An assessment of the Chesrow complex (older than Clovis?) in southeast Wisconsin

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An Assessment of the Chesrow Complex (Older Than Clovis?)

in Southeast Wisconsin

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ABSTRACT

The colonization of the Americas has been a major focus of archaeological research. The presence of highly mobile hunter-gatherers at ~11,200 B.P. was thought to represent the first appearance of humans on the landscape. This idea has been challenged by the discovery of several pre-Clovis sites across both continents that seem to have dates much older than 11,000 B.P. One example is the Chesrow complex in southeast Wisconsin. Evaluating the legitimacy of a pre-Clovis age for the complex would provide new evidence that could be incorporated into existing models for the migration and occupation of North America along with human impacts on the environment at the end of the late Pleistocene.
CHAPTER 1
INTRODUCTION

The colonization of North America at the end of the Pleistocene around 12,000 years ago marks the culmination of a process that began 1.8 million years ago when human ancestors left Africa for the first time (Ferring et al. 2011). Technological developments and behavioral adaptations enabled groups to manage and thrive in previously unknown environments as they dispersed across the planet, with the exception of Antarctica. Though the Americas were the last places to be colonized, the archaeological record associated with these people offers information on the colonization process and how they survived and flourished in a new and changing environment (Fiedel 2004; Kelly 2003).

The antiquity of humans in North America was long thought to be very brief, especially compared to that of the Old World. It was not until undeniable artifacts were uncovered in association with extinct bison remains at Folsom, New Mexico, that a deep time framework for North American prehistory was broadly accepted (Meltzer 2009). Direct dating methods did not allow for an absolute age for the materials, but estimates were upwards of 10,000 B.P. Yet more discoveries, this time at Blackwater Draw near Clovis, New Mexico, revealed another culture associated with extinct animals (Hester 1972). It was this culture, named after the nearby town Clovis, which would later be demonstrated to be the oldest culture in North America after the development and implementation of direct dating methods (i.e. radiocarbon dating).

With the discoveries in New Mexico, a new chapter in North American archaeology was opened. Years of research were spent trying to understand and identify the various aspects of daily life that allowed the survival and expansion of the first human groups in North America (Holen 2001; Surovell 2000; Waguespack and Surovell 2003; Walthall and Holley 1997). Due to these efforts, a hypothesis was formed (the Clovis First Model) that sought to explain the appearance and spread of humans across the continent beginning with Clovis. These were thought to be highly mobile groups that hunted large mammals as their primary subsistence strategy and utilized exotic raw materials for their tools (Haynes
2002; Tankersley 2004). Though the Clovis first model had widespread support, not every archaeologist was supportive.

Claims began to emerge that there were people, pre-Clovis, in North America as sites were excavated containing material older than Clovis, for example Meadowcroft Rockshelter (Adovasio et al. 1998), Monte Verde (Dillehay 1987, 1997). The majority of these were brought to prominence with fanfare by their supporters but later died as scrutiny and outside examination demonstrated errors and inaccuracies surrounding these claims. Slowly but surely the majority of sites with claims of a greater antiquity than 12,000 B.P. were laid to rest in the pre-Clovis graveyard (Meltzer 1995). Issues over taphonomic history, stratigraphy, misidentification, and misinterpretation were often the reason for their dismissal. After the sudden burst of purported pre-Clovis sites, it seemed that researchers were focused on identifying the first human occupants of North America (Meltzer 1989) with Clovis as the likely candidate.

Even with the overwhelming skepticism, proponents of pre-Clovis, or sometimes referred to as Older-than-Clovis (OTC), were not deterred (Bonnichsen and Schneider 1999; Waters et al. 2009). One prominent idea is the Solutrean hypothesis, which claims that humans crossed the Atlantic from Europe and settled, at least in part, North America (Stanford and Bradley 2012). This scenario received massive amounts of media coverage and in turn archaeological coverage as prominent scholars investigated the evidence for these claims. Arguments were exchanged (Dillehay et al. 1999; Fiedel 2002; Haynes et al. 2007; Waters and Stafford 2007) and the battle raged as both sides sought to determine who these colonizers were and when they arrived. However, not all sites or hypothesis received the same amount of attention as the Solutrean hypothesis, much to the detriment of all interested in truly understanding the prehistory of North America.

The persistence of a pre-Clovis idea has important implications for North and South American archaeology and the natural history of these continents. Knowing when, where, and how humans arrived in the Americas would directly impact current hypothesis about the events of the late Pleistocene. For instance, the presence of humans at Paisley Caves (Jenkins et al. 2012), (Figure 1), ~1,000 years before
the currently known dates for Clovis would mean people arrived much earlier than expected. The other sites in Figure 1 present a similar challenge. If they truly represent a much older occupation of North America, as some have suggested (Adovasio and Pedler 2013), this would mean our understanding of the timing of the colonization of North America is completely wrong, which in turn would mean ideas concerning human impacts on the environment would be incorrect.

The desire to understand and know who the first Americans were has piqued the curiosity of countless researchers. The exact route these colonizers would have taken is still unknown (Mulligan and Kitchen 2013; Anderson et al. 2013) and new sites continue to provide more questions than answers (Reference). Curiosity has passed from researchers to the public which demands even more rigorous standards for evaluating claims about the past. Sites that have faced relatively little scrutiny can be used to fuel new hypothesis, regardless of the validity of the data. To resolve this issue, sites with pre-Clovis claims must be re/evaluated to test the validity of the hypothesis.

The Chesrow site in southeastern Wisconsin and the type site for the Chesrow complex (Figure 1) has been used as evidence for a pre-Clovis occupation. Upon discovery, the Chesrow complex was thought to represent a Late Paleoindian occupation that had highly diverse projectile point morphology, even though all projectile points were collected from the surface and no direct dates were (or are) available for the site (Overstreet 1993a). Further survey and excavation in the area produced sites with artifacts attributed to the complex and the remains of several mammoths. The discovery of purported artifacts in association with mammoth remains generated the idea that pre-Clovis hunters preyed upon these large mammals. Radiocarbon dates in excess of 12,000 B.P. were obtained and therefore pre-Clovis populations must have existed in Wisconsin, or so the argument goes. Exactly who these pre-Clovis people were and what their culture was like was unknown but a connection was proposed between the proboscidean sites and the Chesrow complex.

Besides criticisms of artifact misclassification (e.g., Ellis 2004; Mason 1997) and misinterpretation (Loebel 2005) the Chesrow complex has remained largely unknown. This has not hampered the efforts of OTC proponents in using the site(s) as evidence in support of their hypothesis,
nor have the criticism been thoroughly examined and tested for validity. Without a direct or relative age for the Chesrow material it is difficult to reliably accept or deny either side necessitating alternative methods for evaluation. A reevaluation of the Chesrow complex represents a unique and necessary opportunity for two reasons:

1. The Chesrow complex consists of several interrelated sites, rather than a single site or artifact, that have been interpreted as an ice-margin adaptation of mammoth hunters;
2. The longevity of the Chesrow complex as a potential candidate for an OTC culture.

Understanding the exact nature and temporal location of the Chesrow complex and associated proboscidean remains has the potential to greatly alter our understanding of human-proboscidean interactions as well as the timing and nature of the first human occupation of North America. Due to the importance of these questions it is integral to examine the nature and role of the Chesrow materials in Wisconsin prehistory, the taphonomic history of these sites, and the mammoth remains. Researchers have cited Chesrow as representing a legitimate pre-Clovis complex, or at the very least a potential candidate (Adovasio and Pedler 2004:154-155; Haynes 2002:49-50; Stanford and Bradley 2012:112-113; Waguespack 2007:64). This further demands a need for a comprehensive analysis of the complex to determine the validity of the interpretations.

Should the claims of an OTC age be true for this complex, it would provide unequivocal evidence for the earliest occupation of North America. Also, a connection between the Chesrow complex, or any human group, and proboscidean remains would alter the currently understood subsistence strategies of hunter-gatherers along the ice margin. In order to fully evaluate the above claims, it is crucial to analyze the lithic assemblages, geologic settings, and taphonomic history of these sites. If the evidence for these claims cannot be verified then the Chesrow complex must be removed from the list of possible OTC sites and/or the interpretation of the associated mammoth remains as resulting from human butchery must be rethought.

Beyond simply determining the validity of pre-Clovis this research has broader implications for the natural history of North America. The interpreted behavioral patterns of the Chesrow complex does
not fit with current ideas for Paleoindians, which are thought to be highly mobile hunter-gatherers that colonized the Americas (Yesner et al. 2004). Furthermore, the legitimacy of the Chesrow complex would likely require revisions of current models for colonization of the Americas. A focus on proboscideans for subsistence additionally would alter human-proboscidean relationships, which could impact ideas surrounding the extinction of late Pleistocene megafauna. While evaluating the Chesrow complex will not close or open the case for pre-Clovis in North America, it does provide an opportunity to examine one e complex used as evidence used for arguments of a pre-Clovis occupation as well as a better understanding of southeast Wisconsin prehistory.

The goal of this thesis then, is to evaluate pre-Clovis claims in southeast Wisconsin. This will be done by primarily focusing on the faunal and archaeological evidence and, secondarily, on the radiocarbon and geologic data. To accomplish this human behavior during butchery of large mammals and archaeological patterning of kill/butchery sites will be examined. With these expectations, we can then evaluate the evidence from Wisconsin against the broader archaeological record.
CHAPTER 2
PREHISTORIC MAMMAL HUNTING IN NORTH AMERICA

Hunting in North America has provided a rich and fairly well documented archaeological record (Frison 1991). Large mammals, especially bison, have been a focal prey for people from the Paleoindian to Historic period. This has resulted in a well-studied record and encompassing body of literature (e.g. Frison 1991). While there have been shifts between the species of choice and the methods employed for their procurement an overarching pattern can be seen:

1. The presence of projectile points and other lithic artifacts associated with procurement and butchery;
2. Specific carcass elements that are targeted for exploitation; and
3. Site structure at kill-butchery locations

These patterns can be used to evaluate and assess sites that have been interpreted to represent similar behavioral patterns.

Before trying to interpret what a site may about prehistoric behavioral patterns the context must first be identified. Several sites provide evidence for complex taphonomic histories, for example, Fetterman (Byers 2002), UP Mammoth (Haynes 2013), and Domebo (Hofman 2001). No longer can archaeologists claim association solely from the proximity of artifacts with faunal remains. Additional evidence is necessary to evaluate new ideas about human behaviors and site function.

Faunal Expectations

The role of proboscideans in human subsistence strategies in North America has seen debate which has been centered on the importance, or existence, of mammoth hunting (Byers and Ugan 2005; Haynes 1989; Surovell and Waguespack 2008). Studies have shown that Paleoindian hunting technology did have the capability of penetrating proboscidean vital organs (Frison 1989). The feasibility of actually finding, killing, and then butchering a mammoth/mastodon must be seriously considered. A model has been proposed that examines this problem and concludes that a focus on mammoth hunting was unlikely
(Byers and Ugan 2005). Regardless of the hypothetical pros and cons of proboscidean exploitation, the evidence must be based within the archaeological record as well as the context and association of artifacts.

