size grade. It should be noted that the shatter weight average for size grade 1 is more than double its flake counterpart. The average shatter weight for the other two size grades are almost double their flake counterparts. This means that the average piece of shatter is substantially larger or heavier than its flake counterpart, which is to be expected since flakes are generally thinner than shatter. Table 2 shows the percentage of size grade spread across the site. This shows how much of the site total is represented by a particular size grade. Table 2 gives a better perspective of the primary type of lithic production occurring at the site. It shows that a large majority of the site totals are in grade
3, meaning that the lithic production at the site was primarily late-stage. This also means that early stage production was likely taking place off-site.

<table>
<thead>
<tr>
<th>Table 1. Debitage Count by Size Grade with Average Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size Grade</strong></td>
</tr>
<tr>
<td>Grade 1</td>
</tr>
<tr>
<td>Grade 2</td>
</tr>
<tr>
<td>Grade 3</td>
</tr>
<tr>
<td>Site</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Site Debitage Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size Grade</strong></td>
</tr>
<tr>
<td>Grade 1</td>
</tr>
<tr>
<td>Grade 2</td>
</tr>
<tr>
<td>Grade 3</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Raw Material**

Raw material is important because, as Andrefsky (2008: 9) states, “raw materials are undeniably important in stipulating how humans manufactured, used, and reconfigured stone tools.” Chert comprises the majority of the lithic debitage at the site both for flakes (98.5%) and shatter (98.6%). Other minor raw material types used include quartzite, chalcedony, jasper, and
rhyolite. The majority of tools associated with examined areas are also predominantly chert (97.2%), suggesting that tools were made on site. The chert at the site resembles Knox chert and was likely tabular in nature. Knox chert is a fine-grained chert (Sweat 2009: 12), often black or grey that can be tabular or nodular (Barry 2004: 34). Knox chert and similar cherts occur naturally in this area of Southwest Virginia and occur in large amounts in Lee County and the surrounding counties (Schweitzer 2015). It should be noted that there were several variants in chert color, namely in grey, white, and mottled color types, but these differences are present within the same cores. There were a few cobbles or pebbles that resembled riverine resources and could have come from the nearby creek bed, but they represent a small percentage of total core elements. The other materials can be sourced to other areas in Virginia, but geological data from Southwest Virginia shows that many of these types including Knox chert can be found in Ridge and Valley contexts, such as Lee County (Marr and Sites 2002; Radford University 2014; Virginia Department of Historic Resources n.d.). This indicates that all the non-chert resources could have been procured nearby. The distribution is shown in Table 3 below.

<table>
<thead>
<tr>
<th>Stone Type</th>
<th>Flake Count</th>
<th>Flake Weight</th>
<th>Shatter Count</th>
<th>Shatter Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chert</td>
<td>9,929</td>
<td>62,14.7g</td>
<td>5,630</td>
<td>11,058.5g</td>
</tr>
<tr>
<td>Quartzite</td>
<td>112</td>
<td>108.3g</td>
<td>55</td>
<td>144.7g</td>
</tr>
<tr>
<td>Chalcedony</td>
<td>25</td>
<td>15.8g</td>
<td>8</td>
<td>8.8g</td>
</tr>
<tr>
<td>Rhyolite</td>
<td>10</td>
<td>11.3g</td>
<td>8</td>
<td>18.6g</td>
</tr>
<tr>
<td>Jasper</td>
<td>8</td>
<td>4.2g</td>
<td>11</td>
<td>27.9g</td>
</tr>
<tr>
<td>Total</td>
<td>10,084</td>
<td>6,354.3g</td>
<td>5,712</td>
<td>11,258.5g</td>
</tr>
</tbody>
</table>
The non-chert raw material, as shown in Table 3, represents about 1.5% of all lithic debitage from the site; a similar percentage of non-chert raw material makes up the tools. There were no discernable patterns in the spatial distribution of non-chert resources. Quartzite is also used at the site for non-tool purposes, i.e., fire-cracked rock, which suggests it was sourced locally. The remaining three tool types may have been used to supplement existing resources or, like quartzite, used for other reasons unrelated to chipped stone tool production, including some ground stone, but it is difficult to say. Only ten tools out of 355 (n=9 quartzite, 1 chalcedony) were made from non-chert sources, which may suggest limited access to or use of these materials. Given the small amounts there is little that can be said about the non-chert debris in the individual structures, other than to say that Structure 1 has the highest number and Structure 6 has the second-highest.

Core and Tool Data

Core data and tool data were also analyzed. I followed the same process for separating cores and core fragments as I did with the flakes and shatter. I also tracked tool types, their location, and their raw material. There were a total of 249 cores and core fragments found in the areas analyzed, though ten core fragments were recovered in areas not associated with the structures examined. These cores included tabular chert, pebble, and various fragments. For clarification, the difference between cores and core fragments in this analysis, is largely based on size. To fall under the category of core the stone must be large enough to be able to be fashioned into a tool. Cores could have signs of working. Core fragments were either too small to form whole tools or showed signs of working, but did not meet the definition of flake or shatter. The specific block locations of these cores and fragments will be reviewed during each block’s
discussion. Table 4 shows the core data by size grade, while Table 5 shows the raw distribution of core data by structure with weight. The size grade is important because it helps differentiate cores by size, and, as Table 4 shows, cores are not found in the size grade 3. This should be expected, since as a core is chipped away it changes. Eventually a core is reduced to a tool or multiple tools and its respective flakes and shatter.

<table>
<thead>
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<th>Type</th>
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<td>Count</td>
<td>Weight</td>
<td>Count</td>
</tr>
<tr>
<td>Core</td>
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<td>122.2g</td>
<td>4</td>
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<tr>
<td>Core Fragment</td>
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<td>71.7g</td>
<td>2</td>
</tr>
<tr>
<td>Pebble/Cobble Fragment</td>
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<td>Totals</td>
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<td>Count</td>
<td>Weight</td>
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</tr>
<tr>
<td>2c</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>2b</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>25.2g</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>126.8g</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>239.9g</td>
<td>130</td>
</tr>
</tbody>
</table>
There were 355 chipped stone tools and fragments recovered at Carter Robison (Table 6). The majority of tools fall under the categories of drill, projectile point, or flake tool. The high number of drills and flake tools may be due to craft production activities. That being said, it is possible to connect tools to certain structures. Table 6 shows the distribution of tools by structure and type. For example, Structures 1 and 3 have the highest number of tools. Structure 1 has high numbers of drills and flake tools due to the presence of craft production. Structure 3 also has evidence of craft production, so it explains the number of drills as well. Structure 1 has the most tools followed by Structure 3 and then Structure 2c. The remaining 5.5% not accounted for in the structures were found in the areas surrounding Structures 1 and 4. For clarification, the point/drill type represents points that were refitted to be drills or could have fit either category. Of the 355
tools, only ten were not made of chert; of these, nine were quartzite and one was made of chalcedony, and together these comprise less than 3% of tool raw material. Specific tool locations per structure are discussed in more detail below.

In summary, Carter Robinson tool kit is primarily chert based, and though diverse in type, does have four main types: points, flake tools, drills, and bifaces. The people here are using locally sourced material to produce tools for daily use and craft production. The overall lithic debris suggests that initial working is being done off site, or that the material being brought to Carter Robinson is coming in smaller sizes, rather than large cores. I cannot say for certain how the lithic debris, tools, and cores at Carter Robinson compare to other sites in the region, because that goes beyond the scope of this thesis, but that is something that could and should be reviewed in the future. In the next section, the differences between the six structures will show how the people at Carter Robinson utilized the materials and tools available to them.

**Comparison of Structures Over Space and Time**

*Lithic Debitage (Structures)*

Here, I examine how structure proportions compare to one another. Tables 7 through 10 show the cumulative proportions for all three size grades for each structure. Size grade three will show at 1.0 because at size grade 3 100% of the debitage has been accounted for. Following the tables are a series of four OGIVE graphs (Figures 8 through 11) which graphically display these proportions, allowing similarities between each structure to be seen. Structures 1, 2b, and 2c are similar in all four debris categories at a higher degree, meaning that each structure shares similar quantities of higher proportions. These structures also are close to each other temporally and have other similarities that are discussed in more detail below. The other three structures also
share similarities in the amount of lower proportions, meaning that Structures 3, 4, and 6 have similar lower proportions.