A lack of consensus between archaeologists concerning the validity of proboscidean hunting must seem odd as the deluge of data supporting the exploitation of other species can be found throughout the remainder of the archaeological record. Several sites have been interpreted as kill/butchery locations where Paleoindians procured resources from proboscideans (Frison and Todd 1986; Graham et al. 1981; Hannus et al. 1997; Holliday et al. 1994; Johnson and Holliday 1981; Shipman et al. 1984). A series of fourteen sites are accepted by Grayson and Meltzer (2002) as indicative of human-proboscidean interactions, though this list has now expanded to 15 with the addition and removal of some sites (Grayson and Meltzer 2015).

These often have complex taphonomic histories or are isolated finds with supposed evidence of butchery leading to an ambiguous history of human-proboscidean relations. A few sites have withstood the test of time, such as the Colby Mammoth site, and are the likeliest candidates for what mammoth exploitation may have been like. Even these sites which are lauded as locations where mammoth hunting by humans occurred do not contain the undeniable evidence of these interactions like that of the famous Folsom point found in direct association with the rib of a bison. If this is the case, then the questions must be asked of why there is a seemingly lack of mammoth kills and what do mammoth kills look like?

Attempting to identify the type/s of subsistence strategies employed by Clovis hunter gatherers has been a long and largely fruitless debate that has endlessly circulated around the few sites that actually contain faunal remains. Significant effort has been expended in an attempt to argue for either a generalized subsistence strategy or specialized, and in this case a big-game focused, hunting strategies for Paleoindians (Byers and Ugan 2005; Haynes 2002; Waguespack and Surovell 2003). Furthermore, the few sites that do contain the remnants of Clovis subsistence strategies are spread across the North American continent, in various environments, and at different periods of time. The likelihood of this supposedly homogenous culture retaining a uniform subsistence strategy across all space and time is
highly unlikely. Therefore, to fully understand and appreciate the behaviors exhibited by this now extinct culture/s it must be acknowledged that the data for what Clovis people ate is slim and cannot be said to represent the adaptations of this population across space and through time. With that, examples from other regions can be used as examples and potential explanations of Clovis behavior/s, with the understanding that these are not almighty standards or all-encompassing rules.

In order to determine what a mammoth kill would look like the spatial distribution of materials and the expected types of artifacts present must be identified. This can be accomplished by analyzing verified kill sites of mammoths, bison, and other large species that were hunted by humans. Even with the differences between the species a series of patterns should be visible, such as the presence of projectile points, lithic scatter/s, and general waste from human activity. This does not exclude the mammoth sites in southeastern Wisconsin. If they are to be attributed at legitimate kill sites then they should meet some, or all, of the following criteria:

1. Presence of unequivocal human artifacts in direct association with the remains;
2. Evidence for the utilization and/or butchery of the animal, such as lithic waste material or logical and undeniable butchery patterns; and
3. An understanding of the taphonomic history of the site which would rule out any other potential explanation for the formation, distribution, and modification of the materials.

If the sites that have been proclaimed as providing evidence for mammoth exploitation can meet these criteria then they may be used as standards for evaluating other potential sites with proboscidean remains. If not, then we must reanalyze and rethink our interpretations of what process(es) were responsible for the formation of these sites.

A series of publications has been produced which examine the role of humans in the exploitation of mammoths. For the purpose of this discussion and for the sake of brevity only a few of these will be examined by the criteria presented above. These will be the Colby Mammoth site (Frison and Todd 1986), Murray Springs (Haynes and Huckell 2007), the Fetterman Mammoth (Byers 2002), and the Domebo
Mammoth (Leonhardy 1966). The reason for the use of these sites is largely due to the extent of publications available concerning these sites and the high quality data presented.

As is the case with many archaeological sites, the Colby site was discovered during construction operations (Frison and Todd 1986). Remains of seven mammoths were recovered along with four fluted projectile points and thirty pieces of debitage. The presence of human artifacts immediately raised questions about the potential role of humans in the death and/or interaction with the mammoth carcasses. Isolated bone piles were observed by the authors which were interpreted as the direct result of human activities. A large amount of data was collected that the authors used to argue against natural processes for the creation of these piles. This combined with the presence of undeniable human artifacts and lithic waste material was used as evidence to hypothesis human hunting and butchery of mammoths.

Murray Springs saw several episodes of excavation that uncovered what was interpreted to represent multiple activity areas and the faunal remains of several species of animal, including horse, bison, and mammoth (Haynes and Huckell 2007). The number of artifacts and faunal remains varied for each activity area of the site. Upwards of several thousand flakes were recovered along with formal tools and projectile points. The coexistence of lithic materials and faunal remains were interpreted as representing a direct association between prehistoric humans and their prey; which is often the case in archaeological sites. The discovery of a Folsom point with extinct ice-age bison provided the necessary evidence for a deep time in North America, but does the presence of artifacts next to animal remains directly indicate an association or simultaneous temporal occupation? In the two examples provided above this was deemed the case, but not the universal truth.

Excavations at the Fetterman mammoth and the Domebo mammoth recovered lithic material and provide excellent examples of methods in order to test for association between objects. The Fetterman mammoth was excavated in 1986 after avocational archaeologists discovered the site (Byers 2002). Artifacts were recovered along with mammoth remains, and seemed to show a connection between humans and their potential proboscidean prey. Sixteen artifacts were recovered, mostly consisting of flakes, though six different material types were represented. Furthermore, no cut marks were observed on
the bones even with relatively low root etching or other characteristics that destroy bone surface and obscure human modifications. Other marks were observed, but these were determined to be “anomalous marks that are inconsistent with cut mark morphology (Byers 2002:425). The question still remained of whether the artifacts recovered were directly associated with the mammoth remains, or if they were later intrusions. Byers (2002:431) observed differences in the weathering stages between and on bones. This evidenced that the burial of the mammoth had been incremental, leaving some aspects of various elements exposed while others had been buried. Byers’ analysis showed that the artifacts had been deposited after the partial burial of the mammoth remains and were by no means representative of human interaction with the hunting or butchery of the mammoth.

The Domebo mammoth was excavated in 1962, along with several artifacts. The site is Clovis age and the presence of artifacts, including several Clovis points, along with the mammoth remains was thought to provide additional evidence for Clovis mammoth hunting and/or butchery of these animals. This was based solely upon what was thought to be an association between the faunal remains and the lithic artifacts and the literature described it as a kill site (Hofman 2001:95).

Hofman reanalyzed the evidence for an association between the artifacts and the faunal remains; as the simple presence of artifacts does not directly prove coexistence. A lack of cut marks and/or general butchery marks was observed, though the bone surface was said to be in poor condition (Hofman 2001:100). It was concluded that there was a lack of evidence for establishing an association between the artifacts and the faunal remains (Hofman 2001:100). What this demonstrates is that even with diagnostic artifacts of a known culture and age, there is not always evidence for association even when the materials are recovered from the same site. Other processes, such as fluvial transport or multiple depositional stages, could be responsible for the formation of the patterns thought to be the result of human behaviors; similar to the patterns observed in southeast Wisconsin.

Locations that contain both lithic materials and the remains of mammoths have been declared as both indicative of human predation and the product of natural taphonomic processes. The above sites all contain undeniable human artifacts, and yet two have been demonstrated to not be the result of human
behaviors. Therefore, scholars must be careful when analyzing the veracity of claims for association/s between artifacts. Proximity of materials does not immediately evidence human behaviors as responsible for their spatial distribution, nor a direct association of those materials.

**Mammoth Hunting**

A question in North American archaeology is whether or not humans actively hunted mammoths and what their impact was on these large ice age animals (Haynes 1999). This has implications for the extinction of these animals and the occupation of North America. If people were targeting proboscideans for exploitation it would significantly alter our understanding of hunting patterns during the late Pleistocene, but we must return to the question of whether or not people actually hunted mammoths, and if so how frequently.

Reliance has often been placed on experimental and actualistic data to determine if human technology could be used to hunt mammoths, whether they would even bother, and what the taphonomic signatures would look like if they did. One of the most well-known experiments concerning mammoth hunting was by Frison (1986). Excavations at the Colby mammoth site seemed to indicate that humans may have had a role in the death of several mammoths, however, it was unknown whether or not Clovis technology could even pierce the hide of one of these great beasts, let alone inflict a mortal wound. Though mammoths were extinct, even back then, Frison set off to find the next best thing: African elephants.

A series of dead elephants were used in the experiment and Frison observed that Clovis technology could indeed pierce the animal as well as cut the thick hide. Clovis people had technology capable of killing animals of this size, but could they process it? Herein lies the even greater question than simply, could people hunt and kill mammoths. Every decision a hunter-gatherer makes runs the risk of causing harm to the individual and/or the group. When deciding what animals to hunt a plethora of variables are involved, such as season, weather, distance, animal size, and food supplies. An animal that might be taken during times of food stress might not be considered when food is plentiful (Broughton et al. 2011). Time of year and the type of environment would also impact the available food types, as plants
grow at certain times of the year and animals migrate. Most importantly in this case, is the size of the animal.

The larger an animal is the more time and effort must be expended in order to process it, especially when dealing with large game animals (Kelly 2013:47). Available group size and distance of transport heavily influence the decisions made (Kelly 2013:46-52). For instance, a group of thirty individuals can butcher and process a larger quantity of mass than a group of five, holding time constant. Additionally, the evolution of technology would be directly impacted by the effort, or handling time (Bright et al. 2002). This must also be combined with the transport distance when determining the value of butchery. Several short trips may allow for an increase in the amount to be butchered, while a long distance may see only one trip made (Kelly 2013:96-102). The conclusion is that the decision of what to hunt and butcher is never an easy one, especially when dealing with an animal as large as a mammoth. A well-known example of this is Byers and Ugan’s analysis (2005) of the risk/reward of hunting based on the size of an animal. While the overall return rate for a mammoth ranked the highest amongst all species used in the study, the encounter rates would limit their importance. Mammoths may have indeed been hunted or scavenged by Paleoindians, however, based on the data most hunter-gatherers would not actively hunt them; but what did happen when these animals were butchered and what would the archaeological signatures be?

The amount of meat present on a proboscidean represents a large commitment for those involved with its consumption. Time must be spent butchering the animal. Then those parts must be transported to the site of consumption. Additionally, in a time with no refrigeration, the problem of storage loomed heavily upon all involved. Drying could alleviate some of this concern, but most likely not all. In fact, it would be helpful to think of the mammoth itself in the sense of patches, much like many scholars deal with resource use and mobility across the landscape (Meltzer 2004). The sheer abundance of resources would make it more likely for one section of the animal, such as the leg, to be butchered first. Once the first patch had been depleted then the next patch, i.e. the next leg, should be moved to. This should not be taken to mean the complete removal of meat from the limb. If butchery occurred at the kill site then there
would be very little gain in removing every scrap, especially when next to a fully fleshed leg. This should continue until all accessible meat has been removed. Again, the number of people present greatly effects butchery time which in turn influences the decisions made. Additionally while experimental butchery can occur it should not be assumed that this was an easy task.

After one side has been butchered the problem arises of how to access the other; flipping an elephant is no simple feat. Experiments have shown that upwards of fifteen human adults are necessary (Frison and Todd 1986) after butchering half of the animal, and in some instances modern equipment was necessary to access the opposing side (Huckell 1979; Laub 1992). While it is possible to turn over one of these beasts, it does not mean that this would always be the best idea. Keeping in mind that our hypothetical hunter-gatherers have just sated their appetites with the meat of half an elephant; is the reward worth the effort? The number of people necessary for the movement of a proboscidean would likely be a hindrance to most groups of hunter-gatherers, especially the low density groups that first occupied North America (Kelly and Todd 1988). Even if groups had the numbers necessary the effort necessary is extraordinary and the reward fairly low. While accessing the opposite side of a proboscidean would provide additional meat, this would likely not be necessary after first butchering half an elephant prior and then having to store it.

Overall, the likelihood that a proboscidean would be fully disarticulated by humans is low. The transportation of portions of the animal could increase the amount of butchery, however, this again would likely be limited to one side. Secondary butchery and processing would most likely be focused on limbs as these are the most easily transportable complete packages. In regards to the Schaefer and Hebior mammoths, these represent the primary location of deposition. The majority of the animals were represented at these sites, meaning that if butchery did occur it happened at these locations. The dispersal of bones at these sites has been used as evidence of complete disarticulation and exploitation which has been shown to be unlikely. If humans did hunt and/or butcher these animals, they did so in a manner that seemingly defies logic and defined behavioral patterns. Observing natural deaths of modern African elephants as well as their behavior during life provides additional explanations.
The processes responsible for disarticulation are highly variable and difficult to determine (Lyman 1994:161-163). Animals may trample or disturb remains. This may result in the crushing and/or displacement of elements from the rest of the carcass. Instances have been observed of herbivores chewing on bones. This modifies and disturbs the remains from the initial depositional location. This is especially true at die-off locations where elephants may manipulate and damage the remains of other elephants using their feet, for a visual see (Douglas-Hamilton and Douglas-Hamilton 1975).

Observations of African elephants have shown that various processes can act upon proboscidean remains before burial (Haynes 1991). In one example, Haynes excavated the remains of a young elephant that had died and been buried by a collapsed elephant-dug well. The remains were “unbroken and in complete articulation” but “all limb bones were out of articulation” (Haynes 1991:135). No humans were responsible for the formation and distribution of the remains, and yet they were disarticulated. Furthermore, several maps (Haynes 1991:152-153) show elephant remains that have been disarticulated and scattered without any human involvement.

With this framework in place, it can then be used to analyze and evaluate potential butchery localities, such as those found in southeast Wisconsin. Determining whether or not a mark is a result of butchery activity or some other form of processes is extremely difficult. Since this is the case, rather than arguing about the origin of these marks, it is more profitable to discuss the placement and pattern of marks to determine if they do indeed follow the expected patterns of butchery.

During butchery cutting and de-fleshing strokes can at times come into contact with bone, leaving behind marks. These cut marks are often used as direct evidence for the presence and intensity of butchery. However, caution must be taken when analyzing these marks. Processes unrelated to human activity can produce marks that have the same characteristics as those resulting from humans. This can lead to misidentification and misinterpretation of site function. Therefore, understanding the taphonomic history of a site is of utmost importance as well as identifying the logical patterns that human butchery may produce.
A key point must be made and understood when dealing with butchery patterns on faunal remains. Marks on bone are not intentional, but rather are accidental by-products that can impede progress and dull tools. This means that ideally, a butcher should never contact bone with their tool. It has been widely thought that instances of stiff-carcass butchery are more likely to produce marks (Lupo 1994; Saunders et al. 1994) as more effort is required to disarticulate the elements.

If butchery occurs on a fresh, or supple, carcass butchery marks are thought to be less likely, though this has been brought into question (Egeland 2003) and others have argued that scavenging is less likely to produce butchery marks (Bunn and Ezzo 1993). When/if they do occur they will not do so randomly. Butchery strokes are focused on specific areas depending on the type of butchery occurring (Binford 1981). For instance, during disarticulation the intent is to separate limbs from the carcass. This requires cuts along the intended separation location which normally is the joint. The soft tissue at these articulations can be severed much more easily than attempting to saw through bone resulting in preferential targeting for butchery and a higher likelihood that cut marks will be located there. Therefore, marks located near articulations, especially on long bones, have a higher probability of being the result of butchery activity by humans.

After a limb is disarticulated, it often will be processed further and meat removed. While this is a generalization of these behaviors they have precedent throughout the archaeological and ethnographic literature (Binford 1978, 1984; Lupo 1994). Certainly deviations could occur, but without clear evidence for this, the broader human behavioral pattern should be incorporated in an attempt to discern the activities of a site. With this in mind, marks may occur along the bone shaft during the removal of meat. However, the removal of meat directly from the bone is unlikely to result in tool contact due to the lack of a need to access the bone surface. Strips of meat can be removed from the bone with parallel cuts to the bone further reducing the chance of causing visible marks. Furthermore, direct access likely represents the intent to further modify or process the element which could obscure butchery marks or produce additional marks, such as those resulting from accessing the marrow cavity.
The debate concerning the shape of marks and their origin has produced a large amount of actualistic data (Capaldo and Blumenschine 1994; Fiorillo 1989; Hill 1989; Oliver 1989; Olsen and Shipman 1988). However, this data simply provides a baseline for what marks from some activities would look like, rather than an all-encompassing rule that governs all bone modification identification. In other words, it provides an example for a singular activity, but they do not provide examples for all possible processes through time, much less the subtle variability within even the actions of a group of humans. The shape of a mark may help understand the taphonomic history of a location, it does not rule out the possibility of misidentification. Issues with experimental data have been demonstrated. Olsen and Shipman (1988) intentionally manufactured cut marks on bone which were then compared with trample marks. A difference was observed between the cut marks and trample marks. The validity of this experiment has been called into question in regards to a bias as the marks were made intentionally rather than accidentally (Haynes 1991:163). The results then may have been “much larger and deeper and more sharply incised than are many true cut marks made by humans” (Haynes 1991:163). This was one of the references used when identifying marks (Johnson 2007:67) and therefore must be viewed with caution; regardless of time.

Archaeological Expectations

An overwhelming reliance has been placed upon the presence of lithic materials when determining the amount of human impact on the deposition of materials at archaeological sites. There is good reason to do so. Organic material is prone to decay and can be ambiguous in regards to modification by human agents. Lithic material, as a whole, is much less likely to be destroyed during deposition and burial while often capturing distinct patterns of human modification; besides being a widely used material in prehistoric tool kits. However, this does not mean that a site must have lithic material for it to be deemed an archaeological site. Debitage is often the most common type of lithic artifact to be recovered from an archaeological site, even though the presence of this waste material can often be misleading.

Efforts have been expended to distinguish between flakes resulting from the manufacture of stone tools and their relatives that result from other natural processes. Unfortunately, both human and non-
human processes use very similar methods during the initial stages of lithic reduction. Sites, such as Calico (Haynes 1973; Patterson et al. 1987), have faced scrutiny because of claims surrounding misidentification of cobbles and flakes as evidence for human occupation. Therefore, utmost care must be taken when declaring a flake human in origin, especially when lacking diagnostic tools.

Human butchery activities leave behind distinctive archaeological patterns. These often consist of animal remains and discarded waste material. Large-scale bone beds have been of especial interest in the Plains and Southwest, for example the Hudson-Meng site (Todd and Rapson 1999), as these were some of the earliest sites that provided irrefutable evidence for humans in conjunction with extinct animals. They have also provided examples of the type of modification to be expected from butchery, which elements are more likely to be targeted, and the types of behaviors and associated artifacts. From this, other potential kill/butchery sites can be examined and the reliability of evidence tested to determine the likelihood of a locality representing a human induced kill.
CHAPTER 3
THE CHESROW COMPLEX

The Chesrow complex has been interpreted as representing a late-glacial occupation of southeastern Wisconsin that was adapted to life along the Ice-margins (Overstreet 2005:191). Tundra was the predominant environment at this time and these people would have exploited species adapted to the cold climate, such as caribou and mammoth. Additionally, exploitation of resources along the border of the boreal forests has been suggested (Overstreet 2005:191). The utilization of local materials was a focal characteristic and seems to indicate relatively low mobility. A uniform widespread projectile point morphology, like that of Clovis or Folsom, has not been found and the morphology of Chesrow points has proven to be highly variable.

The age of the Chesrow complex has been interpreted from several pieces of evidence. The first is based on the geology of the beach ridge upon which the sites are located, with the exception of the sites with proboscideans. This is a Calumet phase ridge and radiocarbon dates place it around ~11,000 – 10,000 B.P. (Overstreet 1993a:9-18). However, Overstreet has interpreted the potential for an earlier ridge to be evidence of an age of ~13,000 to 12,000 B.P. (Overstreet 1993a:15-17). The other evidence are radiocarbon ages taken from nearby proboscidean remains that have been dated to ~12,300 B.P. (Overstreet and Kolb 2003). The association between the Chesrow complex and these animals is based on proximity, cut marks, and the presence of local chert in both assemblages.

These interpretations are based on evidence from ten sites: Chesrow, Cabbage Patch, Lucas, Scott, Wispark XXXI, Hasting, Fenske, Mud Lake, Schaefer, and Hebior. These were investigated during surveys in southeastern Wisconsin (Overstreet 1993a). Two of these, Chesrow and Lucas, have buried materials though no diagnostic material from the Chesrow complex was recovered from these excavations.

Chesrow

Chesrow was first intensively explored during survey and evaluation for expansion of the Pleasant Prairie sewer systems, located in Kenosha County, southeastern Wisconsin (Overstreet 1993).
Chesrow was placed on the National Register of Historic Places in August of 1977, but no additional investigations had been implemented. The initial investigations recovered both surface and sub-surface materials. The majority of sub-surface materials was debitage with the only temporally diagnostic artifact being a projectile point. At the time of initial reporting, the exact nature of this, and the other projectile points were limited solely to an inferred Paleoindian occupation of the site as, “the focus here was to provide basic descriptive information rather than to assess potential cultural affiliation within the fluted point tradition” (Overstreet 1987:29). The interpretation derived in 1987 was that undisturbed deposits were located in a Calumet Beach ridge (a ridge formed by changing levels of lake Michigan and dated to ~11,000 B.P.) and that these materials were associated with a fluted point tradition based upon “the information derived from surface collection and from area B” (Overstreet 1987:42).