Table 7. Cumulative Proportions for Flake Count

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.000516796</td>
<td>0.07881137</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.057943925</td>
<td>1.0</td>
</tr>
<tr>
<td>2b</td>
<td>0</td>
<td>0.109318996</td>
<td>1.0</td>
</tr>
<tr>
<td>2c</td>
<td>0.001342282</td>
<td>0.088590604</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0.062128222</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>0.000410509</td>
<td>0.065270936</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 8. Cumulative Proportions for Flake Weight

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.007207846</td>
<td>0.331206428</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.254723347</td>
<td>1.0</td>
</tr>
<tr>
<td>2b</td>
<td>0</td>
<td>0.413627895</td>
<td>1.0</td>
</tr>
<tr>
<td>2c</td>
<td>0.02224736</td>
<td>0.346719457</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0.272001773</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>0.0079738</td>
<td>0.359604158</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Table 9. Cumulative Proportions for Shatter Count

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.005025126</td>
<td>0.300502513</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.230263158</td>
<td>1.0</td>
</tr>
<tr>
<td>2b</td>
<td>0.016241299</td>
<td>0.248259861</td>
<td>1.0</td>
</tr>
<tr>
<td>2c</td>
<td>0.015564202</td>
<td>0.338521401</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>0.004686036</td>
<td>0.209934396</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>0.005514706</td>
<td>0.184436275</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 10. Cumulative Proportions for Shatter Weight

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.060878428</td>
<td>0.700449407</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.599040439</td>
<td>1.0</td>
</tr>
<tr>
<td>2b</td>
<td>0.210352188</td>
<td>0.700426894</td>
<td>1.0</td>
</tr>
<tr>
<td>2c</td>
<td>0.089385475</td>
<td>0.723992149</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>0.069333034</td>
<td>0.632355416</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>0.069495139</td>
<td>0.598641177</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Figure 8. OGIVE of Flake Count

Figure 9. OGIVE of Flake Weight
proportions. These structures also follow a temporal pattern like the other three structures, and this is discussed in greater detail below. The one exception occurs in flake weight (see Figure 9) where Structure 6 in size grade 2 falls in line with Structures 1 and 2c.
The data show that though there are small differences between each structure these differences are not statistically significant. Since there are no statistical differences in the debitage alone, determining what differs between the structures in terms of tool production and use may require additional information. The rest of this chapter explores the differences in each structure at a greater level, including looking at debris count, debris density, tools, cores, and the spatial distribution thereof. For each structure, I present a series of tables and figures relaying this information and will refer to the above tables and figures. The combination of these data is an attempt to reveal the degree of tool production and where it may have occurred.

Structure Analysis

The following tables (11, 12, and 13) show the raw data by structure for shatter and flake weight and count and averages. Due to differences in excavation there is not a whole lot that can be garnered from Tables 11 and 12. However, the averages may present some patterns. This issue of excavation bias is solved by determining the density of lithic debris for each test unit. The density figures are located in the discussion of each structure. These maps show the density of each test unit as 1 m$^3$ in that structure, giving a spatial distribution of the debitage and respective weight. This was done in an attempt to identify areas of tool production.

There are a few things to note here. One trend that follows for both flake and shatter data is that as the size grades get smaller the weight also decreases, which one would expect given that the screen sizes decrease from 1 to 3. The second trend is that Grade 1 has the smallest count
Table 11. Flake Counts and Weight by Size Grade

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th></th>
<th>Grade 2</th>
<th></th>
<th>Grade 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Weight</td>
<td>Count</td>
<td>Weight</td>
<td>Count</td>
<td>Weight</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>18.3g</td>
<td>303</td>
<td>822.6g</td>
<td>3,564</td>
<td>1,698.0g</td>
</tr>
<tr>
<td>2c</td>
<td>1</td>
<td>11.8g</td>
<td>65</td>
<td>172.1g</td>
<td>679</td>
<td>346.5g</td>
</tr>
<tr>
<td>2b</td>
<td>0</td>
<td>0</td>
<td>61</td>
<td>155.4g</td>
<td>497</td>
<td>220.3g</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>94</td>
<td>245.4g</td>
<td>1,419</td>
<td>656.8g</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>31</td>
<td>75.5g</td>
<td>504</td>
<td>220.9g</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>11.2g</td>
<td>158</td>
<td>493.9g</td>
<td>2,277</td>
<td>889.5g</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>41.3g</td>
<td>712</td>
<td>1,964.9g</td>
<td>8,941</td>
<td>4,042.0g</td>
</tr>
</tbody>
</table>

Table 12. Shatter Counts and Weight by Size Grade

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th></th>
<th>Grade 2</th>
<th></th>
<th>Grade 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Weight</td>
<td>Count</td>
<td>Weight</td>
<td>Count</td>
<td>Weight</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>262.8g</td>
<td>588</td>
<td>2760.9g</td>
<td>1,392</td>
<td>1,293.1g</td>
</tr>
<tr>
<td>2c</td>
<td>4</td>
<td>59.2g</td>
<td>83</td>
<td>420.3g</td>
<td>170</td>
<td>182.8g</td>
</tr>
<tr>
<td>2b</td>
<td>7</td>
<td>197.1g</td>
<td>100</td>
<td>459.2g</td>
<td>324</td>
<td>280.7g</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>123.6g</td>
<td>219</td>
<td>1,003.7g</td>
<td>843</td>
<td>655.4g</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>35</td>
<td>174.8g</td>
<td>117</td>
<td>117.0g</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>192.3g</td>
<td>292</td>
<td>1,464.2g</td>
<td>1,331</td>
<td>1,110.6g</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>835.0g</td>
<td>1,317</td>
<td>6,283.1g</td>
<td>4,177</td>
<td>3,630.6g</td>
</tr>
</tbody>
</table>
Table 13. Flake and Shatter Average by Location

<table>
<thead>
<tr>
<th>Structure</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flake average</td>
<td>Shatter average</td>
<td>Flake average</td>
</tr>
<tr>
<td>1</td>
<td>10.33g</td>
<td>23.73g</td>
<td>2.75g</td>
</tr>
<tr>
<td>2c</td>
<td>9.15g</td>
<td>26.28g</td>
<td>2.71g</td>
</tr>
<tr>
<td>2b</td>
<td>11.80g</td>
<td>14.80g</td>
<td>2.65g</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>28.16g</td>
<td>2.55g</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>24.72g</td>
<td>2.61g</td>
</tr>
<tr>
<td>6</td>
<td>11.20g</td>
<td>21.37g</td>
<td>3.13g</td>
</tr>
<tr>
<td>Range</td>
<td>2.65g</td>
<td>13.36g</td>
<td>0.69g</td>
</tr>
</tbody>
</table>

followed by Grades 2, and 3. As stated earlier, the reason for the decreased quantity in Grades 1 and 2 are likely due to natives procuring and initially working material off-site. An important detail that should be presented here is that areas identified as areas of tool use or production will be identified using multiple lines of evidence, but initially identified by the density of lithic debris. As the data show, already it is likely that most of the areas are more associated with late stage production than early stage production, given the large amount of size grade 3 materials as opposed to grades 1 and 2. The averages in Table 13 show one predictable pattern. The average flake weight is always lower than the average shatter weight for each structure, which matches the trend seen in Table 1 and supports the point made earlier that as size grades get smaller so does the weight. Another point to address is that, with the exception of size grade 1, the range is less than 0.70 grams for the other size grades. This means that either the method of flaking produced similarly-sized debris over time or that the material used fractured and flaked in a
similar manner throughout the site occupation. Also, the size variation is always larger for shatter than it is for the flakes. This is due to the bulky nature of shatter.

As mentioned before, the majority of chert at the site is in the form of tabular Knox chert along with some nearby river cobbles and pebbles. The lack of large pieces of shatter and flakes suggests that tabular chert is being initially worked elsewhere, i.e., not at the site. The lack of distinct stream cobbles and pebbles is noteworthy because it begs the question: why are they not using the river resources, and if they are, why are they not represented in the data? One reason could be that they do use the nearby stream resources, but that the chert inside is indistinguishable from the tabular chert sources after being worked. Similarly, they may be working these cobbles next to the creek, but there is no evidence to support this since no survey or excavations have been done there. The structural discussion to follow will be presented in a loose chronological order.

**Block 2: Structure 3**

Structure 3 (Figures 12 and 13) consists of one 4 x 4-m test unit with additional 1 x 2-m test units placed on the larger unit’s eastern side. Structure 3 was identified in Block 2, and dates to the initial part of site occupation. Like Block 1, portions of Block 2 had its plowzone screened (the original 4x4-m test unit) as well as two 1 x 2-m test units (N1032/E1013 and N1035/E1013) while the other five 1 x 2-m test units did not have plowzone screened. Test units 151 (N1032/E1013) and 152 (N1035/E1013) were 1 x 1-m units, while test units 153-157 were 1 x 2-m units. Figures 12 and 13 show the spatial distribution of lithic debris and associated weight in Structure 3. Though there is a spike in flake count density (Figure 12) in test unit N1035/E1013, the lack of differentiation for the original 4 x 4-m test unit hinders any attempt to make
meaningful interpretation other than it is likely that some lithic production was occurring somewhere in that 4 x 4-m area. The non-chert debitage for Structure 3 was very minimal, with only six flakes and one piece of shatter recovered, which is a very small percentage of the structural total. A trend that will become apparent soon. Again, proportionally Structure 3 is more similar to Structure 4 than Structure 1 (refer to Tables 7-10).

Figure 12. Structure 3 Flake Count and Weight Density at 1m$^3$
Figure 13. Structure 3 Shatter Count and Weight Density at 1 m$^3$

Structure 3 had 96 tools, (see Table 6) which represents 27% of all tools. Figure 14 shows the distribution of these tools. Of these 96 tools, 32 (33%) are projectile points, which is the highest number of any structure. It also contains 20 bifaces or bifacial fragments (Table 6). This
is only one fewer than Structure 1. This location supports the hypothesis that tool production was occurring somewhere in the confines of test unit 2, possibly focused in the northwest corner of the block, but once again the lack of differentiation of test unit 2 (due to its large size) makes difficult to be more specific. It is possible that this tool production is related to Structure 4 also, located immediately west of here.

Structure 3 contained three chert cores and 81 chert core fragments (Figure 15). There were no river cobbles or pebbles present in Structure 3. The large amount recovered from the 4x4-m unit is expected given the size of this unit, but test unit 152 (N1035/E1013) also contains an interestingly high number of core fragments for its size. This may explain the small spike in flake count density for that test unit. However, based on the limited data there is no clear evidence that the northwest corner of the Structure, or any other location, was an area of lithic

Figure 14. Structure 3 Tool Distribution
tool production. This is compounded by the fact that the structure contained less than 100 total pieces of lithic debitage when plowzone is taken out of the equation.

Figure 15. Structure 3 Core Distribution

**Block 4: Structure 6**

Block 4 was located approximately 90 meters south of the mound and contained the remains of Structure 6. It is also the only block in which every test unit had screened plowzone, allowing for a less biased comparison of lithic material from the entire block. This presents a clearer picture of structure activities. This 4 x 4-m block’s structure was built at the end of the early period and occupied throughout the middle period of site occupation (Warner 2018). A number of features were uncovered in this block, including posts, a hearth, and part of a midden,
but not all features were excavated and only part of the midden was excavated (see Chapter III).

Figures 16 and 17 show the spatial distribution of lithic debris and associated weight in Structure

![Figure 16. Structure 6 Flake Count and Weight Density at 1m$^3$](image)

![Figure 17. Structure 6 Shatter Count and Weight Density at 1m$^3$](image)
6. Structure 6 has the largest debris density of lithics of any structure. In terms of other lithic debitage the highest amount was in test unit N908 E970. The block shows one interesting area of lithic debitage. Test unit N908 E970 contains more lithic debitage than any other test unit in the structure. One reason for this could be its proximity to the hearth, a pattern seen in the other structures. For both types of debitage this area represents the highest concentration in both weight and number. This is due in part to the amount present in test unit N908 E970, but there is a spike in shatter count also seen in test unit N909 E971. With this in mind, and given the density of lithic debris, I believe this is an area of lithic tool production, one that appears to represent late-stage production, like the other structures.

As far as non-chert resources are concerned there were 19 flakes and 19 pieces of shatter with the majority quartzite. This means that for Structure 6, the non-chert material makes up less than 1% of all debris. However there are no patterns to raw material distribution that emerge, because they are found throughout the uncovered part of the structure. This is fairly symptomatic of the other structures, with the exception of Structure 1, which will be explained later on. The numbers are either too low to form any relationship or are evenly dispersed throughout the structure.

Block 4 contained 20 tools, (see Table 6) which represents 5.6% of all tools recovered from the site (Figure 18), the smallest amount of any of the blocks or structures. Of note, no drills were recovered from Structure 6, making it the only structure without drills. The location of these tools in the northeast section of the structure, combined with the flake and shatter data shown above, suggests this was an area of tool production rather than tool use. Figure 18 also shows the placement of associated core data. It should be noted that Structure 6 had the highest concentration of riverine resources, with seven of the nine identified pieces present here. There
were three cores and four core fragments. With regard to chert cores, Structure 6 contained four of the nine chert cores, but only 21 core fragments out of a site total of 239 fragments (9%). This represents the second smallest percentage of core fragments recovered in any block, but none of the fragments were represented in the two smaller size grades. This means that the core fragments present in Structure 6 were larger in size, which may mean more early stage production, but more likely it simply means larger core fragments were created during working. Once again test unit N908 E970 has the highest number of core-related items. Though there are several test units with additional core-related items, the distribution of cores also supports the assumption that this area was used for tool production. There is something interesting to note here: this structure has less than half the number of core fragments as compared to Structure 3, but has a similar weight, meaning that the core fragments here are larger than those present in Structure 3. This may suggest tool production from all stages was present in Structure 6 despite the lack of early stage flakes and shatter.
Figure 18. Structure 6 Tool and Core Distribution

**Block 3: Structures 2a, 2b, and 2c**

Block 3 is a 6 x 6-m grid with four additional 1x1-m test units placed in the northeast corner. As described earlier, it contains three structures built on top of one another separated by burned levels. Structure 2a is the bottom, 2b is the middle, and 2c is the upper level. Figures 23-26 below show the spatial distribution of lithic debris and associated weight in Structures 2c and 2b. Different proportions of the three structures were fully excavated. Only three 1 x 1-m test units were excavated to subsoil, i.e., through all three structures. This created a bias in the data where more data are available for Structure 2c because more of it was exposed. Density and proportional analyses were used to account for these differences in excavation. Sixteen test units were opened to expose and partially excavate Structure 2b. Structure 2a is not shown in the following figures (19-22), because of the lack of data from only three test units.
Figure 19. Structures 2c Flake Count and Weight Density at 1m³
Figure 20. Structures 2b Flake Count and Weight Density at 1m$^3$
Figure 21. Structures 2c Shatter Count and Weight Density at 1m$^3$
Figure 22. Structures 2b Shatter Count and Weight Density at 1m³
Structure 2c has a much more uniform density distribution than Structure 2b. The spikes seen in Structure 2b’s data may reflect how the density was calculated rather than activity, because there were high counts in small levels. That is, unlike Structure 2c, of which more was excavated, Structure 2b had much less area excavated yet contained large numbers of lithics. This may have inflated Structure 2b’s density number, due to large amounts of debris in smaller levels. The northeast corner is noteworthy in terms of shatter weight. Specifically, the hearth in Structure 2b (circled in Figure 20) shows an increased density in flake count, a trend which is fairly consistent throughout all the structures, but what this means is hard to tell based on density alone. I would like to restate here that Structure 2b is from the middle occupation and Structure 2c is from the late occupation. This places the occupation of Structure 2b after Structures 3 and 6 and 2c and 4, and contemporaneous with Structure 1. Keep this in mind, as the next structural discussion is with Structure 1 and 4.

Table 14 below shows the differences in flakes and shatter by each of Structure 2’s different occupation by count, while density is shown in Figures 23 and 24. The difference between the three structures is due to differences in excavation, which explains why Structure 2a has such little debitage. This is why density was used in the distribution figures as opposed to counts. Table 15 shows the breakdown of tools and cores by structure. The fact that Structure 2c has more tools and cores is not surprising given the greater amount excavated at this level. The biggest difference here is that while Structure 2c has substantially more tools than 2b, the spread is much more wide in 2c than 2b. Between Structures 2c and 2b there were 54 tools (see Table 6), which represents 15.2% of all tools recovered at the site. Figure 23 shows the spatial distribution of tools by test unit. Only one tool was found in Structure 2a (see Table 14). Tools are also partially concentrated in the central portion of Structures 2c and 2b. When you look at
tool distribution by structure more tools are found in the upper-most structure, 2c. Within Structure 2c, these tools are concentrated near the hearth and in areas where shell beads and waste were recovered, which may suggest craft production was occurring here. No cores were found in all three structures of Block 3 unlike the other blocks, and only 15 core fragments were found between Structures 2b and 2c (Table 15). This is the smallest amount of any structure. This low number is interesting, given that there are three occupations present here, but the lack of cores may be in part be attributable to the sections lacking screened plowzone and areas of the earliest two occupations that have not been excavated. There are not enough cores here to say anything definitive. Since there are so few core fragments in Structure 2b Figure 24 below only shows Structure 2c.