**Cabbage Patch**

The site was discovered in 1914 following interviews with local collectors (Overstreet 1987:1). Development in the areas was deemed to potentially impact Cabbage Patch the need for further surface and subsurface investigations was reported. A similar set of data was recovered from Cabbage patch as that at Chesrow. Diagnostic material was recovered from surface context and a mixture of debitage was excavated from the plow zone though “virtually all of 47 KN 56/134 had been subjected to cultivation, or, had been disturbed or destroyed by commercial and residential development” (Overstreet 1987). Even without a secure context or association, it was held that the materials recovered represented some form of Late Paleoindian or Early Archaic manifestation based upon projectile point morphology.

**Lucas**

Lucas was first noted from the discovery of a fluted point by a local collector. Several pieces of debitage, fire-cracked rock, and a broken hammer stone were later recovered (Overstreet 1993a:73). The location and elevation (slightly less than 182.9m) were said to be evidence of an age post 10,400 B.P. (Overstreet 1993a:77). Subsequent excavations were conducted in order to answer several questions concerning the material at Lucas, such as the age of the material and if buried material was present.
These excavations recovered debitage, bifaces, graves, debitage, hammer stones, and calcined bone (Overstreet 1994:41). It was determined that the material belonged to the Chesrow complex (Overstreet 1994:41), though no exact explanation for this was given. The spatial distribution of material at the site was interpreted to represent several distinct activity areas, though “we are at this point uncertain as to whether the structure of the Lucas site is a reflection of multiple occupations by a single group, or, if the clusters of material owe their origins to distinct social units” (Overstreet 1994:41-42). Additionally, the geologic issues were swept under the rug and a date of 10,700-10,400 B.P. was given, with a wider range of 10,000-11,000 B.P. (Overstreet 1994:51).

**Scott**

A discrete scatter of lithics from surface collections represents the only known material from the Scott site. Additional material was found west of the site in a “discrete concentration” (Overstreet 1993a:72) but how this material is related has not been determined. The overall importance of Scott seems to be reliant on the variety of projectile point types, all of which were attributed to the Chesrow complex. The absence of certain types of tools (wedges and gravers) were noted, though this “may be a result of collector bias” (Overstreet 1993a:73).

**Wispark XXXI**

Very little is known about Wispark XXXI. Other than the presence of a lithic scatter with a single Chesrow complex projectile point, no other information concerning the human occupation is available (Overstreet 1993a:73). The site is located near a perched bog named Wisbog. The proximity to this wetland setting was proposed as a potential attractant for human occupation. Overstreet (1993a:73) also states that “at this time data are not sufficient to interpret site function” and this remains the case.

**Hasting**

The material from the Hasting site was recovered during development in the area (Overstreet 1993a:77). Unfortunately, work was restricted to only surface collections and was later terminated by construction equipment. The material that was salvaged included artifacts from Archaic and Woodland occupations. The morphology of one of these points was said to be similar to the material recovered from
other sites attributed to the Chesrow complex (Overstreet 1993a:77) thereby providing evidence for a Chesrow complex occupation. Other tools, mainly gravers and scrapers, were thought to be contemporaneous with Chesrow but a lack of context made this tenuous at best.

**Fenske**

The Fenske site is represented by a complete femur and a complete humerus belonging to a proboscidean that were encountered in the mid-1920’s by railroad employees digging trenches for drainage tile. The specimens were turned over to the Kenosha County Historical Society Museum shortly after discovery, and remained unreported or unstudied for some 70 years. To the best of my knowledge, the first published, scientific account of the site and specimens is by Overstreet who reported that “butchering marks were discovered on the bones by D. Waison, D Joyce, and D. Overstreet and confirmed by J. Saunders and R. Graham of the Illinois State Museum” (1993b:6)

Beyond a few brief mentions, (Johnson 2006, 2007; Overstreet et al. 1993) which are limited to a paragraph, Fenske is relatively unknown. It was located in a post-glacial shoreline which was part of the Lake Border Moraine. Two samples were collected for radiocarbon dating which were 13,470 ± 50 B.P. and 13,510 ± 50 B.P. (Overstreet and Kolb 2003). However, the Fenske site has largely been ignored due to the lack of context and artifacts.

**Mud Lake**

The history of the Mud Lake site is very similar to that of Fenske. Remains of a mammoth were recovered in the mid-1930s during dredging activity of a spillway which drained Mud Lake (Overstreet 1993b:14). A total of 21 specimen, dating to 13,440 ± 60 B.P. and 13,530 ± 50 B.P. (Overstreet and Kolb 2003:94), comprising the radius, ulna, and manus were recovered and placed under the care of the Kenosha County Historical Society museum. Again, D. Waison, D. Joyce, and D. Overstreet discovered butchery marks which were then confirmed by J. Saunders and R. Graham at the Illinois State Museum. Similarly to Fenske, no artifacts were found in association with the remains or any other materials that could hint at a human presence.
Schaefer

The two most frequently discussed mammoth localities in Wisconsin are the Schaefer and Hebior sites. This is largely due to the recovery of potential human artifacts located at these sites, whereas the others contained no artifacts. The Schaefer mammoth was discovered in 1964 by workers digging trenches for drainage tiles who unearthed parts of a femur and tusk (Overstreet 1993b). As with the previous sites, "butchery marks on the femur" (Overstreet 1993b:5-6) were discovered by D. Joyce in 1990 during their tour of faunal remains at the Kenosha Public Museum.

Unlike Mud Lake and Fenske, information concerning the Schaefer site was greatly expanded after relocation and later investigations at the site. The first description of the site were limited to a very basic and brief synopsis. Test excavations uncovered additional proboscidean remains. Marks on the bone were again interpreted as signs of butchery. These marks and two pieces of red ochre were interpreted as evidence for an association between humans and the mammoths (Overstreet 1993b:6). Subsequent excavations uncovered undeniable evidence of humans, two flakes of local chert. The remains were later sampled for radiocarbon dating which resulted in an age of ~12,300 B.P. (Overstreet and Kolb 2003:94)

Hebior

Hebior was first reported in 1993 by Overstreet in a publication of the Great Lakes Archaeological Research Center. It was discovered while excavations were underway at the Schaefer site. A bone fragment was delivered to the researchers and spurred further activity at what would become the Hebior site. A singular publication produced the revolutionary news (Overstreet 1996). Humans had coexisted, in some form, with proboscideans in southeastern Wisconsin. This was due to the discovery of lithic material, four total (three chert, one dolomite), in association with the remains of a proboscidean. Further research (Overstreet and Kolb 2003:94) provided several dates for the remains centered around 12,520 ± 50 yr. B.P.
SUMMARY OF THE CHESROW COMPLEX

One common issue for all of these sites is a lack of a direct date that could provide their chronological place within the regional archaeology. Diagnostic material was located solely on the surface or in a cultivated area. The only exception to this was a projectile point from the Chesrow site that had been originally identified as a fluted point (Overstreet 1987:29). Later the same point identified as a Durst Stemmed style point (Overstreet 1993a:44) removing the possibility of buried material attributed to the Chesrow complex.

The complex was grounded on projectile point morphology as “the sample and context of projectile points is sufficient to infer ‘style,’ albeit one incorporating considerable variation” (Overstreet 1993a:77). Other materials found on the surface along with these new Chesrow points were assumed to represent the remainder of the Chesrow tool-kit. Besides a proposed morphology for Chesrow complex points the other connection was the use of local glacial cherts across all six sites. The same material was found at Schaefer and Hebior, which to some bolstered a claim for an association with Chesrow.

Even without any reliable relative or direct dates for the Chesrow complex, it was already deemed “as related to, or perhaps derived from, a local, or regional, or even extra-regional Clovis complex” (Overstreet 1993a:89) and “acceptable age estimates range from 10,000-12,000 years B.P.” (Overstreet 1993a). It was also at this time that the idea was proposed that “if the hypothetical association of the Chesrow Complex with mammoth and mastodon remains in Kenosha County is proven correct, the complex would date to sometime before 10,000 – 10,800 B.P.” (Overstreet 1993a:90).

Radiocarbon dates at Hebior and Schaefer provided a date of ~12,500, much older than previously thought. Marks on the mammoth remains were interpreted as cut marks and debitage was recovered from beneath the remains. For this to be true humans had to be present in Wisconsin before Clovis. Combined with the proximity and proposed association with the Chesrow complex meant that these people were responsible for the death and/or butchery of these animals and now represented an OTC occupation in southeastern Wisconsin.
IDENTIFICATION AND EVOLUTION OF THE CHESROW COMPLEX

A timeline of the publications containing information about the Chesrow complex provides an enlightening view of the development of the many interpretations of the sites, especially in relation to the age. The first three publications were the result of private contract surveys for the town of Pleasant Prairie. The first publication was released in 1987 by the Great Lakes Archaeological Center, Inc. (GLARC) (Figure 2) and provided more questions than answers, but some interpretations were gleaned from the data. Little was known about these sites and “Thus, testing was implemented to determine the significance of this…occupation” (Overstreet 1987). The main focus was typical of most CRM projects, in that local archaeological sites were surveyed and tested in preparation for the planned development of the area. Undisturbed buried materials at the site were “interpreted as part of a larger site complex affiliated with the Early Paleo-Indian or fluted point tradition” which was “based on the consistent level of materials at a depth of 28-40 cm. beneath the surface, the recovery of an in-situ fluted point in that horizon, and extrapolation via a small test excavation unit upslope where significant number of fluted points have been recovered” (Overstreet 1987:52). However, this statement does not match with the other findings as Overstreet states that “Only item 2…is from excavated context” (Overstreet 1987:29). Furthermore, no cultural affiliation was stated for the recovered projectile points. Even without a known culture and the plethora of questions still to be answered, it seemed that the Chesrow site presented some potentially important data.

The original report by Overstreet was not made widely available to the archaeological community and it was not until 1991 that a more general publication was provided in The Wisconsin Archeologist (Overstreet 1991). A new projectile point type was presented during a general survey of Paleoindian traditions in southeastern Wisconsin. The Chesrow complex was viewed by Overstreet as possibly representing “the terminal fluted point expression in Wisconsin” (Overstreet 1991:208) and that “on typological bases a date in excess of 10,000 years B.P., however, seems likely” (Overstreet 1991:209). The artifacts reported were only described as “tentatively identified with the Chesrow Complex” (Overstreet 1991:226) and “consistent with the range of variation for the Chesrow Complex” (Overstreet
1991:226). Similarities were observed between Hi-Lo and Chesrow complex projectile points which Overstreet seemed to indicate was simply variability of Chesrow points.