<table>
<thead>
<tr>
<th>Debitage Type</th>
<th>Structure 2a Early</th>
<th>Structure 2b Middle</th>
<th>Structure 2c Late</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flake Count</td>
<td>43</td>
<td>558</td>
<td>745</td>
<td>1,346</td>
</tr>
<tr>
<td>Flake Weight</td>
<td>34.1g</td>
<td>375.7g</td>
<td>530.4g</td>
<td>940.2g</td>
</tr>
<tr>
<td>Shatter Count</td>
<td>4</td>
<td>431</td>
<td>257</td>
<td>692</td>
</tr>
<tr>
<td>Shatter Weight</td>
<td>4.4g</td>
<td>937.0g</td>
<td>662.3g</td>
<td>1,603.7g</td>
</tr>
<tr>
<td>Type</td>
<td>Structure 2a</td>
<td>Structure 2b</td>
<td>Structure 2c</td>
<td>Total</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>Drills</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>6</td>
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<tr>
<td>Points</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Point/Drill</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biface/Biface Frag</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>PP/K</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Graver</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Scraper</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Flake Blade</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Flake Tool</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Worked Flake</td>
<td>0</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Tool Fragment</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Core Fragments</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Totals</td>
<td>1</td>
<td>18</td>
<td>50</td>
<td>69</td>
</tr>
</tbody>
</table>
Figure 23. Structure 2c and 2b Tool Distribution
In summary, there are some fairly stark differences between Structures 2c and 2b. Other than the differences in density, the diversity of tools and placement of tools is intriguing. All of the tools, save two, are found in two test units in 2b, while there are several test units in 2c with multiple tools. This may be evidence of intensification in tool use, but perhaps not tool production, given the relative uniformity of 2c debris density. It is also possible that some of the tools found in lower 2c levels are actually from 2b or vice versa. This could have been caused by natural processes or human activity during the building/destruction of these buildings. Of course the biggest change over time is the increase in shell bead production. This is important and the greater number and diversity of tools may be evidence of that change.
Block 1: Structures 1 and 4

Because Structures 1 and 4 are in such close proximity to each other some things should be noted about Block 1 as a whole. Block 1 represents the largest block by far at 117 1x1-m test units (Meyers 2011). The major difference between the two structures comes from the excavation differences between Structure 1 and Structure 4. Structure 1 is located in the western half of the block and dates later in site occupation, while Structure 4 is located in the east/northeast section of the block and dates to the latter part of the middle of site occupation (see Figures 3 and 4 in Chapter IV). Block 1 also included areas outside these structures. These areas outside the structures fall mostly the north of Structure 4 or east of Structure 1 and south of Structure 4, but there are ten test units that fall between the two structures. Table 16 below shows how the lithic debris is separated in Block 1. Analysis of the different levels in the blocks clarifies these numbers and is presented after the structure discussions below. These differences in the structures are mostly due to differences in excavations, which is why density was used in the spatial distribution maps. There is little that can be said in terms of use from these numbers alone.

<table>
<thead>
<tr>
<th>Debitage Type</th>
<th>Structure 1</th>
<th>Structure 4</th>
<th>Areas not associated with a structure</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flake Count</td>
<td>3,870</td>
<td>535</td>
<td>391</td>
<td>4,796</td>
</tr>
<tr>
<td>Flake Weight</td>
<td>2,538.9g</td>
<td>296.4g</td>
<td>265.3g</td>
<td>3,100.6g</td>
</tr>
<tr>
<td>Shatter Count</td>
<td>1,990</td>
<td>152</td>
<td>178</td>
<td>2,320</td>
</tr>
<tr>
<td>Shatter Weight</td>
<td>4,316.8g</td>
<td>291.8</td>
<td>496.4g</td>
<td>5,105.0g</td>
</tr>
</tbody>
</table>

There was lithic debris found outside of both structures. Block 1 has 52 test units that were not associated with either structure. A majority of the test units were excavated in the same fashion as Structure 4 so what lithic debris that was recovered from those areas is, not
surprisingly, minor. In these outside areas there were twelve core fragments, two drills, two bifaces, one knife, one flake tool and one tool fragment. It should be noted that these items were found within a one or two-meter area from the walls of the two structures. When combined with the evidence of a lack of tools and cores in the lithics recovered in these areas, as opposed to the larger amounts of tools and cores found in Structure 1 and Structure 4, this suggests these spaces were not used for tool production or tool use.

The earlier structure in Block 1, Structure 4 (Figures 25 through 28), has a much lower amount of lithic debitage of both flakes and shatter in count and weight. This may be due to the lack of screened plowzone in this area; however, the amount and weight of flake and shatter is relatively uniform across all of Structure 4. Of the 43 test units, seventeen do not contain shatter and twelve do not contain flakes. Based on the lack of debris from Structure 4 as well as the low densities for all lithic categories, there is a lack of evidence to suggest this structure had any areas specializing in tool production or tool use. Out of the three size grade categories there is a high proportion of size grade 3 (with the exception of shatter weight, because shatter at size grade 2 will weigh more than grade 3), which means more late-stage production was occurring here (see Tables 7-10 and Figures 8-11). The may be due to its status as a domestic house (Meyers 2011).
Figure 25. Structure 4 Flake Count Density at 1m³
Figure 26. Structure 4 Flake Weight Density at 1m$^3$
Figure 27. Structure 4 Shatter Count Density at 1m³
Of the non-chert resources Structure 4 had very little with only thirteen flakes and no pieces of shatter with no discernable pattern, which once again is similar to the other structures. I would like to take a moment to discuss this trend before continuing with Structure 1. For the first five structures the non-chert material makes up 34% of all non-chert material including quartzite,
chalcedony, jasper, and rhyolite. I stated much earlier that this material was likely sourced locally, so it may be that the people of Carter Robinson simply prefer chert to the other materials found at the site. The fact that the non-chert tool percentage and non-chert debris percentage are so close may be evidence of this, 2.8% and 1.5% respectively. With so little non-chert resources making up the debitage, another possibility may be that even though it is found locally it is harder to acquire than the chert sources.

Structure 4 also has significantly less tools (20) and cores (17) than Structure 1 (147 tools and 61 cores), as shown in Figures 29 and 30. The tools present are loosely concentrated in two areas: the northwest corner and the southeast corner. The northwest area does have a small spike in the amount of tools present in test unit N1038/E1006.5, and may indicate an area of production; however, there are no features present in the test unit. The core data is also somewhat lackluster. As Figure 30 shows there are not many cores in Structure 4, but there is an increase in test unit N1034/E1010.5. Unfortunately, neither tool nor core data add any additional information about activities occurring within Structure 4, mainly because these areas have either no debitage or very small densities.
Figure 29. Structure 4 Tool Distribution
Figure 30. Structure 4 Core Distribution

Structure 1, the later structure, as shown in Table 14 has the larger concentration of flakes, shatter, and associated weight between the two structures. Figures 31-34 show the distribution of these categories by density. Starting with the lithic debitage, Structure 1 has three
concentration areas. These include test units N1029/E1002.5, N1029/E1003.5, which make up the southern hearth, N1032/E1001.5, N1032/E1003.5, the northern hearth, and the northern extension area that includes northing lines 1035 through 1037. In the northernmost section of Structure 1 the flake size is generally smaller, suggesting this is an area of tool retouch rather than primary core reduction. The shatter data also support this. The middle area of Structure 1 follows a similar pattern. As noted earlier, these areas are located in an area of shell bead production. The fact that this level of debris, the number of tools and types (Figure 35) found in these locations further suggests that this was an area of craft production. The southernmost area is circled because it lies near a hearth. I would be wary to suggest that these areas are places of primary core reduction because of the lack of size grade 1 and 2 flakes and shatter. Even though Structure 1 has relatively high percentages of site totals, even size grades 1 and 2 for all four lithic categories represent relatively low proportions of the structure totals (see Tables 7 and 9). I would also like to note that the northern section of this structure is actually an extension of Structure 1 separated by a wall. It is not its own structure, hence its inclusion with Structure 1. Statistical testing of the lithic debris in this extension showed that it was in line with Structure 1 proper. This was determined by using the same cumulative proportions as the other structures. This commonality suggests that whatever activity is occurring in these two areas is similar. Once again there is a trend of lithic debris and tools related to hearth areas. To this point Structures 3 and 4 are the only structures to not follow this trend.
Figure 31. Structure 1 Flake Count Density at 1m$^3$
Figure 32. Structure 1 Flake Weight Density at 1m$^3$
Figure 33. Structure 1 Shatter Count Density at 1m³
Figure 34. Structure 1 Shatter Weight Density at 1m³
One of the things that makes Structure 1 unique is that unlike the previous five structures, Structure 1 actually has a pattern in its non-chert debris. Non-chert lithic debris is concentrated in Structure 1, and consists of 106 flakes and 51 pieces of shatter. This means that Structure 1 makes up 66% of all non-chert resources from the site thus far and these were concentrated in two areas (the northern hearth and the extension area). This is the only structure where there is a definitive concentration of non-chert resources. It is also the only structure with non-chert cores. There were three quartzite core and two jasper cores. These cores are concentrated in these same areas. This, along with its proximity to the mound and status as a late occupation, may be evidence of elite control of production of goods, a subject that will be touched on a bit more at the end of this chapter.