The year of 1993 saw much more activity as not one, but three, publications were released by Overstreet and colleagues. A second report was released by GLARC that “centered on identifying, locating, and surveying Paleoindian sites grouped around three known megafauna kill/butchery locales” (Overstreet 1993b). Twelve sites, some with multiple activity areas, were surveyed and briefly described. A part of this survey was to record sites with Paleoindian components, or at the very least artifacts, and among these was included the Chesrow complex. Little analysis had been accomplished but already statements were being made, such as “it remains to demonstrate a context of association between the butchered fauna and the Chesrow complex (or some other complex) even though the regional distribution presents Chesrow as the most likely candidate” (Overstreet 1993b: 72). Already the remains of several proboscideans were decided to have been butchered, even though in the same publication it was uncertain whether they had been disarticulated by humans, and that the Chesrow complex was responsible.

A smaller, but more widespread, article was presented in the 1993 volume of *Current Research in the Pleistocene* (CRP) (Overstreet et al. 1993). The presence of cut marks had been presented in prior literature, but was not widely distributed. Unfortunately, solid data and evidence for the cut marks was lacking. No pictures, descriptions, or even illustrations were provided of these “many unambiguous butchery marks” (Overstreet et al. 1993:75). Initial excavations at Schaefer were thought to provide evidence of disarticulation based on their spatial distribution and creation of a bone pile. Again, a possible association between the mammoth remains and the Chesrow complex was suggested, but this remained a “hypothetical relationship” (Overstreet et al. 1993:76). Without substantial and plentiful data, evaluation of ideas and interpretations is difficult.

The other publication of 1993 was the most comprehensive collection of data and interpretations, as well as the presentation of a fully formed Chesrow complex (Overstreet 1993a). The age of the complex was unknown but speculated to be some form of Paleoindian manifestation, ~12,000 to 10,000 B.P. This was based on the age of the beach ridges these sites were thought to be located on along with
projectile point morphology. The age of the complex was not the only unknown factor, as the overall significance of Chesrow was still unanswered. In fact, Overstreet stated that “This description of the Chesrow site lithic assemblage should be viewed as a preliminary summary” (Overstreet 1993a:69). Even after the years of research already spent, the only known characteristics of the complex were the variable morphology of the points and the dominance of local chert cobbles.

The role of proboscideans in a subsistence strategy was questioned, as “These data, collected primarily by SEM (scanning electron microscope) techniques and morphological and taphonomic analysis are also sans corroborating archaeological evidence and thus subject to alternative interpretation” (Overstreet 1993a:81). The proboscidean remains in southeastern Wisconsin; however, were viewed differently, even though the same evidence, butchery marks and taphonomic analysis, was the only available evidence. The only problem was that “Cut-marks and green-bone fractures, associated with human activity, cannot precisely be correlated with Chesrow Complex materials” (Overstreet 1993a:81).

In all 1993 publications, tentative evidence was presented for the butchery of mammoth and mastodon remains in Kenosha County (Overstreet 1993a:85, 1993b:5-6). These simply stated that butchery marks had been found on specimens recovered much earlier and deposited into local museums. No evidence or examples were provided to support these claims, except for two vague pictures, until much later likely attributing even more widespread skepticism. It seems odd that Overstreet would with one hand dismiss other sites as examples of mammoth butchery, while with the other present those he had discovered. The lack of a cohesive, published, taphonomic analysis until 2006-7 (Johnson 2006, 2007) certainly did not help progress the general understanding and knowledge necessary to evaluate and accept these claims. What this does demonstrate, is that the stage was being prepared to present the Chesrow complex as some new form of Paleoindian, mammoth hunting, archaeological manifestation in southeastern Wisconsin.

In 1994, the third publication by the Great Lakes Archaeological Center, Inc. concerning the Chesrow complex was released (Overstreet 1994). Additional survey reports were included for previously undocumented sites and Paleoindian materials, mostly in the hands of private collectors. Overstreet’s
position was very similar to that of his 1993 publication (Overstreet 1993a), which was that the Chesrow complex was some form of cohesive lithic assemblage and that the age was ~12,000 – 11,000 B.P. What is of even more interest and importance are his conclusions about the age in which the Lucas site was occupied. These were based on the formation of beach ridges from the rise and fall of Lake Michigan which:

Leaves us with two alternative, brief periods, when Lucas could have been occupied. The first, during the Two Creeks advance is very likely too early for the Chesrow Complex at approximately 12,000-11,000 B.P. This of course would place the Chesrow Complex and Lucas in a pre-Clovis paradigm which almost everyone would logically reject. (Overstreet 1994:61)

The Chesrow complex had already been projected as being associated with the Schaefer site nearby. Furthermore, the idea that a pre-Clovis population could even be present was utterly reject, based on a lack of evidence as well as the predominance of the Clovis-first paradigm. Now, it must be said as an aside that the benefit of the scientific method is the ability to test ideas and either reject or support these based solely upon the available evidence and logic. Therefore, it is not unthinkable for a researcher to reject the idea of pre-Clovis at first, but later change their mind after examining the evidence. However, this mindset had important repercussions later as the question of pre-Clovis gained more attention and traction within the ongoing debates.

These investigations spurred the release of a series of publications presenting small pieces of data from, now bustling, southeast Wisconsin. From 1995 to 1996 four additional articles were published in CRP, including the results of excavations at Schaefer (Overstreet et al. 1995), Hebior (Overstreet 1996), a chronology of mammoth and mastodon remains (Dallman, et al. 1996), and a reconstruction of the climate at Hebior (Fredlund, et al. 1996). A date of 10,960 ± 110 B.P. was obtained for Schaefer from standard bone collaged, which fit neatly with the previously hypothesized age for the Chesrow complex. Lithic material was recovered from both Schaefer and Hebior, which importantly was described as “the broken edge of a biface implement” (Overstreet 1995:40), “two bifacial chert knives”, and “a crude
dolomite ‘chopper’” (Overstreet 1996:36). This instantly implanted the idea that humans were directly responsible for the manufacture of these tools, while seeming to provide direct evidence for prior claims of the existence of cut/butchery marks on the proboscideans.

The Chesrow complex appeared once more in print in 1997. A paper covering the Paleoindian traditions in Wisconsin presented the Chesrow complex as a “possible addition to the list of Paleo-Indian cultures” (Mason 1997:93). The hesitation presented by the author, however, does not seem to extend beyond that sentence. Recovered materials were labeled as Chesrow complex projectile points and an association was tentatively proposed between Chesrow and nearby mammoth remains. Additionally, descriptions of the Chesrow complex in previous publications furthered the goal of accepting the Chesrow complex rather than presenting it as a possible addition to Wisconsin Paleoindian traditions. The only hindrance for prescribing an age to Chesrow was “Because of the absence so far of culturally diagnostic artifacts in association with the remains, the age of the ‘Chesrow complex’ remains to be established” (Mason 1997:94). What was established, at least to the author, was that “human involvement with those creatures is now beyond question” (Mason 1997:91). Schaefer and Hebior were now examples of a human occupation of proboscidean hunters in southeast Wisconsin. Diagnostic cultural material had not been recovered but the proximity of Chesrow complex localities with mammoth remains was used to present the possibility of an association between the two.

Radiocarbon dating has been employed to develop chronologies across North America. Prior dates for the Wisconsin proboscideans had placed them around 10,960 B.P. (Overstreet 1995) but in 2003, that changed. Overstreet and Kolb (2003) published new data for the Schaefer and Hebior mammoths covering the geochronology. New dates were presented that ranged between 12,200 B.P. and 12,600 B.P. and were “at least 1000 years older than sites with human modified mammoth remains in the Southwestern USA” (Overstreet and Kolb 2003:92). The new dates provided an age much older, and much more controversial. At this time the connection between the Chesrow complex and the faunal assemblages remained tentative at best, though the tone had shifted from presenting Chesrow as a Late Paleoindian manifestation to a “recently defined non-Clovis Paleoindian variant” (Overstreet and Kolb
Additionally, a connection between Chesrow and the mammoths would provide a definitive example of what a pre-Clovis culture would look like.

At this time, the findings in southeastern Wisconsin had become more widely known and skeptics began to raise their voices. Skepticism was focused on the identification of cut/butchery marks (Joyce 2013:478), the lack of diagnostic materials, and the veracity of the association between recovered lithic material and faunal remains (Cannon and Meltzer 2004; Grayson and Meltzer 2002). The debate focused more heavily around the Schaefer and Hebior, likely due to their excavated context. Mud Lake and Fenske were isolated finds thought to have butchery marks but lacked context or associated lithics. In regards to Schaefer and Hebior, much of the criticism was due to the lack of published and/or available data, with most publications containing the same information presented in prior articles. This viewpoint seemed to become more widely expressed with the discovery of material suitable for radiocarbon dating. Previously, the Chesrow complex had remained an enigma with potential geologic dates that could not easily be dis/proven. Recovery of faunal remains and advances in radiocarbon dating provided the data necessary to change that.

The Chesrow complex was never widely accepted and in 2005 efforts were made to rectify this. The main concerns faced were typological and chronological placement (Overstreet 2005:186 - 187), but the author also cited some instances of critics which were never published. The consensus was that if the Chesrow complex was valid, it should more likely be placed toward the end of the fluted-point tradition. However, publications (Mason 1997; Stoltman 1998) were presented by the author as evidence of their, at least tentative, acceptance of the Chesrow complex as “both have served as sounding boards and willingly have aided in identifying data needs; but both, once those needs were met, accepted new directions with scholarly excitement” (Overstreet 2005:187). The emphasis of acceptance was much more on the tentative, but the importance of the research was not lost. Additionally, the recovery of purported human artifacts with mammoth remains added further weight behind the Chesrow complex hypothesis. Both critics cite “instances of mammoth-mastodon-human-interactions” (Mason 1997:97) and “the two apparently butchered mammoths” (Stoltman 1998:64) in later publications; the same publications that the
The author cites as stating acceptance of the Chesrow complex. The Chesrow complex was now used as a model for occupation of a landscape devoid of humans along the ice-margin, regardless of the lack of information concerning its legitimacy.

One issue still plagued the acceptance of a human presence in southeastern Wisconsin at ~12,000 B.P.; the lack of published and available data for the proboscidean remains. A taphonomic study was conducted and in 2006 and 2007 the results were published (Johnson 2006, 2007). The first publication attempted to identify the processes responsible for the modification of the faunal remains. Natural weathering and other modifications were noted on many of the bones. The spatial distribution of the bones was thought to be the result of human interaction, rather than movement by water or some other process. What differed from earlier publications was the lack of a definitive stance regarding the presence or absence of cut/butchery marks. Rather phrases such as “Modification that may be cultural” (Johnson 2006:68) and “potentially cultural marks” (Johnson 2006:69) show a reluctance to clearly attribute these marks to human behaviors.

This reluctance was not present in another article published at the same time (Joyce 2006). A much stronger stance was, and still is, taken when discussing the presence of humans. The evidence cited to support a presence of humans, however, must be called into question. One was a report to the National Science Foundation and the other a conference paper. These are unacceptable as they are unavailable for general evaluation, which is especially important when attempting to prove a generally unsupported hypothesis. This did not hinder the declaration that “the Schaefer mammoth was a fresh carcass when butchered” (Joyce 2006:48) and that “the taphonomic study indicates a definitive human presence at the site in the late Pleistocene” (Joyce 2006:48).

The declarations continued past the taphonomic studies and delved straight into the lithic analysis. The possibility of the debitage being the result of natural processes, other than humans, was summarily rejected. In the words of the author, “Its thickness, cross-section, and width rules out the possibility of it being an edge sliver. It is a crest blade” (Joyce 2006:52). The entry of these objects into the bonebed was treated in much the same manner:
Recovery of lithic artifacts from under and in immediate contact with the innominate precludes any possibility of introduction from above through macro-pores that resulted from recent lowering of the water table through water diversion, and thus interpreted to be contemporary with the deposition of the mammoth remains (Joyce 2006:51)

Regardless of any other possibilities, the Schaefer and Hebior mammoths were determined to be at the very least butchered by humans much earlier than previously thought.

The following year, additional results of the taphonomic study were released (Johnson 2007). Marks and modifications of the bone surface had been identified as potentially human, or cultural, but without a formal yea or nay. The location and number of marks was documented for all four mammoth/mastodon localities; Schaefer, Hebior, Mud Lake, and Fenske. To determine whether or not a mark was the result of human activities they were compared with “established criteria for cultural marks…as well as additional features (i.e., trough walls, strokes, and stroke terminus) were used to describe and evaluate the marks” (Johnson 2007:67). The conclusion was that evidence was indeed present for the exploitation of these animals by prehistoric humans. The result was not unexpected, as the presence of cut marks had been stated from almost since the very moment the remains were rediscovered.

The matter of the Wisconsin proboscideans fell somewhat by the wayside. Some scholars cited them as potential evidence for pre-Clovis and others simply forgot them and the publications did not resume until recently (Joyce 2013). This contained an amalgamation of the background information and the data that had been presented over the years. Additionally, it raised some questions over the connection between the Chesrow complex and the proboscideans, and even the validity of the Chesrow complex itself. Joyce stated that “a number of issues need to be addressed if the complex is to be considered valid” (Joyce 2013:478) and that “the hypothesized link between Chesrow and the mammoths is not only tenuous but, in light of the above evidence and issues, nonexistent” (Joyce 2013:478). It seemed that the links of the chain were severed.
The timing of the distancing between the Chesrow complex and mammoths provides an interesting question. After all of the years they were used to support one another why would Chesrow now be removed? The reason that seems most likely is that the increase in support for a pre-Clovis, or OTC, paradigm furthered acceptance of the mammoth localities. These were well dated sites that seem to include evidence, beyond reliance on cut marks, for a human presence well before Clovis. Furthermore, the Chesrow complex never had an actual age from radiocarbon dating, or any other form of dating for that matter, which made it easier to put the two together. The main problem was that any criticism that Chesrow faced would also reflect poorly on the mammoth localities. It was simply no longer necessary to have a specified human presence in southeastern Wisconsin to justify stating that humans had butchered the mammoths there.

The debate surrounding the occupation of North America has spread, to a certain degree, beyond the archaeological community. Within the archaeological community both the Chesrow complex and the mammoths have been cited as legitimate, but even more importantly is their use by the general public. A recent publication by National Geographic presents Schaefer and Hebior as examples of a human presence well before Clovis. This could possibly be the case. Archaeologists may have found traces of the very earliest people to enter into America, but until that has been shown to be absolutely the case it is important to stress the questions surrounding archaeological discoveries rather than dictating to an ignorant public the “truth.”
CHAPTER 4
ASSESSMENT OF THE CHESROW COMPLEX

At first glance, the Chesrow complex seems to live up to the promise of a bona fide OTC occupation. However, in light of our expectations it falls short. There are several points that merit explanation, for example, the cut marks, absence of artifacts, and stratigraphic issues. There is no doubt that the items from Schaefer and Hebior are artifacts. The question is the nature of the association between the artifacts and faunal remains.

Faunal Evidence

The spatial patterning of the Schaefer mammoth has been described as “butchered, totally disarticulated and the bones discarded in a pile” (Joyce 2006:48), but what exactly does disarticulation mean in terms of human involvement? The presence and importance of humans has been often asserted, and yet Johnson states “while people may have played a role in at least disturbing the carcass prior to burial, it was the burial environment that had the greatest effect on the bones themselves” (Johnson 2006:75).

The majority of the taphonomic analysis of the mammoth localities has been focused on discerning if the marks seen on the bone surface are indeed butchery marks. Two publications by Johnson (2006, 2007) provide the bulk of the data for Fenske, Mud Lake, Schaefer, and Hebior. Johnson determined that the marks found on the mammoth bones were likely the result of human activity based on the location, shape, and number of marks observed. A total of 200 marks were determined to be of human origin, on 30 elements, across the four sites.

Disarticulation and de-fleshing activities will leave marks in particular locations, depending on the element in question. The Fenske mammoth is represented by a single femur, which has been stated to have a total of nineteen cultural marks. Johnson shows these marks as occurring mainly near the distal end of the shaft as well as on the distal epiphysis (2007:69). The presence of marks near articulations and joints is to be expected, though there are a few marks that seem anomalous located along the shaft of the femur. Overall, the location of the marks on the Fenske femur do not seem to be overtly suspect.
The Mud lake assemblage consisted of 19 bones with 10 of those having an observed 135 cultural marks along the surface (Table 1). The radius-ulna and foot were supposed to have been disarticulated completely (Johnson 2007) resulting in a series of cut marks. The presence of marks on the articular ends of the radius and ulna would seem to agree with that statement, however, a series of marks along the shaft of the radius must be called into question. These are located on the muscle ridge of the radial shaft but are oriented perpendicular, at least they appear so from the diagrams, to the shaft which is not conducive to the removal of meat from the bone. Perpendicular marks could occur during meat removal, if the goal was to remove every possible molecule of it, but again the likelihood of the complete consumption of every scrap of meat is slim.

The presence of cut marks on the feet bone presents another interesting quandary. These represent lower utility elements (Binford 1978, 1981) which likely would not be targeted, but see Hill 2008 for an example of exploitation patterns of these. The availability of “fatty meat pads” (Johnson 2007:77) could be used as an explanation for these marks. However, it seems unlikely that these would be targeted while marrow contained within the long bones was not, especially given the proposition that they were intensely butchered.

The third assemblage, Hebior, consists of 194 bones, with nine having a total of 16 marks. These share a similar pattern with Mud Lake, as a focus was placed on the feet of the animal. The only other elements to be modified were a left humerus that had one mark on the shaft, again an unlikely location, and a mark on the occipital condyle, with the last an indication that “the Hebior skull was severed from the axial skeleton” (Johnson 2007:77). This inference stems from the presence of four marks on the left occipital condyle and the fact that the crania was no longer in anatomical position when excavated. Of all of the elements to be disarticulated, the crania seems the least likely for several reasons. The first is that besides the tongue and brain, there are few nutritionally valuable portions. Additionally, to severe a skull form the vertebral column would require an immense amount of effort with seemingly little to no reward. This effort would require the human to chop/cut through the nervous system and fatty tissue. Of all places, this would seem most likely to leave behind a large number of marks due to the brute force
necessary to completely sever a head, and yet only four marks are present. The patterns simply do not make sense, nor do the conclusions follow the logical path. An alternative explanation for these marks again comes from observations of natural accumulations of bones that have been trampled by elephants. An assemblage if bones was examined that “had been kicked and pushed by elephants using their feet” and in one instance “the back of one elephant cranium has been scratched above the condyles” (Haynes 1991:158). While this is certainly not a definitive explanation, it is an alternative explanation for the seemingly illogical patterning of marks at Hebior.

Of the four localities, Schaefer seems to hold the most promise for representing an actual site where human-mammoth interaction occurred, at least at first glance. Ten of the 181 bones are reported to have thirty cultural marks of some form, but again some irregularities are present. Marks are reported along the shaft of the left humerus and the feet. Eleven marks were reported on the posterior border of a left rib, two on the centrum of a thoracic vertebrae, and one on the thoracic spine. Again, the location of these marks are simply not where they should be. This does not mean that they must be discredited immediately. They could in fact represent butchery and subsistence behaviors previously unknown in the archaeological record; however, other evidence indicates that is not the case.

The number of cut marks observed on a faunal assemblage can be highly variable. However, a basic principle dictates the expected amount of marks; the knowledge that producing a cut mark is an accident that can dull tools and should be avoided. These are not marks intentionally left by hunters of by-gone years to help archaeologists rediscover their life-ways. These are mistakes. With that in mind, it must then be stated that researchers should never expect to find cut or butchery marks of any kind on an assemblage. In a perfect world, these simply would not occur. Furthermore, these marks must then be preserved in order for researchers to observe them, further diminishing the likelihood of their existence.

The data collected in Table 2 shows the percentage of bison and deer long bones, in multiple assemblages, that have cut marks. The overwhelming majority do not have cut marks with the highest percentage of 16.3% and a total of 115 specimen with marks. These sites have multiple animals which only increases the chances of accidentally inflicting a cut mark. This means that these sites should contain
more cut mark instances than the proboscidean localities, however, this is not the case. In fact, Schaefer
and Hebior have similar percentages of cut marked bone as Cordero Mine and Lime Creek, which is
contradictory to what is expected.

Data from the Howard Goodhue site adds further perspective to this issue. This was an Oneota
village that was occupied much longer than any mammoth kill site. This would have resulted in an
accumulation of animal remains that had been butchered and processed, and yet only 185 of the total
assemblage of 5,491, or 3.36%, class 3 (deer-sized) specimen had butchery marks. An examination of the
long bones shows that only 121 specimen were recorded having cut marks from a total of 3,491 or 3.46%.
The class 4 (bison-sized) show a similar pattern. Twenty-six specimen had cut marks out of a total
assemblage of 1,429, or 1.81%, with the long bones showing even fewer marks, with only 9 out of 295, or
3.05%. The recovery of this material from a long term occupation shows a pattern of intensive processing.
The intensity of butchery at these long term occupation sites, where the goal is processing and time is
plentiful, should be higher than at a kill site, where the goal is to disarticulate. Highly fragmentary
assemblages may present some bias in the comparison, as fragmentation may destroy or obscure cut
marks as well as skew the percentages based on NISP.

The absence of remains has been attributed as being the reason why the Fenske and Mud Lake
had such higher percentages of bones with cut marks (Johnson 2007:67). This does not fully explain the
abundance of marks on individual bones as well as the total number of bones affected, especially given
the size of these proboscideans. To inflict a mark, the human must remove the soft tissue surrounding the
bone. An animal the size of an elephant has a large amount of meat to remove. The lack of meat on
smaller animals would then increase the chances of inflicting a cut mark. Therefore, deer-sized remains
should have more cut marks than bison, and bison should have more than proboscideans. This is not the
case with the Wisconsin mammoths. The proboscidean remains show similar, or even greater numbers of
cut marks as the deer-sized remains; opposite of the trend.