The number of tools found in Structure 1 can be seen in Table 13. Structure 1 accounts for 41.4% of all tools found at the site. Structure 1 has the highest number of any structure, namely drills and flake tools far exceed that of other structures (see Table 6). The tool distribution map (see Figure 35) further supports the idea that tool production and use was occurring here. Although there are ample tools found in other test units such as N1029/E1003.5, N1031/E1000.5, and N1034/E1001.5, I do not believe these are areas of tool production because of the lack of debris in size grades 1 and 2. If anything, they expand the area and speak more to tool use rather than production. For example, test unit N1029/E1003.5 includes part of Feature 100, which was a hearth or part of the southern circled area. Test units N1031/E1000.5 and N1034/E1001.5 lie on the edge of the original area suggested. The concentration of tools found in the center portion of Structure 1 was likely related to shell bead production as described by Meyers (2011; 2013: 94). Northing line 1037 also has substantial tools, which further supports that this area was also used for tool use and/or production.
Figure 35. Block 1 Structure 1 Tool Distribution
The core data, as shown in Figure 36, appears to contradict these assertions to some degree. Though N1029/E1003.5 has one of the highest numbers of core fragments, the center region has only six core fragments if we include the other aforementioned test units. Despite this, Structure 1 has the highest count of cores of any structure, but only by one (see Table 5). The cluster of cores on northing lines 1035-1037 further supports the idea that this was an area of
lithic tool production, even though the debris data leans towards late stage production (Tables 7-10). Of the core and core fragments present in Structure 1 three are quartzite cores and two are jasper cores. It is the only structure that contains any non-chert cores. This is not surprising given that Structure 1 has the highest number of quartzite and jasper debris. It is also of note that this debris is located along the northing lines 1035-1037 with the cores. This is the only place in any structure where there was such a strong association of non-chert debris. Despite this, I would be wary to suggest anything other than that location is where that material was worked.

**Plowzone and non-Plowzone Contexts**

The site was excavated in both blocks and systematic shovel testing, which allows for some analysis of all the site data. The issue of plowzone excavation differentials has been repeatedly addressed above. Table 17 shows the percentage decrease for site totals. Table 18 shows the lithic types found in areas with and without plowzone sorted by size grade. These numbers are important, because it shows just how much lithic debris the plowzone contains. Though limiting the areas to cultural layers, or taking out the plowzone, may make the lithic analysis more uniform, this also limits what can be said about activity within structures. Removing the plowzone lithics from the analyses not only decreases the amount of lithic debitage significantly, but it also substantially diminishes the core data and more than halves the number of tools. The number of cores also decreases by more than half, from 239 to 110. For example, Structure 3 is reduced to sixteen pieces of lithic debris total, making it appear as if no lithic production was present in this structure. Without these three combined lines of data it would be difficult to make any real interpretations about what is going on.
Table 17. Site with and without Plowzone

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Plowzone</th>
<th>Without plowzone</th>
<th>Percent Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flake Count</td>
<td>10,084</td>
<td>2,959</td>
<td>70.66%</td>
</tr>
<tr>
<td>Flake Weight</td>
<td>6,354.3g</td>
<td>1,967.8g</td>
<td>60.03%</td>
</tr>
<tr>
<td>Shatter Count</td>
<td>5,712</td>
<td>1,249</td>
<td>78.13%</td>
</tr>
<tr>
<td>Shatter Weight</td>
<td>11,258.5g</td>
<td>2,989.8g</td>
<td>73.44%</td>
</tr>
</tbody>
</table>

Table 18. Debitage Count by Size Grade with Average Weight (no plowzone)

<table>
<thead>
<tr>
<th>Size Grade</th>
<th>Flake Count</th>
<th>Flake Weight</th>
<th>Average Weight</th>
<th>Shatter Count</th>
<th>Shatter Weight</th>
<th>Average Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>1</td>
<td>12.2g</td>
<td>12.20g</td>
<td>11</td>
<td>235.9g</td>
<td>21.45g</td>
</tr>
<tr>
<td>Grade 2</td>
<td>240</td>
<td>658.8g</td>
<td>2.75g</td>
<td>368</td>
<td>1922.4g</td>
<td>5.22g</td>
</tr>
<tr>
<td>Grade 3</td>
<td>2,718</td>
<td>1,296.8g</td>
<td>0.48g</td>
<td>870</td>
<td>808.3g</td>
<td>0.96g</td>
</tr>
</tbody>
</table>

Most of the interpretations made above were made in areas where plowzone was screened, but these interpretations are also supported by tool and core distribution data. In areas where evidence of lithic tool production was lacking, with or without plowzone, there were very small amounts of lithic debris found in the cultural layers. The use of proportions, OGIVE graphs, and density allows me to address issues of change over time. Coupling these with the other lines of evidence I suggest that the activities surrounding lithic tool production vary slightly from structure to structure, but this variation is small.

It should also be noted that none of the structures has a full range of lithic tool production represented. All structures seem to follow a pattern to varying degrees of primarily late-stage tool production with little evidence of early-stage production. In some areas (see Tables 4
through 7) size grade 2 contains approximately 25% of the debris (namely shatter weight) in a given structure, but this alone does not denote early-stage tool production. The structural interpretations support earlier interpretations by Meyers (2011) that areas with both shell beads and lithic tools are areas of craft production, and those without this evidence are not. For example, Structure 4 has few tools and little evidence of shell production, and it is likely that this structure was not a place of craft specialization. On the other hand, Structure 1 has ample debris, tools and cores to denote craft production with the amount of shell debris and shell beads found there, but does not have the greatest density, which lies with Structure 6. The fact that Structure 6 has the greatest density is likely due to the large amounts of debris found in the plowzone. The other structures simply do not have the same amount of debris.

It is important to note that these are not just numbers, but the byproducts of actions of a past people. These numbers represent the process of living in a house, just as our wood shops in our garages filled with sawdust are evidence of our activities. Lithic tool production was a necessity for daily life. Native people hunted, prepared food, went to war, and crafted with these items. It is easy to get lost in the statistics and the data and forget that these small pieces of stone represent families and groups of people. There is ample evidence here to support ideas suggested by Meyers (2011; 2013) as to what these tools were being used for, namely the production of shell beads or other craft and trade items. Yet, most of what the evidence reveals daily activity around tool production suggesting the organization of tool production was likely centered in individual households.
Change Over Time

Multiple structures spanning the occupation of the site were examined. The structures in an approximate chronological order are as follows: Structure 2a and Structure 3 (early), Structure 6, Structure 4 and Structure 2b (middle), and Structure 1 and Structure 2c (late). Based on the combination of debris counts, weights, proportions, lithic tool and core data a few interpretations can be made. Proportionally the individual structures do not have any statistical differences between each other (see Figures 9 through 12). All structures have a similar proportion of size grades as compared to one other. For example, size grade 1 represents the smallest proportion and size grade 3 represents the largest for debris counts, with the exception of size grade 2 shatter weight, which holds the largest proportion in its category for all structures. Given that there are no statistical differences in the debris it would appear as if the daily activity going on over time does not change. The lack of a pattern in debris density also complicates what can be said. So in terms of craft production the difference would be in whether or not the house had presence of craft goods and that is the key to looking at change over time. Simply basing assumptions of the presence of craft production goods limits what can be said about craft production on the frontier. However, given that production does seem to move as time goes on, it may suggest less centralization, at least in the early occupation of the site, but more evidence is needed to support this claim. This may be because of this frontier’s distance from administrative centers. Sarah Herr (2001) has found similar results at frontier sites in the Southwest.