There is absolutely no reason to expect human hunters or scavengers to access the bone,
especially since they did not attempt to further process the limbs for marrow. Scavenging is even less
likely to produce cut marks as the meat strips are much easier to manipulate (Bunn and Ezzo 1993:384). The data presented simply does not fit within butchery patterns and human behaviors. However, an argument of cut mark identification and placement alone cannot fully answer whether humans did or did not manipulate and modify the faunal remains; as it relies too heavily upon a she said he said, subjective identification of bone surface marks. Instead, the argument can be further bolstered or discredited by other lines of evidence, such as the expected archaeological manifestation of human behavior at a butchery site.

Archaeological Evidence

The main focus of the Chesrow complex has been upon the lithic materials located at the site and the surrounding area, mainly due to the lack of well-preserved organic materials. Several criticisms have been leveled against the material and must be accounted for. These are misidentification of the responsible culture, the variability found within the points, and the behaviors associated with the selection of raw material use (Ellis 2004; Loebel 2005). Additionally, concerns surrounding the geology of the sites, such as the formation of the beach ridges on which the sites are located and the lack of buried diagnostic materials, will be addressed in order to test the veracity of claims for an OTC age and cohesiveness of the culture as a whole.

Lithic Analysis

Archaeologists often rely upon style or form, specifically in regards to projectile points, when discussing the characteristics of a culture. These projectile point styles provide chronological periods that are thought of as representing widespread cultures and allow comparisons between archaeological manifestations of these cultures across the landscape. However, the divisions constructed by archaeologists may not necessarily reflect the actual divisions between groups nor is the processes of style evolution fully understood. How and why new projectile point styles emerge are still questions that remain unanswered. Even with these questions, the use of projectile point styles to define cultures is a useful tool for defining chronologies of regions and analyzing widespread behavioral patterns; but stylistic attributes can also lead to misidentification.
The Chesrow complex has been described as being widely variable in terms of shape among the projectile points found (Overstreet 1993a). Others have attributed this variability to multiple uses of these sites by Late Paleoindian and Early Archaic groups (Loebel 2005:21). This problem is further exacerbated by the lack of any buried deposits of Chesrow complex materials. Therefore, no clear chronology, or even age, can be defined for Chesrow, much less how this complex relates to the other cultures of the Great Lakes region. In fact, the surface materials found at the Chesrow site could in fact represent the slow evolution of point styles. Therefore, the question of whether or not these points are a singular culture or if they are misidentified variants of surrounding cultures cannot reliably be answered with the data present, nor does it greatly increase our knowledge of the prehistory of the region. Instead, the behaviors recorded in the archaeological record should be analyzed to further our knowledge which could possibly allow a more accurate idea of what the Chesrow complex actually represents.

The presence of several sites attributed to the Chesrow complex makes it an unusual example of an OTC presence. No other proposed OTC archaeological collection has been attained from multiple sites, nor do most contain stylistic materials (i.e. projectile points) though there are a few such as Meadowcroft Rockshelter (Adovasio, et al. 1998) and Monte Verde (Dillehay 1997). This would seem to set Chesrow apart except for the inherent lacking within the tool-kit of this complex, namely the only tool attributed to the complex has been the highly variable projectile points recovered. Bifaces and other general tools have been found with points, but again these have all been recovered from surface scatters or from local collectors. While surface sites should not be discounted or viewed as less useful, when defining new cultures or attempting to attribute an age to these materials the lack of control is nothing if not harmful to these claims.

One characteristic that is shared amongst all of the Chesrow tools is the use of local chert cobbles for the manufacture of their tools. This has been offered as a potential link between the Chesrow complex and local proboscidean localities (Overstreet 1993a), as the same chert material was located at both sites, while others claim that this indicates a later occupation by those that manufactured the Chesrow points (Loebel 2005). This was further compounded upon by the presence of a fluted point manufactured out of
exotic material found in association with the Chesrow complex points and was argued to represent recycling of tools (Loebel 2005:21); along with a seeming dichotomy between the resource acquisition of these two groups. The use of exotic materials that are acquired and then transported long distances seems to be a widespread phenomenon among Paleoindians that diminishes with time. Therefore, lithic resource procurement behaviors would seem to indicate a Late Paleoindian/Early Archaic age for the Chesrow complex, but this alone does not provide an age for the complex.

**Site Geology**

The chronology of the archaeology of a region often relies upon the presence of organic material to provide the date of each culture’s existence which can then be used to cross-date other sites. Without the preservation of organic material it becomes difficult to anchor a culture temporally. Therefore, other methods must be utilized instead to achieve some sense of age and often times the geology of a site can provide at least a maximum age for an occupation.

The sites that make up the Chesrow complex are located along a series of beach ridges formed by the rise and fall of Lake Michigan over thousands of years. The formation and degradation of these ridges often obscures signs of prior ridges resulting in a record that can be difficult to tease apart. Various stages have been observed and two are of importance for the discussion here, Glenwood II and Calumet. According to Overstreet (1993) the Glenwood I beach was established by 14,000 B.P. and Calumet sometime around 11,200 B.P. There has been some discussion of a Calumet I and Calumet II stage, but no conclusive evidence has been brought forth (Hansel et al. 1985). Overstreet states that:

I have made the assumption…that the Chesrow site is situated on the Calumet strand of Lake Chicago. This assumption, however, is problematic. Registered surveys of the landform indicate an elevation of 192.8m (632.5ft) which is clearly too low for the Glenwood Stage (195m, 640ft), and is also well above the reported Calumet Stage (189m, 620ft). (Overstreet 1993:16).

Overstreet concludes that “the landform may be dated to sometime shortly after 13,000 B.P., but prior to 11,000 B.P.” (Overstreet 1993a:17). The confusion and uncertainty surrounding the actual age of the landform demonstrates the complicated nature of determining these ages. Other inconsistencies are
present with the Lucas site, as the elevation of the beach ridge (183-184m) seems to indicate that it was part of Nipissing I or II which reached an elevation of 180m about 4,000 B.P. (Hansel et. al. 1985). A cohesive set of data has not yet been presented to answer these inconsistencies but Overstreet states that the Chesrow complex rests upon a Calumet age beach ridge (Overstreet 1993a:28) with a maximum of age of 11,250 ± 180 B.P., taken from driftwood (Overstreet 1993a:15).

The presence of a single buried diagnostic artifact, a Durst point, at the Chesrow further exacerbates the problem. If the Chesrow complex is indeed a cohesive cultural unit that represents a pre-Clovis population it seems odd that an archaic occupation of the site has been covered by deposition while the much older material lies uncovered on the surface. Also, for the material to be old enough to have coexisted with the proboscidean remains it would have been inundated several times, however, there is no evidence of alteration or burial by fluvial processes. Others have noticed this inconsistency (Loebel 2005) and with the exception of one graver that shows evidence of water-rolling, artifacts at both the Lucas and Chesrow sites show no evidence to back up the purported age.

The inventory of artifacts recovered from the Chesrow and Lucas sites add another problem when attempting to discern the history of these sites. A series of water rolled pebbles and historic material were recovered during excavations (Overstreet 1987). The water-rolled pebbles would seem to indicate the presence of fluvial processes in the area but no modification to the artifacts themselves. The historic material, which was located downwards of 20-30cm below the surface, presents the possibility that the sediment was disturbed and mixing occurred (Overstreet 1987:63).

The overall geologic evidence seems to conclude that the Chesrow complex is most likely not a cohesive culture. This material most likely represents a palimpsest of misclassified artifacts and thousands of years of accumulation and reuse. Overall, there is simply no compelling evidence to warrant the attribution of the Chesrow complex as an OTC occupation, much less one that interacted with proboscideans regularly. Without evidence for a connection between the Chesrow complex and the local proboscidean localities, two questions must be asked: Who butchered the mammoths and/or did humans even interact with these animals?
The Schaefer and Hebior sites are unique among the mammoth sites in Southeastern Wisconsin as lithic materials were recovered during the excavation of the remains. Joyce has stated that “These artifacts nevertheless indicate a definitive human presence in Wisconsin in the late Pleistocene” (Joyce 2006:53), in reference to Schaefer, and that these were “contemporary with the deposition of the mammoth remains” (Joyce 2006:51). The lithics in question are two flakes of a local chert, cobbles of which are located in glacial till and are the same material as the points from the Chesrow complex. The presence of only two flakes has led some to disregard Schaefer as a candidate for a pre-Clovis occupation in Wisconsin.

Hebior differs from Schaefer as three artifacts were recovered from excavations at the former, with an additional artifact recovered “c. 1.0m north of the north limit of the bone pile on the same pond sediments as the bone pile” (Overstreet 1996:36). These artifacts were described as chert bi-facial knives, one flake, and the last a “crude dolomite chopper” (Overstreet 1996:36). The presence of these lithics has convinced some to accept Hebior as a legitimate site, though Schaefer still remains tentative. It has already been demonstrated that simply discovering debitage, or even undeniable human artifacts, in or around faunal remains does not definitively demonstrate direct association.

Data has been collected from several kill sites, both mammoth and bison (Figure 3) shows the number of projectile points recovered from the localities. While arguments could be made for or against the legitimacy of some of these sites, mostly those containing mammoth remains, they nevertheless provide a base line for the expected number of artifacts. Even given the differences in herd structure and number of animals killed, several interesting observations can be made. As a group, the mammoth sites tend to have fewer projectile points. This can be attributed to several potential factors, such as fewer points needed, wounded animals that escaped, smaller groups of hunters, etc. However, all but five of these sites contain at least one projectile point. This would seem to indicate that the lack of projectile points is the oddity rather than the norm but what does their absence truly mean? The recovery of any projectile points from kill sites, or even any site, should not be expected. Any complete points that could be accessed would likely be recovered and broken portions may even be reworked and reused. Points
excavated from a kill site are those that were inaccessible for retrieval and/or broken beyond use. This means that while the Wisconsin sites are outliers compared to the above data, this alone does not remove the possibility of a kill.

The lack of stone projectile points has even been cited as an indication of a reliance on osseous materials (Waters et al. 2011). The author additionally states that “the absence of stone projectile points at Manis, Hebior, Schaefer, and Orcas Island and the presence of an osseous projectile point at Manis suggest that osseous projectile points may have been the predominate hunting weapon during the pre-Clovis period” (Waters et al. 2011:352). The identification of the material as an osseous projectile point provide a potential explanation for the lack of lithic points. Unfortunately, the sites lacking lithic projectile points above additionally lack any evidence of osseous materials. This must raise the question of what evidence is required to clearly define a location as a kill site. Early sites in North America frequently have small and incomplete assemblages of both bone and stone. Since the recovery of hunting tools is not guaranteed, and butchery marks may not be present (let alone be indicative of a kill site by default) other forms of evidence must be examined along with other characteristics of known kills.