Beginning with the early structures, there is little that can be said about Structure 2a because of the low amount of debitage that came from the unit. Structure 3 is interesting because it has some evidence of craft production with the presence of cannel coal beads, but the debris does not suggest anything definitive. However, the presence of a variety of tools supports
Meyers’ idea that this was an area of bead production. During the middle period of occupation, Structure 6 has the highest debris density of every structure, but it also has the lowest number of tools. Meyers (2011) has suggested that Structure 4 is a domestic structure and given the lack of tools and minimal shell I would add Structure 6 to this category. Structures 2b and 4 also have evidence of craft production in the form of shell, but on smaller scales. Despite the presence of some shell in Structure 4, it is to a much smaller degree than any of the other structures including its contemporary Structure 2b.

The later structures present the greatest difference. Both Structures 1 and 2c have ample evidence of craft production in the form of shell beads. As I stated in the discussion of the proportional data, Structures 1, 2c, and 2b have the greatest similarities with the other structures following on the lower end. The change over time that can be revealed in this thesis echoes what Meyers (2011) has already stated. As the site progresses through time the type and range of craft production changes. Even though there is plenty of cannel coal production in Structure 3, it appears that as the site shifts from early to middle there is a change to shell bead production. Once shell production begins it appears to intensify in the later period of site occupation. The lithic debitage merely shows that there are similarities with Structures 1, 2c, and 2b, which would make sense because they are most similar in terms of shell bead production.

Lastly, Carter Robinson might be able to shed some light on how production is controlled on the frontier. I have stated several times before that the structures change over time, what it looks like, and that craft production is a heavily deciding factor, but what does this change over time show about control? Even though craft production exists in some form throughout the sites history, production intensifies as site enters into the later period, certain structures seem more focused on craft production than others. These structures (1 and 2c) could be reflective of elites
controlling the production of shell beads. Meyers (2011) ceramic data supports this, because as
site history progresses the temper material in these same structures also changes.

This chapter showed the results of mass analysis of six structures from the Carter-
Robinson Mound Site. I have presented proportional data with graphs along with debris density, 
tool and core distribution maps. This has shown what areas of structures may be places of lithic 
tool production or use and by extension areas of craft production. I determined that though there 
are no statistical differences between the structures there are some similarities and evidence that 
support Meyers’ (2011) conclusions about craft production at the site. The craft production at the 
site becomes more associated with shell bead production as time progresses. The debitage 
proportions cannot speak to this *per se*, but it can speak to the production of tools that do favor 
the structures with more shell production.
CHAPTER VI: DISCUSSION OF STRUCTURES

This chapter provides a more in-depth discussion of the two groups of structures described in the previous chapter. The two groups identified in Figures 8 through 11 show several patterns regarding lithic debris, temporality and craft production. These patterns need a lengthier discussion about changes over time at the site, specifically in terms of the organization of activities, both domestic and non-domestic. This also requires a closer look at the structures themselves, one that goes beyond the raw data. Finally, it is important to connect the structures and the data to broader concepts of craft production, chiefdoms, and frontiers.

As stated in the previous chapter there are two groups of structures that can be sorted by lithic data. Structures 3, 6, 4 are here designated Group 1 and Structures 2b, 1, and 2c are designated Group 2. Group 1 represents the early half of site occupation with limited shell bead production. Structure 3 does have evidence of craft production, but it exists in the form of cannel coal and not freshwater or marine shell. Group 2 represents the latter half of site occupation with an overwhelming presence of shell bead production.

The first commonality between the structures of each group comes from the lithic debris. Group 1 has a lower proportion of larger flakes as represented by Size Grade 2, whereas Group 2 has a greater proportion of larger flakes as represented by Size Grades 1 and 2. This means Group 2 represents a fuller range of lithic tool production than Group 1. This may suggest that more or larger cores were being used to create more tools, which created a more diverse set of debris and is likely related to craft production. Group 2 also has greater evidence of shell bead production.
production and collectively has more tools than Group 1 (Group 1 n=136 tools, Group 2 n=201 tools). The presence of the fuller range of tool production in Group 2 likely reflects the increased need for tools associated with shell bead production. By contrast, craft production was not as important during the earlier part of occupation and the more restricted range of tools produced suggests that craft production and domestic activities were more closely integrated; that is, craft production was seen as part of regular domestic activities and did not require additional tools for specialized production.

The types of structures present changes over time, and this is related to the tool production data also. There are more structures with evidence of domestic activities during the first half of site occupation, while during the second part of occupation there are more structures that have areas related to craft production. Table 19 below shows a breakdown of the two groups by the relevant data types. A few clarifications may be in order. The four density categories are based on the density maps presented in the previous chapter. If a majority of the structure had high density then it was classified as high and if it had low density it was classified as low, but if it had a mixture of high and low density areas it was designated mixed. The percentages of tool types are presented as percent of tool type first (T) and then percent of tools in that structure (S). The tool types present represent the four tool types with the highest counts.
<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th></th>
<th>Group 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Structure 3</td>
<td>Structure 6</td>
<td>Structure 4</td>
<td>Structure 2b</td>
</tr>
<tr>
<td><strong>Artifact Type</strong></td>
<td>Early</td>
<td>Early Middle</td>
<td>Late Middle/ Early Late</td>
<td>Middle</td>
</tr>
<tr>
<td><strong>Flake Count Density</strong></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Mixed</td>
</tr>
<tr>
<td><strong>Flake Weight Density</strong></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Mixed</td>
</tr>
<tr>
<td><strong>Shatter Count Density</strong></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td><strong>Shatter Weight Density</strong></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td><strong>Craft Production</strong></td>
<td>Yes (coal)</td>
<td>No</td>
<td>No</td>
<td>Yes (shell)</td>
</tr>
<tr>
<td><strong>Total Tools</strong></td>
<td>96</td>
<td>20</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td><strong>Biface percent</strong></td>
<td>40/21%</td>
<td>4/10%</td>
<td>8/20%</td>
<td>4/14%</td>
</tr>
<tr>
<td><strong>Drill percent</strong></td>
<td>24/15%</td>
<td>0/0%</td>
<td>10/30%</td>
<td>3/14%</td>
</tr>
<tr>
<td><strong>Projectile percent</strong></td>
<td>46/33%</td>
<td>6/20%</td>
<td>0/0%</td>
<td>0/0%</td>
</tr>
<tr>
<td><strong>Flake Tool percent</strong></td>
<td>15/9%</td>
<td>15/45%</td>
<td>10/30%</td>
<td>5/21%</td>
</tr>
</tbody>
</table>
The trends seen in Table 19 and 20 have already been discussed at some length. The commonality in lithic debris, temporality, and presence of craft production are all apparent in the table. However, beyond that the commonalities become less apparent, unexpectedly. Structures with evidence of craft production should ideally have higher proportions of tools associated with craft production if tool and craft production were occurring in the same place. This is true to some degree when comparing Structures 3 (early) and 1 (late), but the other structures do not show this pattern. The proportion of total tools is juxtaposed with the proportion of tools in that structure. For example, Structure 1 has the highest proportion of total drills which makes sense because of the large amount of craft production debris found there. However, Structure 4, which has little evidence of craft production, has a higher proportion of drills in the structure. The same is true of bifaces in these structures. In fact, Structure 4 has a larger structural proportion of bifaces and drills as compared to any structure (Structure 3 does have a higher structural proportion of bifaces, but only by 1%). If anything, the tool proportions by structure contradict
some of the earlier discussions, if it is assumed that the tools are being used for the same or similar purposes. The other possibility is that, since the structures without or with less evidence of craft production have fewer total tools, the tools that are present represent a higher proportion of tools in that structure. The low proportions in Structure 2b are likely because it has less excavated area than any other structure, hence why it only has fourteen tools. However, the density data (see Figures 20 and 22) suggests that more tools should be in Structure 2b.

The structures with more craft production not only have more tools as the data discussed above show, but there is also a greater diversity of tools. For example, Structure 6 has twenty tools representing seven tool types (points, biface, pp/k, flake blade, flake tool, worked flake, and tool fragment) and dates to the earlier occupation. By contrast, Structure 1 has 147 tools representing all eleven tool types present at the site and dates to the later occupation. This represents an approximate 50% increase in tool diversity over time. This increase suggests a fuller range of activities, including craft production, were being done in Structure 1, and given its proximity to another domestic structure (Structure 4) these activities became separated from domestic activities during the later period of occupation. Structure 6 is somewhat of an anomaly, given its lithic density and lack of tools. However, even given its high density, the proportions keep Structure 6 in Group 1. I have already addressed reasons for the lack of tools. If we think about the middle occupation period as transitional, this transition may be visible in the changing amounts of tools and associated debris. There is a large amount of debris, but it is associated with tools that were not used for craft production, as suggested by the little evidence of shell or cannel coal beads and waste. This lack of craft production may explain the lack of tools, because the two structures without craft production both have small tool amounts.
Specific Structure Analyses

In this section each structure’s tool types will be discussed and analyzed in more detail. Not all of the structures are examined to the same degree, because some structures contain more data, especially provenience data for tool types, than others. The distribution of tools in and around Structure 3, an early occupation structure, provides information on the organization of activities during this period. The tools (n=96), including drills, bifaces, and flake tools, associated with cannel coal production, were recovered mostly outside the structure, while a significantly lesser amount of tools (n=20) both generally and specifically tools associated with craft production (like drills), were also recovered from the house interior. For example, all of the bifaces (n=14) associated with Structure 3 were found outside the structure, as were all of the flake tools (n=9), drills (n=11), projectile points (n=26), and worked flakes (n=9). The inside of the house contained drills (n=7) and projectile points (n=5), but unlike the outside it also contained gravers (n=2) and a scraper. The presence of the tools outside the house, as opposed to inside, and the presence of the cannel coal debris, suggests that craft production occurred inside the house, but to a much lesser degree than outside the structure. The gravers and scraper present may suggest more domestic activity associated with food preparation or ceramic preparation. That said, the diversity of tools (n=7 types) and the number of tools found outside the structure, (n=76; 79%), along with most of the cores (n=3) and core fragments (n=73), suggest that domestic and craft production activities were occurring inside and outside the structure, but primarily outside (see Figure 14). This suggests that early on in site occupation craft production and domestic activities were not differentiated. The presence of so many projectile points, bifaces, and flake tools, as described above, show a predominance of domestic activities associated with structures. I have included bifaces and flake tools, because these tools could be
used for a multitude of purposes, including hunting, and none of these are found on the inside of
the structure.

Structure 6 had the highest percentage of possible riverine resources of any of the
structures and has a relatively high lithic density (see Figures 16 and 17) but few tools (n=20) as
compared to the other structures. The lack of shell debris and drills suggest this structure was not
an area of craft production. The reason for the high lithic density in combination with the low
number of tools is difficult to determine. They could be using tools at a different location, but
that would be difficult to support with the data present. A more likely solution may be that they
have simply not been found. Because Structure 6 represents an earlier occupation it may be that
the tools were used outside the structure, like Structure 3, which has not been excavated. Only
the interior of Structure 6 was excavated. It is also possible that tools were made in Structure 6
but used in other structures, although at present there is no way to connect the tools in other
structures with the debris in Structure 6. With regard to the tools found in Structure 6’s interior,
they were focused around the hearth area. This pattern is also seen in Structures 1, 2b, and 2c. In
addition, approximately 75% of tools found in Structure 6 are either a biface or flake tool, which
suggest domestic activities such as food preparation were occurring here.

Structure 4 also has a relatively low lithic density and has the same number of tools as
Structure 6 (n=20). This may be due to its relationship to Structure 1. Structure 1, though
slightly later than Structure 4, was likely contemporaneous with Structure 4 for a time. Structure
1 has an increased debris density and a great diversity in tools present as compared to the other
structures, even when plowzone is accounted for. Structure 1 shows evidence in terms of tools
(described above), debris density (see Figures 31-34), and shell debris. Structure 4 by contrast
does not have much evidence of specific activities. It has a low lithic debris (see Figures 25-28),
only twenty tools, and a low tool diversity. Only five types of tools (drill, biface, pp/k, scraper, flake tool were present. Further, there is no discernable pattern in tool location. The core data from Structure 4 does not reveal a pattern either. If Structure 4 is a domestic structure then the lithic data supports this. Structure 4 may have been a living quarter for elites, who were to some degree controlling the production going on in Structure 1. This concept of chiefly or elite control will be discussed in greater detail later.

The overall lithic debris, as shown in the OGIVE graphs in Figures 8 through 11, in Structures 2b and 2c are closest to that of Structure 1. This may be because shell bead production was also occurring here, primarily in the upper structure (2c). Structure 2c has forty tools and a greater diversity of tool types: eight of the eleven tool types identified at the site are present here. (see Table 6). The difference between the lithic and tool debris in Structures 2c and 2b lies in the areas of tool use and the degree of tool use. I would suggest that the increase in tools over time, from seventeen in Structure 2b to forty in Structure 2c, and the increase in diversity of tools (n= 7 types in Structure 2b; n=11 types in Structure 2c) and the change in where tools are located in the structure means that not only is there more tool use (craft production or otherwise) happening in the structure, but that it is also more widespread spatially. The tools present in Structure 2b include drills (n=2), bifaces (n=2), and flake tools (n=2), and graver (n=1). By comparison, in Structure 2c there are three drills, five bifaces, five flake tools and four gravers. The increase in bifaces, flake tools, and gravers shows an intensification in craft production occurred between the two structures. In terms of tool location Structure 2b has two areas of tool concentration: the hearth area and the northeast corner. By contrast, Structure 2c has a relatively wide distribution of lithic tools (see Figure 23), suggesting that craft production became a main activity in this household over time.
To show the difference that occurs over time in the organization of domestic and craft production activities, Structure 3, the earliest structure, is compared with Structure 1, a later structure. In Structure 3 the tools associated with both domestic and craft production activities are mixed together and are primarily located outside the structure. By contrast, Structure 1 has three areas that have evidence of craft production in the form of shell beads, shell debris, and tools specific to bead production like drills. Two of these areas are located inside the house and one is located outside the house. Structure 1 also lacks a hearth. It has a small burned area in one of the areas of bead production and within that feature beads, shell debris, and drills were found, suggesting burning was part of the craft production process. Other remains found in Structure 1 also show evidence of differential food preparation and consumption. For example, processed corn is found here, as evidenced by corn kernels but few cobs, and better cuts of deer are present. There are more bowls in this structure but a lack of cooking vessels (Meyers 2011; 2017). If food preparation is considered a form of craft good, then the amount and type of food remains found in Structure 1 only supports its status as a craft production structure. Or, if Structure 1 is classified as a non-domestic structure, it may suggest a place for activities such as feasts (Meyers 2011; 2017). The proximity of Structure 1 to the mound may further support this assumption. If Structure 4 was occupied contemporaneously, and the lithic debris and tools from the inside of Structures 3 and 4 resemble each other, as demonstrated though the debris densities (See Figures 8-11), the number of tools inside the structure (n=20 for both), and the decreased tool diversity (n=5 in Structure 3; n=6 in Structure 4) (see Table 6), then it stands to reason that the person living in Structure 4 was controlling and/or participating in the shell bead production at Structure 1.
Elites and Frontiers

How does the evidence for different groups of structures and changes in activities over time connect with concepts such as chiefdoms and frontiers? To start, the change over time between Structures 3 and 1, as described above, may be evidence of a change in the organization of craft production at the site. Initially, craft production is not separate from domestic activities; that is, it is seen as one of many domestic activities and it occurs within the household, as seen in Structure 3. Over time, this changes, so that by the later part of occupation craft production takes place in a separate area from domestic activities. This suggests that the importance of craft production at this frontier site increases over time. There is not enough evidence to suggest that elites had a strong presence during the early occupation of the site, but it appears that they are present by the end of site occupation. By extension, it may also suggest that elites have more control over the production of shell beads, or at least have the ability to live in areas apart from shell bead production during the later stages of site occupation.

One of the many items that is often associated with the concept of Mississippian is the presence of corn agriculture. However, Carter Robinson has very little evidence of corn agriculture. The people at Carter Robinson may have compensated for this lack of corn by increasing shell bead production over the course of site history. If the assumption is made that shell beads were used as trade resource, then it may be that the shell beads were used to trade for food resources. There is also ample evidence of local hunting, including deer, bear, snake and fish.

There is also some evidence that sheds light on the interactions of Mississippian people at this frontier with the non-Mississippian Radford people of southwestern Virginia. Specifically, Structure 6 is an anomaly in many ways. First, Structure 6 is farthest from the mound of any
structures identified at the site; in fact, shovel testing of the entire site suggests only a small ephemeral structure was located 20 meters farther south of Structure 6. That is, if approaching the site from the south, Structure 6 and its inhabitants would have been the first encountered. With regard to site settlement, studies of Mississippian architectural grammar (Lewis and Stout 1998) suggest location near the mound meant higher status. Structure 6’s great distance from the mound—and from many other structures at the site—suggests it held a lower or different status than the rest of the inhabitants there.