Debitage, or the waste generated from the manufacture of stone tools, has proven to be a tenuous indicator of prehistoric humans, as other natural processes can generate similar materials. However, this waste material also represents a large portion of the archaeological record, as each manufacture and maintenance event generates waste. The waste would fall to the ground to be buried and possibly be recovered thousands of years later. Butchery is an especially strenuous activity that employs numerous strokes and tool wear. This wear eventually dulls tools requiring sharpening, and leaves a pattern of large amounts of waste material. The lack of a use for the majority of flakes further increases the likelihood that of their permanent deposition, which is not the case for formal tools. Unfortunately, for some of the earlier discovered and recorded sites, flakes were not recovered. The data that is available (Figure 4) does provide telling information.

Hundreds, even thousands, of flakes have been recovered from these bison kill sites. These flakes are interpreted to be the waste material from butchering activities, as tools were manufactured and/or
sharpened. The general pattern at mammoth localities is a lack of lithic material altogether, especially in comparison to sites with bison. This could be an indicator that ideas about mammoth subsistence may be inconsistent with the reality. Even considering the differences between bison and mammoth kills, the overwhelming lack of lithic material cannot be explained by chance alone. While it might be possible that these mammoth hunters employed behaviors at a kill that made them all but invisible to archaeologists, it simply is not plausible. Of any of the above sites, Colby and Blackwater Locality No.1 seem the most likely candidates for mammoth kills as they actually have evidence of humans.

The general pattern throughout the archaeological record shows that humans are messy creatures. Their presence is demonstrated by the waste left behind from various behaviors. Butchering an animal is not a clean activity, especially one as large as a mammoth. If people truly were responsible for the death and/or butchery of proboscideans in Wisconsin, there should be more than six lithic pieces at two sites. The amount of material at Hebior, should be substantial since the crania is thought to have been severed from the vertebrae. Additionally, the location of the two flakes underneath the pelvis at Schaefer provokes another question, namely how did they get there? The large size of a mammoth does not lend itself to easy manipulation, nor does the presence of the internal organs allow for access underneath. Therefore, it does not seem possible that during butchery two flakes, the only two flakes, could have been deposited underneath the animal.

Often times, an association between materials is presented, but what this association means is often left unsaid. For some, it is simply a spatial relationship, or proximity of artifacts. Others use it to determine behavioral patterns, such as at the Lange-Ferguson site where projectile points were recovered from the same strata as mammoth remains and said to be associated (Hannus 1990:87). In this case, there was no direct spatial association, but based solely upon geologic data, a behavioral association was derived. Simply recovering artifacts in proximity to one another does not immediately demonstrate a human-animal interaction, nor should their “association” be used to blindly evidence behavioral patterns. Schaefer and Hebior do contain lithic materials, but their exact relationship with the faunal assemblage remains tentative. Pieces of stone have been recorded as being ingested by elephants (Haynes 1991:139)
and could potentially explain their presence near the abdomen but what formed them and how they arrived in the sites is still unknown.
CHAPTER 5

CONCLUSIONS

The case for OTC occupations in North America has often been fraught with inconsistencies and questionable evidence. Skepticism has been leveled at the majority of these claims and few have survived the criticism. The debate has not always been healthy or helpful, but this does not mean archaeologists should ever lower their standards. While some have cried foul and claimed that sites have been treated unfairly, this does not discount the issues surrounding these sites. This includes the case for pre-Clovis in Wisconsin.

The Chesrow complex simply does not have enough evidence to suggest that it represents an OTC occupation. No dates have been provided for the age of this material, though this is a problem for many sites in the Midwest. Poor preservation is, and always will be, the bane of chronologies. However, rather than extrapolating out from the small data available, more research should be conducted to answer the question of what the Chesrow complex actually represents. At some point, it must be recognized that there will always be more questions than answers, and at times these questions are unanswerable. The evidence will never change, but the methods researchers employ can.

The published data for the Chesrow complex seems to indicate what Overstreet first suggested. It most likely represents a series of Late Paleoindian and Early Archaic occupations in southeastern Wisconsin. The diversity that has been attributed as a common characteristic of the projectile points most likely is just that; diversity in projectile point morphology that has resulted from years of cultural evolution. There is simply no reason to assume that a surface collection represents the technology of one cohesive group or culture. A large portion of the interpretations surrounding the age and nature of the Chesrow complex was due to the idea that the area was devoid of Clovis or Clovis age artifacts. Time has shown this to not be true, as fluted points have been found throughout the area (Joyce and Blazina-Joyce 2002).

The connection between Chesrow and the nearby proboscidean sites was tenuous at best when first introduced. The proximity of sites, a supposed lack of Clovis age materials, and the presence of local
cherts at both sites was used to support these claims. These are weak arguments that do not have supporting evidence. Proximity and shared material types do not demonstrate a link between two different sites. This type of explanation does more to hurt our understanding of the past, as it sows the seeds of misinformation not only within the minds of the archaeological community, but the public understanding as well.

Even the claims surrounding the mammoth and mastodon sites in southeastern Wisconsin do not match with the available data. The number of supposed butchery marks and location on the faunal remains do not match with known butchery patterns. Not only is it highly unlikely to observe that many butchery marks, the number of lithics recovered with the remains far too low for a purported complete disarticulation of a mammoth. Simply recovering flakes, whether they are human in origin or not, does not demonstrate a direct association between humans and mammoths.

If the Chesrow complex does not represent a pre-Clovis occupation, the question remains of what it does represent. People occupied southeast Wisconsin and produced the material now known as the Chesrow complex but beyond a small sample of tools this culture remains unknown. Future research could greatly add to our knowledge of Wisconsin prehistory if devoted to trying to discern how these people lived and what their place was in the region.

Schaefer, Hebior, Mud Lake, and Fenske represent a similar situation. Rather than focusing on ramrodding evidence into a hypothesis of human exploitation they can provide data for the history of these animals towards the end of their species’ life. How the two artifacts ended up underneath a mammoth skeleton is puzzling and worth answering if possible. However, an extensive taphonomic study could provide information for the environment, how these animals died, and the processes involved in their deposition, burial, and modification. If the focus continues to remain on the human involvement with the remains significant data will be ignored and incorrect data will be generated.

The question of when and how humans entered North America has been at the forefront of archaeological research for many years, and still there is no definitive answer. The discoveries at Folsom and Blackwater draw demonstrated a much longer prehistoric record than previously thought. Today, new
discoveries seem to suggest an occupation earlier than the established \(~11,500\text{ B.P.}\), however, many of these sites have been discredited. This is largely due to shoddy excavation practices, misidentification, and unscientific methods. A new discovery should never be taken at face value. Rather it must be tested and tried as many times as necessary to establish the veracity of the claims. More excavations and more research certainly are needed, as are additional methods for the analysis and discussion of this material. It is not acceptable to simply declare war on the old paradigm, in favor of a new but potentially flawed.

The lack of published data, or lack of quality, has often hindered peer-evaluation and meaningful debate. A large amount of the early publications about the Chesrow complex were investigative reports or special publications that are now largely unavailable. This practice has extended into the current debate over OTC sites. One such example is a recent publication (Stanford and Stenger 2014) where papers from a meeting were assembled and self-published, seemingly without peer-review. This allows potentially shoddy data to slowly enter, that later may be cited without widespread evaluation of its scholarly merits. This only furthers the ability of critics to completely refute the possibility of pre-Clovis, without truly engaging in debate.

It has been said that archaeologists that study the first people in North America have often been biased or unfair with any sites that have been used to claim an OTC occupation. Unfortunately, many of these sites have indeed been proven to have errors and inconsistencies that destroy any potential credibility. However, this does not demonstrate the absence of an OTC occupation. In all reality, too much debate has focused on whether a site is older than Clovis when the dates for Clovis occupation are few and spatially biased. The idea that Clovis simply arrived in North America and instantly spread at 11,500 B.P. is completely ludicrous. Rather the most logical explanation is that of a slow and gradual movement of people that has been all but obscured through time. The initial populations that moved into North America were all but invisible until enough people were on the landscape to leave behind some trace of their existence, which had to survive for thousands of years, and then be discovered by archaeologists. It is the absolute example of the needle in the haystack, except now with arguments about
which needle is older. If an OTC occupation truly exists, it will undoubtedly be found, and will not require researchers to infer beyond the limitations of their data.
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Leonhardy, Frank C.
Loebel, Thomas J.

Lupo, Karen D.

Lyman, R. Lee

Mason, Ronald J.

Meltzer, David J.

Mulligan, Connie J., and Andrew Kitchen

Oliver, James S.

Olsen, Sandra L., and Pat Shipman

Overstreet, David F.


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Figure 1: Location of pre-Clovis sites in North America and sites associated with the Chesrow complex
Figure 2: Timeline of Publications for the Chesrow complex and proboscidean localities.
Table 1: Elements from Mammoth sites with reported number of cut marks

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<th>Site</th>
<th>Element</th>
<th>Number of Cut marks</th>
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<tr>
<td></td>
<td>Ulna</td>
<td>44</td>
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<tr>
<td></td>
<td>Radius</td>
<td>32</td>
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<tr>
<td></td>
<td>Distal Radius</td>
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<tr>
<td></td>
<td>Magnum</td>
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<tr>
<td></td>
<td>Scaphoid</td>
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<tr>
<td></td>
<td>Trapezium</td>
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<tr>
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<td>Metacarpal 3</td>
<td>2</td>
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<tr>
<td>Mud Lake</td>
<td>Femur</td>
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<tr>
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<td>Ulna</td>
<td>44</td>
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<td>Radius</td>
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Table 2: The percentages of bones with cut marks from butchery/kill sites. Data from Hill 2008 and Hall 2007

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<tr>
<th>Site</th>
<th>Cultural Affiliation</th>
<th>MNI</th>
<th>LB NISP</th>
<th>Cut</th>
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<td>707</td>
<td>115</td>
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<td>Casper</td>
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<td>866</td>
<td>123</td>
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<td>MFL</td>
<td>Folsom</td>
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<td>Rourke</td>
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<td>212</td>
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<td>12 Mile Creek</td>
<td>Folsom?</td>
<td>13</td>
<td>85</td>
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<td>Cordero Mine</td>
<td>Middle Plains Archaic</td>
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<td>355</td>
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<td>Lime Creek, combined</td>
<td>Paleolithic</td>
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<td>562</td>
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<td>Sjovold, combined</td>
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<td>HGM</td>
<td>Hell Gap</td>
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<td>Cooper, kills combined</td>
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<td>518</td>
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<td>Hell Gap (Cody)</td>
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<td>Agate Basin</td>
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