Within Structure 6 there is a relatively low number of tools (n=20), which I have suggested means it was the location of domestic activities. It is also possible that tools were made here, as indicated by the high amount of lithic flakes and shatter, and these tools were used elsewhere. Structure 6 also contains more riverine resources (over 70%) as compared to other structures at the site. It is possible that the inhabitants of Structure 6 were more familiar with local lithic resources and their skill in producing tools from these resources, and/or their ability to access these resources, and this might account for the high number of riverine resources and the simultaneous lack of tools found in the structure. Ceramic analyses (Warner 2018) of Structure 6 suggests that the people living there may be from a local non-Mississippian community, that is, they were tied to the Radford cultural tradition. The ceramic evidence suggests intermarriage may have occurred. Together, the lithic tool, flake, shatter, and core data, combined with the location of Structure 6 on this Mississippian landscape, may be an indication of group interaction, which Meyers (2017) suggests occurred during the middle of site occupation as an adaptive strategy on the frontier.

Frontier areas are places where contact between groups occurs, but it they are also areas with differences in available resources. These differences result in changes in economies that
consequently change the way people organize themselves. Carter Robinson, for example, does not have the microdrill production economy found at Cahokia. More broadly, there is a change over time in how the Carter Robinson economy functioned and this was driven by its frontier status. This idea may partially explain why the differences demonstrated between Structures 3 and 1 exist. After the site was first established elites may not have had the power or influence they held by the late stages of site occupation. In fact, elites may not have existed and could have emerged once this different economy emerged as well. This would have entailed understanding the need to increase the importance of craft production, make it an integral part of the economy, and make this a reality by incorporating nearby populations into this new economy. Mounds cannot be built in a day, just as much as one’s personal prowess takes time to accumulate.
CHAPTER VII: CONCLUSIONS

Lithic tool production is an important part of prehistoric lifeways and the study of it is important for archaeology. Lithic studies allow archaeologists to determine what types of tools were made, what material they were made out of, and how they were made. More advanced studies can even show how individual tools were used and what they were used on. Lithic studies also reveal information about other areas relevant to the study of prehistoric people. Some of this information is pertinent to all native groups: the procurement and processing of food. One particular aspect of native life, particularly in chiefdoms, which analysis of lithic tools can shed light on is craft production. Without the necessary tools, creating items such as shell beads or other trade items would have been difficult.

This thesis sought to understand the daily activities occurring at the Carter Robinson site by its inhabitants through a reconstruction of the tool kit used there. This included identifying materials used, types of tools used, evidence of tool production and tool use. Second, I used these data to compare types of activities present at the site across households and over time to identify if any differences in activity occurred there (across space and time) and if differences were present, how these differences might shed light on craft production at frontier sites.

The results showed that primarily late-stage production occurred at the site and there was no statistically significant difference between the structures. There were some differences between structures and over time. The biggest difference resides in the presence of shell bead production. Though the OGIVE graphs presented in the analysis chapter show some small, non-
statistical differences between any given structure, the dividing line really comes with the introduction of shell production. The data presented show a difference between the earlier and later structures. While the earlier Structure 3 has evidence of cannel coal production, the later Structures 1, 2c, and 2b all have ample evidence of shell bead production.

What does this mean for Carter Robinson? Based on the evidence here it would appear that not only did production type change, but the intensity of production changed too. This may mean one of two things. First, there was greater demand for the items by other nearby communities. Another possibility is that elites, with the means to control production, wanted more shell beads for symbolic purposes. Without more evidence, this may be as far as any interpretation can go. One detail that I believe gives credit to the control by elites might be the proximity of Structure 1 to the mound. By contrast, Structure 6 has no evidence of shell bead production unlike the structures close to the mound. Structure 4 is the only structure close to the mound that does not have evidence of craft production, whether shell or cannel coal. The evidence for trade may be seen in the presence of Pisgah ceramics in the later structures (Meyers 2011). The presence of this non-local ceramic type may indicate trade relationships with groups outside the immediate region, and very possibly the people at Carter Robinson were trading shell beads.

One omission that would have furthered strengthened my own analysis was obtaining an actual percentage of cortex per piece of lithic debitage. This would have allowed me to show how much of the debitage from a particular structure had cortex. The presence or absence of cortex can give additional data about the stages of lithic tool production or core reduction. Also, as stated in the Chapter 3, size grading normally has four size grades. Using a different series of
screen sizes or including debris from waterscreening could strengthen or possibly change some of the results of this study.

The greatest issue with this thesis, of course, was the differential excavation of Carter Robinson, which was outside of my control. Controlling for this was rather simple, but it greatly reduced what could be said as far as interpretation. In future studies of this type having a uniform excavation pattern would be beneficial. Along the lines of a more traditional mass analysis, the side-by-side comparison of experimental lithic production data with the debris from Carter Robinson could further explain the method of lithic production. For example, a data set of debris produced by a certain type of core reduction, like soft hammer percussion with pressure flaking, could be compared to the data from Carter Robinson to see if there were any significant differences or similarities between the two.

Additional studies of lithic materials from the site could clarify the degree of differences between structures with regard to tool production and use and craft production. Individual flake analyses could shed more light on the types of working being done at the site, such as what percentage of the flakes appear to be made using hard hammer or soft hammer. Within the realm of craft production, microwear and micro-polish analyses would show what the tools were being used for and what they were using the tools on. This would allow for the further identification of tools as drills and, depending on the tool, and possibly identification of tool types with specific types of craft production. For example, were some drill types better suited to working on shell, or different types of shell beads? Related to this, a close examination of the spatial distribution of different tools types in areas of probable production (i.e., Structure 1; Structure 2c) would add to our understanding of organization of craft production. Another interesting avenue could be comparing this mass analysis with samples from other sites to see if there are similarities.
The analyses used to identify craft production at the site would be further supported with microwear analysis, mentioned above. Ultimately, it may be possible to understand political control at the site. If craft production and lithic debris are concentrated in certain areas, that might mean that certain individuals, likely elites, were controlling craft production. This could have implications for the study of prehistoric trade. If this were the case it would appear that by the later stages of site occupation, Structure 1 and 2c were areas of more craft production and possibly centralization.

These analyses showed that daily activity at the Carter Robinson site with regards to lithic materials was fairly uniform, but over time, craft production became more important at two areas. I use the term uniform, because other than the small proportional differences, the lithic debris remains relatively similar. The spread in each structure may change, but that is dependent on the size and shape of the structure. The shift in craft production has been pointed out several times. The reason for this change could be a number of things including: access to more shell resources or greater demand for shell beads. Whatever the reason may be, this change is reflected in the lithic debris.
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King, Adam (editor)

King, Adam

King, Adam and Maureen S. Meyers

Kooyman, Brian P.

Kowalewski, Stephen A.

Lafferty III, Robert H.

Lewis, Barry R. and Charles Stout (editors)

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Parker, Bradley J.

Pauketat, Timothy R.


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VITA
Robert Dalton Capps

Education
M.A., Anthropology, University of Mississippi, 2018
Maureen Meyers, chair

B.A., Anthropology, University of Mississippi, 2016
B.A., History, University of Mississippi, 2016

Research & Professional Experience
2015 Student Crew Member, University of Mississippi Field School.
2016-2018 Graduate Teaching Assistant, Department of Anthropology, University of Mississippi.
2016 Student Crew Member, Center for Archaeological Research at the University of Mississippi, Principle Investigator: Tony Boudreaux
2017 Graduate Field Assistant, Archaeological Investigations at the Carter Robinson Mound Site (44Le10). Principle Investigator: Maureen Meyers.
2016 Graduate Field Assistant, Archaeological Investigations at Rowan Oak, University of Mississippi Public Archaeology Class, Principal Investigators: Maureen Meyers and Tony Boudreaux.

Grants and Awards
2016 Francis James Award, University of Mississippi
Conference Papers and Poster Presentations
2017 Erin Cagney, Robert Capps, and Emily Warner

Research Interests
Native American Studies, Southeastern Archaeology, Historical Archaeology, Ethnohistory, Lithic Analysis, Warfare.

Professional Associations
Mississippi Archaeological Association 2017-2018
Southeastern Archaeology Conference 2016-2018